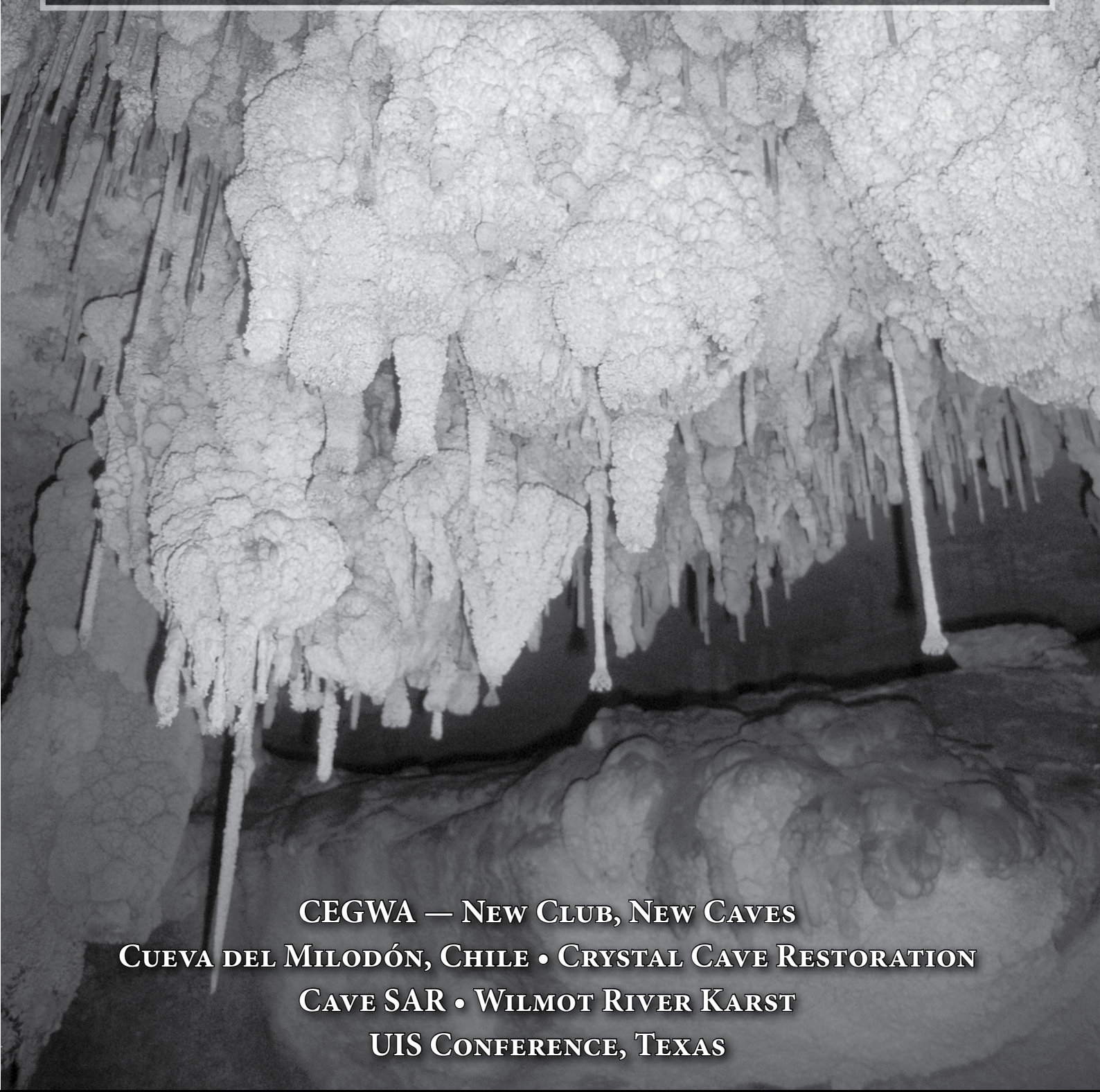
CAVES AUSTRALIA

The Journal of the Australian Speleological Federation



CEGWA — New Club, New Caves

Cueva del Milodón, Chile • Crystal Cave Restoration

Cave SAR • Wilmot River Karst

UIS Conference, Texas

No. 179 • JUNE-SEPTEMBER 2009

(Printed December 2009)

COMING EVENTS

In particular, this list will cover events of special interest to cavers and others seriously interested in caves and karst. This list is just that: if you are interested in any listed events, Elery Hamilton-Smith: elery@alphalink.com.au or Nicholas White, (Chair of the International Commission) nicholaswhite@netspace.net.au may have further information. The relevant websites also are useful. Details of other regional/local overseas events can be found on the UIS/IUS website http://www.uis-speleo.org/. Although several things are planned for 2010 the detailed dates are not available.

2010

2 January 2010

ASF Council meeting. Bankstown Grammar School Bankstown. Details will be sent to member clubs soon.

12-16 April

Fourth UNESCO International Conference on Geoparks, Langkawi, Malaysia.

16-19 April

Second Global Geotourism conference, Kuching, Sarawak.

21-29 April

ACKMA Annual General Meeting 'Week', Mulu Caves, Sarawak, Malaysia. This event is pretty booked out now.

4-8 July

Australian Earth Sciences Convention Earth Systems: change, sustainability, vulnerability. Canberra Convention Centre, ACT. Details available on http://www.aesc2010.gsa.org.au

12-14 July

Fourteenth Australasian Bat Society Conference, Charles Darwin University, Darwin, Northern Territory. Check website http://conference.ausbats.org.au/ for details.

7-17 August

Fourteenth International Symposium on Vulcanospeleology Undara, North Queensland, Pre-conference excursion to the Western District Volcanic Province of Victoria 7 – 11 August 2010. Meet in Melbourne 6 August. The excursion will be a series of visits to different lava caves and volcanic features between Melbourne and the SA border. 11 August (Fri.) Excursion participants fly Melbourne Airport to fly to Cairns, overnight Cairns. A group booking is being organised for this to minimise transport problems. Non-excursionists arrive Cairns 12 August (Sat.) Travel to Undara by bus. Symposium: Saturday 12 to Monday 16 August (5 days). Tuesday 17 August participants by bus to Cairns as early as practicable (depart 8am; 4 hour trip). Details of costs and accommodation are currently being worked out. Enquiries: Greg Middleton ozspeleo@iinet.net.au

20-24 October

ISCA (International Show Cave Association) Congress, Slovakia. Liptovský Mikuláš, Demänovská Dolina. Congress theme: "Complex approach in show caves management and protection". A web link to information on the conference is available via www.ackma.org.au or directly to http://tinyurl.com/yeuzcs3

31 October—4 November

National Groundwater Conference 2010 — the Challenge of Sustainable Management. National Convention Centre, Canberra. Email: groundwater@con-sol.com

Further ahead

Easter 2011

Chillicon, ASF Biennial Conference. Chillagoe, North Queensland—28th Biennial Conference organised by Chillagoe Caving Club. CCC aims to make the Conference fun and interesting with lots of caving, speleosports etc. Some speakers already organised, including a couple of international/eminent ones.

May 2011

Nineteenth ACKMA conference, Ulverstone, Tasmania. Planning is under way for the next ACKMA conference. Details: contact Cathie Plowman or Rolan Eberhard.

27-30 June 2011

Sixth International Conference, Climate Change—The Karst Record, will take place at the University of Birmingham. Three days of oral and poster presentations will be held on the University of Birmingham campus, with accommodation provided on the University Conference Park and in local hotels. Either side of the main meeting, one-day optional field trips will be run to regional karst and tourist attractions.

An announcement calling for poster and oral presentations will be made in late 2010, but if you are interested in attending, please keep these dates free.

CAVES AUSTRALIA

Caves Australia is the Journal of the Australian Speleological Federation and is published quarterly.

Editor:

Brooke Grant
Phone: 0415 310 091
Email: bg2caves@gmail.com

Production and Advertising Manager:
Alan Jackson
Email: alan.jackson@lmrs.com.au

Proof Reading:
Susan White
Greg Middleton
Joe Sydney
Jodie Rutledge

ASF: asfinfo@caves.org.au
For all ASF publications:
publications@caves.org.au
Editorial contributions are welcome!
For contributor guidelines, contact the Production Manager.

Advertising
Contact the Production Manager for commercial, caving community and classified rates. Rates range from $5 to $400 for full page mono back cover. Discounts apply for placements of 4 adverts and an up-front payment.

Issue Dates
March, June, September and December

Magazine Subscription
Journals are included within ASF membership fees. Subscription to magazine is also available to non-ASF members at $25.00 including postage within Australia for one year (four quarterly issues).

Change of address
Notify us immediately of any address changes to ensure delivery of your *Caves Australia.*

As no issues of Caves Australia *were able to be published in 2007, the publication dates will include the actual dates the issue is produced.*

Layout and Production by Summerleas Print, Kingston, Tasmania

Caves Australia

No.179 June-September 2009 (printed December 2009)
Australian Speleological Federation
PO Box 388 • Broadway • NSW 2007 • www.caves.org.au
ABN 15 169 919 964
ISSN 1449-2601 • Registered Publication NBQ0005116

ASF

Contents

Cover: King Browns Cave, WA—coral roof and formations. Photo by Paul Hosie

ASF Executive

From the Editor

WELL, gang, we have another special double issue to finish the year.

Thank you, 2009 contributors, for helping us get the magazine back on schedule.

Feedback on the new layout has been excellent, and this feedback must be shared with our authors. Thank you!

We hope you enjoy reading the updates on what is happening in Cave Search and Rescue.

Please, make 2010 the year your club gets involved in local and state activities that can contribute to ASF's national cave SAR response plan.

Who knows, the next incident may involve you …

Cave vandalism! See what our WA clubs have been up to in cave restoration this year.

Don't hesitate to contact our article authors if you want first hand accounts of the practicalities of clean-up methods.

As usual, there's always more inside; enjoy the issue, the summer and the New Year.

Regards,
Ed

WANTED
ARTICLES FOR CAVES AUSTRALIA!

Whether caving, cave diving or general exploration, *Caves Australia* readers are interested in YOUR story.

It is only with YOUR contribution that we can produce a quality magazine for all to enjoy.

For writing and style guidelines, contact the Editor or Production Manager for further information.

President's Report

AS EACH YEAR passes, the nature of caving in Australia changes subtly. Our continued ability to explore and document caves relies on a multifaceted approach to the preservation of three elements: the caves, the cavers and the agreed commitment of care between the cave managers and cavers.

1. The Caves — Caves exist for a long time whereas cavers are much shorter lived and yet, they may be an accelerator of cave change. Caves act as storage vessels of living and dead biological material. The removal or destruction of any of the information contained in every single sample must be well justified by researchers or souvenir hunters. Caves have evolved slowly and even a single specimen removed may have a significant impact. We are deeply involved in the conservation of caves but we must consider the artefacts they contain, the decoration and the bone deposits, the flora and fauna. Minimal impact does mean taking nothing but photographs.

2. The Cavers — Over the 35 or more years that I have been caving, I have experienced and worked around a multitude of hazards both seen and unseen in pursuit of an activity I still find rewarding and satisfying. I look back and consider the numerous loose rocks dislodged, the fatigue induced disorientations, the tightest bone-stressing squeezes, the frayed nerves and frayed ropes. Plus, the encounters with foul air, radon gas, choking guano, ammonia, airborne and surface micro-organisms, bat bites, bird-eating spiders, resident snakes and unwilling cohabitors; I still smile that I am alive to enjoy it all.

Most of us are self-taught with regards to how to deal with hazards and it usually boils down to common sense from within and that useful information handed down before and after trips. There is a need to be less settled about some of the hazards and be inclusive in our safe caving mindset. How many of us know what to do when we are exposed to bat saliva, urine or a bite? How many of us enter caves with known foul air without appropriate equipment or training? How many of us know how to identify the presence of *Histoplasma capsulatum* in a cave? How many of us are able to identify a developing medical emergency in our caving party as trained first aiders? It is time to become aware and prepared.

3. Commitment — ASF must be a voice for caves and cavers and it must be the first point of call when other authorities want

knowledge of karst features. ASF must be seen as a relevant resource that can be accessed and relied upon. We must have a voice that is both strong and resonant when needed and yet austere in its routine business. ASF must be able to prevent, control and correct broken trust and relationships with all manner of land managers. We must be prepared to get out and meet the managers and discuss the issues and stick to the decision. We must be able to stop the random acts of thrill seekers, straining lasting relationships of trust.

Where do we fall short?

We fail to put knowledge in an appropriate format. We worry too much what will be lost and what others may gain. We hoard our expertise too much, by secreting information and articles in overflowing boxes and shelves. Clubs are organised within their own patches and yet overall we seem to be out of step with the requirements of State authorities and their legislation development. Too often, we are fighting with knee-jerk reaction to things we should have been integral in developing.

We are criticised from within for not being up to date and not moving forward as recruiters of new cavers and new ideas. How do we become more relevant and proactive?

I am very pleased that many of the procedures and policies and codes are being vigorously reviewed and updated. Changes within clubs also result in streamlining with a more inclusive and effective member involvement.

We must be vigilant and pro-active.

Looking forward to seeing many of you at the next Council Meeting early in January in Sydney.

In Caving,
Stan Flavel

CEGWA – New Club, New Caves!

Paul Hosie
CEGSA and CEGWA

IT IS my pleasure and privilege to announce to you that a new caving club has been established in WA – the Cave Exploration Group Western Australia (CEGWA) Inc. The club is named in honour of CEGSA—a group we are grateful to for setting such an excellent example, of how an active and enthusiastic caving club can be successfully run and so supportive of its members. CEGWA may not achieve a fraction of what CEGSA has done during its history, but we will certainly have a lot of fun trying!

CEGWA Background

CEGWA has been formed to fill a gap in WA caving—a community group where the social and recreational caving pursuits of its members takes priority. With more than 55 members and hundreds of thousands of square kilometres of limestone to explore, the future looks very bright indeed!

CEGWA Objectives

The Objects of the Group are as follows (direct extract from the CEGWA Constitution):

- To provide a safe, friendly and fun social environment for the Group's members.
- To explore, survey and study caves.
- To foster recreational caving, speleological research and the preservation of natural caves, with particular emphasis on the caves of Western Australia and the Nullarbor Plain.
- To place on record the results of the Group's activities.
- To foster adherence to the Standards and Codes of Practice of the Australian Speleological Federation.
- To co-operate with land managers, traditional owners and other community groups in the furtherance of these aims.

The CEGWA Team

We are particularly proud and privileged to have the considerable experience and wisdom of people like Dr Roger Howlett, Frances Loveday, Mike Newton and John Cugley as invaluable members of the CEGWA team.

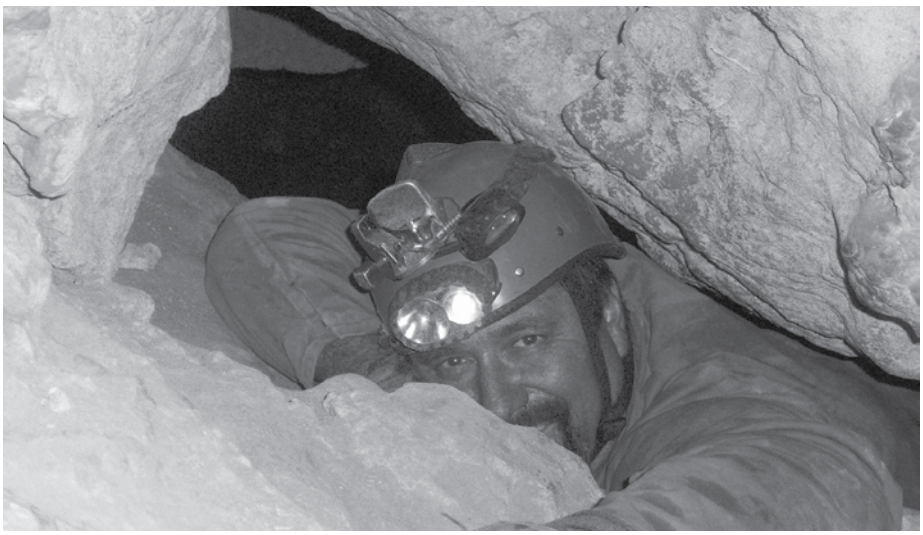
All successful clubs know that young people provide the enthusiasm and energy needed to get out there and do great things and we have a number of youthful members (aren't we all?) to keep the 'older' members of the team motivated. Peter Rattigan and Kym Hosie have applied their creative talents to producing and maintaining the dynamic and beautiful www.cegwa.org.au website and *CEGWA Capers,* our quarterly newsletter, both of which we are very proud. I invite you to check it out and give us your constructive feedback—it will be very welcome.

An application for corporate membership of the ASF has been submitted for consideration at the next ASF Council meeting in January 2010.

Your club's support of our application would be greatly appreciated!

Recent Cave Explorations in WA

In the true spirit of cave exploration that CEGWA represents in WA, we are happy to report that a number of discoveries have recently been made by our members, including several beautifully decorated caves, over 100 karst features not yet in the ASF KID

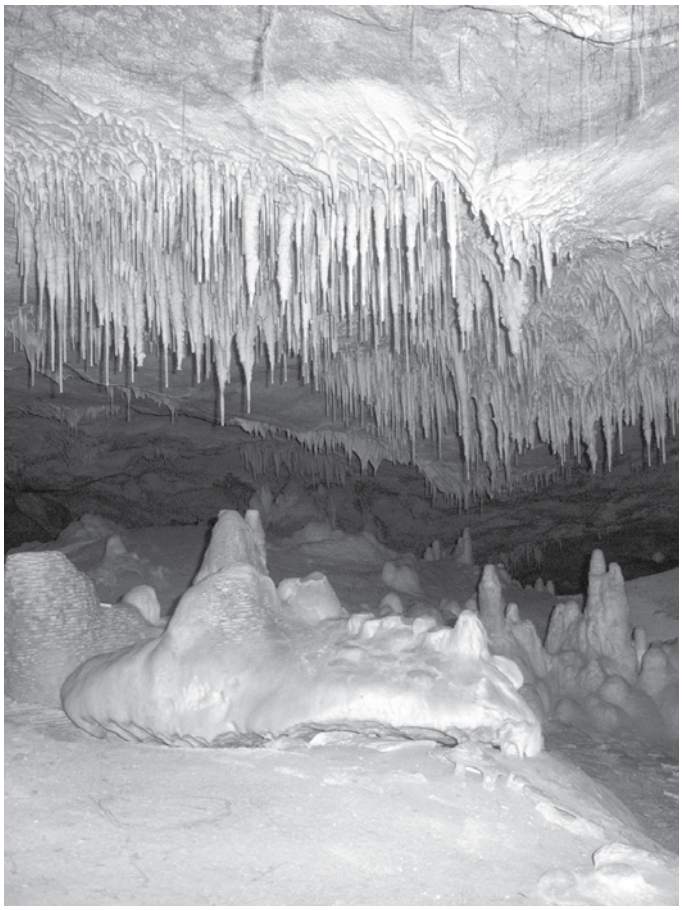


PAUL HOSIE

John Cugley—not so squeezy

PAUL HOSIE

King Browns Cave—coral roof and formations



PAUL HOSIE

New Cave—Mudmens Palace

and a possible new cave diving site which has all the indications of being a significant cave system—stay tuned for that one later in 2010 (mum's the word!)

Eneabba

Probably the most significant discovery we have made was on June 26th this year when I happened across a small sandy doline under a bush thicket in the Beekeepers Nature Reserve. *(CA*176:5)

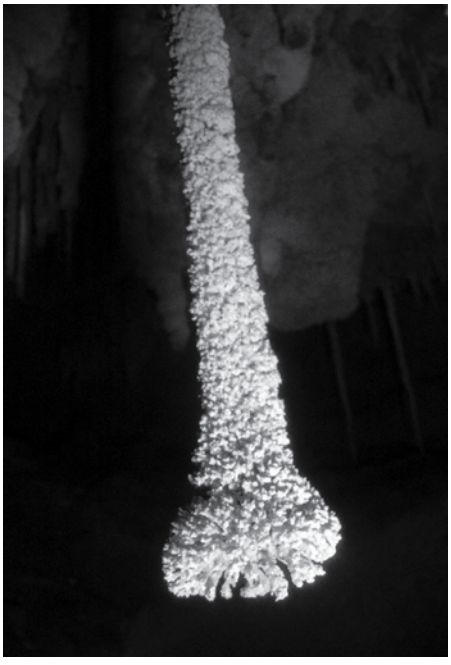
The water all drained into a small cluster of solution tubes—lo and behold, one of them was big enough to access and dropped 3 m straight down into a low roofed, 30 m wide x 1 .5 m high chamber.

Crawlways lead to the three main chambers of the cave, the largest of which is 35 m in diameter and 8 m high. Virtually the entire chamber—ceiling, floor, walls and boulders are covered in multi-coloured speleothem deposits, the diversity of which is remarkable.

In addition to the regular straws, stals and flowstones, there are pendulites, shawls (including one 3 m long and 1 m wide), moonmilk, cave coral, calcified tree roots, dogtooth spar crystal in gour pools, helictites, cave pearls and the fascinating soil heligmites which we refer to as the Mudmen.

A low wide chamber at the furthest SE extent of the cave is notable for the number and size of the Mudmen it contains including some that are growing off the top of stalagmites. This unusual and beautiful place we have named the Mudmens Palace.

Peter Rattigan, Kym Hosie and myself were the privileged first to explore and photograph the cave (designated 6-E100) on 27th June 2009. Mike Newton and Kim Halliday joined me one week later to begin the survey of the cave and John Cugley helped set up the track marking in early August. Mike Newton has been caving in WA for over 30 years and his comment, 'That's the best decorated cave in the Eneabba area—better than Weelawadgi, I reckon,' is a great accolade.



PAUL HOSIE

King Browns Cave—coralloid sucker pod

I think what makes it stand out from all the other caves in the area is the pristine condition and diversity of the speleothems, which is so rewarding to see and our number one aim is to keep it that way.

The land manager (Mr Keith Hockey, DEC-Jurien) has been briefed on the discovery.

Our intention is to complete the survey and track marking of the cave prior to submitting a report to the land manager with recommendations for its future management.

There is no doubt, this is a significant discovery and the cave will probably be locked and added to the Caves Access Committee list for future protection.

Nambung National Park

In addition to 6E-100, CEGSA/CEGWA members have also discovered and commenced exploration and mapping of two beautifully decorated caves in the Nambung National Park.

The park is located about 200 km north

PAUL HOSIE

Kaisers Cave – Roger Howlett in newly discovered chamber

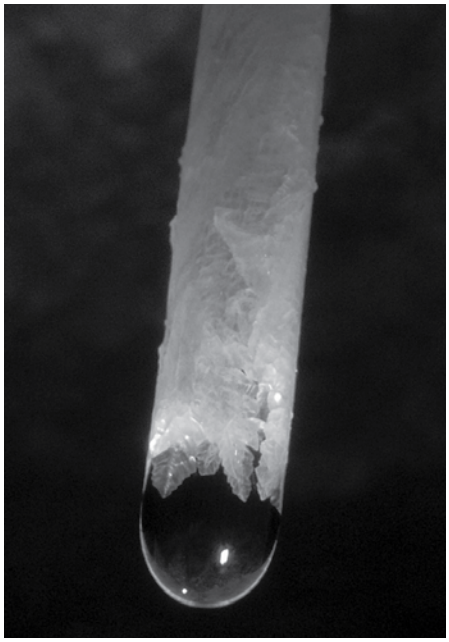
of Perth and 100 km south of Eneabba and is famous for the Pinnacles which are of course, limestone!

The karst region is referred to as South Hill River (6SH). Kaisers Cave was discovered by Peter Rattigan on 31 July 2009 when he fell into it.

The initial discovery and exploration revealed the stunningly decorated main chamber—Kaisers Hall (25 m long x 15 m wide x 3 m high) and a large floor-pit which was unsafe to descend without some rope.

In late September, Dr Roger Howlett and the author descended the floor-pit to explore another 100 m+ of finely decorated passages and chambers in the cave.

In early October 2009, a small hole in a shallow depression a short distance from Kaisers Cave was investigated and found to lead into a fascinating cave in which all the walls and ceilings from the entrance to the lowest point (approximately 20 m below the surface) are covered in a thick layer of the most delicate and pure white cave coral imaginable.



PAUL HOSIE

Nambung National Park straw detail

A detailed survey of both caves has commenced and it is hoped this will help us to identify a connection between them so we can publish a map of the entire cave system.

More to Come!

Some of the photos of the new caves are with this article, but the CEGWA website www.cegwa.org.au has more photos in full colour for you to check out, together with more details of the caves and the stories of their discovery and exploration.

We look forward to contributing more cave and karst news to you in the future.

Kindest regards
Paul Hosie
President
Cave Exploration Group
—Western Australia

Caves Australia

Are we ready to move into the 21st century?

Alan Jackson
STC

***CAVES AUSTRALIA* appears to be out of the woods and back on a regular production time frame. Next on my agenda is a desire to see *CA* available electronically on the internet, giving members the option to not pay for a printed hardcopy. There are pros and cons associated with the proposal, most of which I hope have been addressed below. Are the ASF dinosaurs ready to lie down and let the next generation pull some strings?**

Why don't we have the option of receiving an electronic copy of our quarterly publication, *Caves Australia?* It is all very easy to say "Hey, I don't want to pay $20 a year to receive a hard copy when I could be downloading a pdf for free!", but it's actually a bit more complicated than that. Now that I'm experienced with the inner workings of the magazine, its components and costs, I think I'm ready to mount an educated appraisal of the options.

Currently each individual ASF member contributes $20 to the annual production of *CA* as a component of their 'subs' or membership fee. For those hard of learning, that's $5 per person per issue. Traditionally one 'issue' is comprised of 24 pages, but due to the state of 'catch-up' that we're currently in we have recently been producing 'double issues' whenever possible, which are comprised of 44 pages each (yes, I know double 24 is 48, not 44, but I'm sure you don't want two front covers, two contents pages and two lots of coming events and advertising – you get double the content but the same amount of 'dressing'). The recent double issues have confused the budgets a little as there are inherent savings associated with preparing, printing and mailing a 44 page issue versus two 24 page issues. The budget is double but the layout and printing costs are slightly less than double and the postage cost is only about 1.4 times the cost of two singles. Assuming that we'll have caught back up before any of my proposed changes are implemented, I will ignore the concept of double issues in the following cost comparisons. Current cost components for a typical single (24 page) issue, based on a print run of ~700 (i.e. a budget of $3500) are roughly the following:

Layout	~$340
Printing	~$2200
Mailout	~$230
Postage	~$700
TOTAL	~$3470

No doubt $340 for layout will cause a few eyebrows to go up. I have this to say: finding an ASF member volunteer with enough time to coordinate editing and production of *CA* quarterly is a challenge. Finding one with enough time to coordinate the above, be proficient in a software package suitable for preparing the magazine to the quality members expect and THEN having enough time to lay it out with that software, quarterly, would be near impossible. I'm not interested in hearing arguments regarding this component (unless you're a volunteer, proficient in InDesign with lots of spare time to donate!)

We also sell advertising space in the magazine which generates approximately $4-500 per issue (the number of advertisers varies from issue to issue). This essentially covers the layout costs and then some.

So what are the ramifications of 'going electronic'—making hard copy subscription optional? The bottom line is that it will cost more for those individuals who wish to continue receiving a hard copy. Electronic subscribers will still be required to contribute something to the cost of production. It will still cost money to get the layout done and produce the pdf version and I would expect that hard copies should still be sent to member club libraries, national and international libraries and international exchanges (NSS, BCRA etc), though some may opt to receive electronic versions. The cost breakdown will vary depending on the ratio of hard v electronic subscribers. I will now attempt to give an example revised cost breakdown.

Let's assume we get a 50/50 split (i.e. half of the members wish to continue receiving a hard copy while the other half want to subscribe electronically). Working with the number used in the earlier cost breakdown, we'll assume a print run of 700. Of that 700, not all 700 are individual people; there are approximately 70 exchanges/library deposits/member clubs. That leaves 630 'people', half of which, 315, will receive a hard copy. Layout will need to be contributed to by everyone, printing will be broken into two components (hard copy versus electronic—with exchange cost contribution). Mailout and postage will be broken down similarly to printing.

Layout	~$340
Printing (385)	~$1250*
Mailout (385)	~$130*
Postage (385)	~$400*
TOTAL	~$2120

* these figures are higher than simply <"700 cost"/700*385> as materials cost will reduce proportionally but 'administration' time won't. Postage is also likely to be warped as a large number of the exchanges are international which will increase the average unit price.

Just simply (but as we've already established, incorrectly) dividing this new total by the number of hard copy subscribers (315) gives us a value of $6.73 per hard copy receiver (versus $4.95 in the initial example). Not a huge difference, it appears. Calculating it more accurately (where the total 630 members share the cost of the 70 exchanges) generates numbers along the lines of $6.10 for the hard copy receivers and 60 cents for the electronic subscribers. How about if only 100 people wanted to receive a hard copy (i.e. 170 print run)? I estimate this would cost about $1180 all up. So this means an incorrect value of $11.80 if just the hard copy subscribers cover all costs, or, more accurately, $7.72 for hard copy receivers and 77 cents for the electronic subscribers. An increase from $5 to say $8

per issue as a worst case scenario isn't terribly shocking.

A survey of members is required to establish what percentage of the membership would be happy to proceed with an electronic option (assuming costs are comparable to the above rough workings) and if it were to go ahead, who would opt to receive hard copies and who would opt to receive electronic copies. Following this, a true calculation of costs could be determined.

Other things to consider:

Web hosting: We'll need somewhere to host the file to make it available for download—the Federation has a website and this should be easy.

Member notification: We'll need a system of notifying electronic subscribers that the issue is available—the relatively new ASF database is already capable of doing this, via bulk emails. One would assume that if you want to download your *CA* off the internet then you have internet access and an email address!

Access restrictions: Are we happy having the publication available on a website where it is open to all and sundry? This was a perceived problem when STC began posting its publication, *Speleo Spiel,* on the web and I believe Sydney Speleological Society is currently discussing the same issue. The ultimate position arrived at by STC was that hard copies of our publication went to various public libraries around the state and the country, so the information contained was already available to the general public. The counter argument to this, while acknowledging the veracity of the previous statement, was that potential mis-users of the information are not likely to have the patience to track it down in a reference library, but the rapid and automatic searching via the electronic medium of the internet would make it simple for them. STC already had a policy of not publishing sensitive information in its journal (cave entrance locations etc) and therefore it wasn't a real problem. Throughout the course of this argument I was very skeptical that there were really any baddies out there desperately waiting for the opportunity to destroy our karst via the internet anyway! If it is considered too much of a risk, the download can be set up to be password protected and only the current issue be available on the web at any one time. Having the magazine easily available to people outside our membership might actually be a positive thing for the Federation—individuals accidentally stumbling across it may go on to join the federation or one of its member clubs. Free advertising, you might say.

Administration and Management: Charging a flat rate to all members (currently $5) is easier to manage than a two-tiered system of hard copy/electronic subscribers. This task would most likely fall to the treasurer, with the membership secretary playing a secondary role with the membership database. The database would have to be amended to accommodate a new field. However, with the new database now delegating a large portion of the updating to the individual member clubs this should spread most of the extra workload out and not victimise a couple of individuals.

"Returns to Sender": Every issue generates a small number of returns (where changes of address are not updated on the member database). ASF is charged for any such returns. This cost would likely reduce, as there would be less magazines mailed.

Advertisers: I haven't canvassed any of our current advertisers to gather their opinions on such a move. Whether they would be more or less likely to want to advertise in a predominately electronic format is unknown and needs investigation. The cost estimates listed above have essentially ignored advertising revenue, so if advertisers continued to support the magazine it would only make those figures smaller.

Image quality: Arguably one of the best outcomes of 'going electronic' is the subject of colour. Printing in colour is an outrageously expensive exercise; this is why the vast majority of *CAs* are black and white, with the occasional splurge when the budget allows. Colour in an electronic medium, however, costs nothing more. Basically, it will cost members who opted for the digital version nothing extra to have all pictures in colour. Hard copies would still have to be produced in black and white to contain costs.

File size: A high quality/resolution pdf, depending on the number of images within the individual issues, creates relatively large file sizes. A single (24 page) issue with a relatively small number of lower quality black and white photos could come in as low as ~6 mb but a colour image rich issue could easily exceed 20-30 mb. This is increasingly becoming less of an issue, with internet speeds and download plans constantly improving. It wouldn't appear to be a major issue but may be an important component of the decision-making process for people with more basic internet access and plans. It would be easy to put the b&w version on the same site so people could chose the size that suited them.

Saving the planet: For all you die-hard greenies out there, fewer printed copies means less paper and less oil burnt to wrap them in plastic and cart them to all corners of the country. This equals a smaller 'carbon footprint', which is all the rage in the current climate. ASF likes to promote itself as an environmentally active and friendly organisation—here's our chance to do a bit more. (This argument may be partly countered if a large portion of the e-subscribers choose to print out their own hard copies on their home printers but the organisation would still be doing 'the right thing".)

Membership increase? while I can't speak on behalf of clubs other than STC, it is fairly widely accepted at STC that higher fees discourage the attraction and retention of new members (the fact that Tasmanian caves are deep, hard and filthy accounts for the remainder!) A large percentage of our potential new members are students and other young people with limited budgets. We have managed to keep our annual membership fee low over recent years (~$20 for electronic *Speleo Spiel* subscribers). We believe that the $65 slug from ASF fees on top of that is often the nail in the coffin for many potential members. If we can reduce that by ~$15 then we're a big step closer to making membership more affordable for the next generation. Without new blood and young faces clubs die or become stale.

Where to from here?

We need to discuss the pros and cons of this proposal among the member clubs and formulate a system for collating responses and ideas.

I don't claim to have covered all the important issues in this article; there are bound to be others that need consideration.

An online poll (referendum) of sorts could be set up for members to vote; there are a number of free online voting packages available on the internet that could be used.

Alternatively, it may be better to get individual clubs to conduct the poll at club level and then those results to be forwarded to and collated by an ASF representative (similar to the ASF member survey that was conducted a couple of years ago by Ross Anderson *et al.).*

As a first step, I suggest you discuss this issue with your caving mates in your local scene (even at a club level) and provide me with your CONSTRUCTIVE criticism.

Any valid criticism that adds to the debate can then be circulated prior to any aforementioned referenda. Send stuff to **alan.jackson@lmrs.com.au**

Cueva del Milodón
(Mylodon Cave), Ultima Esperanza, Chile

John Dunkley

The Odyssey

"In my grandmother's dining room there was a glass-fronted cabinet and in the cabinet a piece of skin. It was a small piece only, but thick and leathery, with strands of coarse, reddish hair. It was stuck to a card with a rusty pin. On the card was some writing in faded black ink, but I was too young then to read.

'What's that?'

'A piece of brontosaurus ...'

This particular brontosaurus had lived in Patagonia, a country in South America, at the far end of the world. ... Here my grandmother's cousin, Charley Milward the Sailor, found it."

So begins *In Patagonia* by Bruce Chatwin, 97 short chapters evocatively mixing restlessness, nomadism, travel, fable, history and novel.

Although other reviewers labelled it a novel thinly disguised as a travel book, the International Society of Travel Writing in 2006 voted it one of the ten best travel books of the twentieth century on the criterion of narratives dealing with travel and not just travelogues.

Chatwin's odyssey takes him south from Buenos Aires through Patagonia to a cave. The skin was not of a brontosaurus but of an extinct sloth-like creature *Mylodon darwinii*. Possibly the only such literary saga centred around a cave, *In Patagonia* is book-ended with the lure of Mylodon Cave (Cueva del Milodón) in which the remains of the creature were found in 1895.

En route Charley Milward reappears from time to time, we learn of Charles Darwin, Butch Cassidy and the Sundance Kid, a man who made it his life's work to construct a dictionary of the now-extinct Yaghan language of Tierra del Fuego, Welsh and Scottish immigrants to the pampas speaking mainly Spanish, and the gulags of the Pinochet era.

Eventually, Chatwin arrives at the remote and romantically sited Mylodon Cave on Last Hope Sound (Sena Ultima Esperanza) in Chilean Patagonia, in "the uttermost part of the earth" where bandits were (once) made welcome and Charles Darwin formed part of his "survival of the fittest" theory.

That was in 1975.

JOHN DUNKLEY

The Giant Sloth

In February 1895 a certain Herman Eberhard is credited with discovering the cave on his property after rowing up Last Hope Sound and homesteading some grazing country.

A year later the Swedish explorer Dr Otto Nordenskjold visited the cave and sent some remains to the Uppsala Museum. One year later still Dr Francisco Moreno arrived from the La Plata Museum in Buenos Aires. Others came and went but interest then declined for the next 80 years.

The South Patagonian Icecap (Campo del Hielo Sur) is still only 25 km from the cave and of course was closer still in recent times.

The material was thus exceptionally well preserved by freeze-drying, a process occurring in cold, arid conditions preventing decomposition or biological decay and preserving remains such as skin, claws and dung for more than 10,000 years.

Although the fiords of Patagonian Chile have been well-known to mariners for over 400 years, the interior was almost terra incognita to Europeans until quite late in the 19th century.

Based on the apparent freshness of the material and persistent local native legends, some scientists speculated that the creature must still exist, and some raised funds for a search from sources such as the London *Daily Telegraph*, alas returning empty-handed. Others fancifully interpreted a rock-fall in the centre of the cave as evidencing a manmade enclosure for domesticating the mylodons, but there is no real evidence to support this speculation.

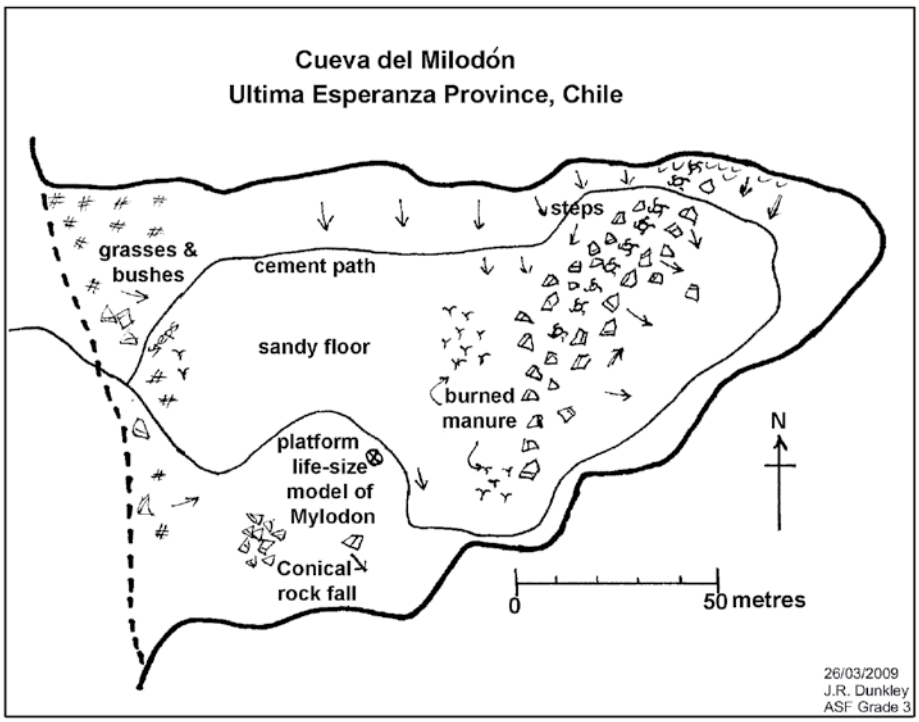
An earliest date for the arrival of humans in the area has been established at 12,300 years BP, at which time a great glacier-fed

lake existed and conditioned human and animal life in the vicinity. Man inhabited rock shelters and had plenty of large mammals to feed on.

Earlier research suggested that the mylodon became extinct about 5,300 years BP but more recent research suggests an earlier date, although the question is not settled. Manure in the cave was dated at 10,385 ± 400 years BP.

Chile was, naturally, not happy that pieces of Mylodon darwinii and other Pleistocene fauna were scattered in museums in Sweden, UK, USA, Argentina and elsewhere. Founded in 1969, the Patagonian Institute has coordinated research and maintained collected material; since 1985, encouraging excavation in other nearby caves which yielded new insights into the Palaeoindian period of human and animal use.

There is an interesting connection between mylodon and the diprotodon. Both were examined and first described by Richard Owen at the British Museum. As with the diprotodon in Australia, debate continues over whether extinction of the mylodon was caused by human or natural forces, and as with the palaeontological remains from Wellington Caves in NSW, ransacking of Mylodon Cave has not terminated research into the fate of this creature.



JOHN DUNKLEY

One thing appears clear: human beings were contemporaneous with mylodon at this remote cave, probably the most distant place from their origins that humans had reached at the time.

The Cave

Chile is not noted for its caves. There are a few lava caves on Villarrica and one or two other volcanoes, some impressive sea caves such as those near Arica in the north, and small unusual caves in rock salt in the Atacama Desert.

JOHN DUNKLEY

Mylodon Cave entrance behind large conglomerate boulders

Cueva del Milodón

JOHN DUNKLEY

View out of cave entrance with life-size Fibreglass model of Mylodon on platform, left centre

Limestone is conspicuously absent except for the island of Madre de Dios (even more remote but explored recently by French expeditions which included our own Al Warild), and rare small deposits such as those near Coyhaique (recently reconnoitred with little success by Al with Julia James).

Mylodon Cave is the only tourist show cave in Chile or indeed in southern South America. Now a national monument and very much on the tourist route, it receives 68,000 visitors a year, of whom 47% are foreigners, mostly from Europe and USA. Formerly a 10 or 12 km walk or taxi ride off the old road, it is now beside a new direct road speeding rental cars, public buses, coach parties and the occasional cyclist (!) alike from Punta Arenas and Puerto Natales to the stunning mountains of Torres del Paine National Park. Entry costs about $8.

There is an excellent visitor centre with bilingual interpretation, far better than any found in NSW show caves, except perhaps for Wellington, and a very good cafe and souvenir shop. Development of the site is a credit to CONAF, the Chilean government department responsible for forests, national parks, reserves and monuments.

Mylodon is considered a rare example of a substantial littoral cave formed by wave action on the shores of a fresh-water lake. During the last glacial era a large glacier flowing from the Patagonian ice-cap filled the valley now containing the cave.

As it retreated a large meltwater lake formed, dammed a short distance downstream. Formation of the cave is attributed to a process of lateral wave action driven by the ever-present prevailing strong winds.

Evidence suggests that for some thousands of years the lake level was approximately at the level of the cave (158 m. a.s.l.), supporting evidence being the existence of 5 other caves within 6 km at almost the same elevation. The present appearance of the cave is similar to that of 9,000 years ago, after the lake disappeared, probably as the result of volcanic or tectonic activity breaching the barrier.

The cave is formed in a loosely cemented, coarse conglomerate with beds of sandstone, capped by more durable sedimentary beds. It is every bit as impressive as early writers described it: 127 m wide at the entrance, 207 m long, 10 m high at the entrance rockfall and up to 20 m inside.

It is self-guided and due to its immense size no artificial lighting is necessary even at the far end of the cave.

A wooden pathway leads 400 m to the entrance where a full-size fibreglass replica of the eponymous 3 m giant sloth dominates a viewing platform. From here a further 400 m of cement path winds through the cave past several interpretation signs.

The caprock apparently transmits sodium salts and/or carbonates or sulphates as there are, in places on the walls speleothems resembling cave coral, and numerous flaky white stalactites aligned along a rift in the ceiling and deflected by wind. There are deposits of burnt manure here and there but those of Mylodon have long since been removed.

The other caves are scattered around the valley. 1 km to the east and accessible by a marked path, the closest, Cueva Media (Middle Cave) is of similar morphology but about 140 m long, 45 m wide and 5 m high at the entrance.

This cave was quarried for palaeontological specimens in the late 19th century but serious archaeological excavation began only in the late 1980s onwards, especially by Hugo G. Nami, yielding evidence of Mylodon, fox, fishtail points and, before humans arrived, jaguar.

An earliest date of 12,300 years before

JOHN DUNKLEY

View from entrance platform; note stalactites deflected by wind and extensive breakdown in right centre

the present has been established, which would put Cueva Media among the earliest human sites in southern South America.

Another kilometre or two east, Cueva Chica (Little Cave) has two parallel passages and some low crawls requiring a light for exploration.

Further across the valley are Cueva de la Ventana and two caves collectively known as Cueva Lago Sofia, all at similar altitudes and all of archaeological significance.

Chatwin suggested that the back wall of Mylodon Cave showed evidence of salt ingestion by animals, presumably mylodon. Lundquist and Varnedoe (2005) felt this was plausible based on analogies with indisputable evidence of enlargement by elephants in the remarkable Kitum Cave in Kenya. However, while dismissing without discussion or alternative explanation the evidence for a littoral genesis of the cave as "very weak" and not fitting the surrounding terrain, they omitted mention of the other nearby caves at the same level and it's not clear whether either actually visited the cave.

Numerous caves in sandstone and similar lithologies in Australia exhibit morphologies similar to Mylodon and the other caves. Selective arenisation of rock faces may be a sufficient explanation.

It's still not easy and certainly not cheap to get to the cave. It's still remote, and the setting is still wild and romantic, backed by snow-capped mountains even in mid-March and the tourist season lasts barely four months.

It's over 3,000 km south of Santiago and you can't drive there without diverting through Argentina. We arrived on a 4-hour flight to Punta Arenas on the Straits of Magellan, checked out the Magellanic penguins, then drove 350 km across the pampas, passing the occasional estancia and gauchos on horseback; visiting the cave en route to the great granite towers of Torres del Paine and to the unusual advancing Perito Moreno Glacier just across the border in Argentina.

The Visitor Centre mentions not a word about Bruce Chatwin, possibly because most of his journey took place in Argentine Patagonia, possibly because he was yet another foreigner, perhaps because at the time Argentina and Chile were engaged in a mild austral cold war. But it's hard to beat his account of arriving at the cave in 1975:

"I walked the four miles from Puerto Consuelo to the Cave. It was raining but the sun dipped under the clouds and sparkled on the bushes. The cave mouth gaped, four hundred feet wide, into a cliff of grey conglomerate. Hunks had tumbled to the floor and were piled about the entrance.

"The inside was dry as the desert. The ceiling was shaggy with white stalactites and the sides glittered with salt encrustation. Animal tongues had licked the back wall smooth. The straight wall of rocks dividing the cave had fallen from a fissure in the roof. I tried to picture the cave with sloths in it, but I could not erase the fanged monster I associate with the blacked-out bedroom in wartime England. ...

"And then, poking out of the section, I saw some strands of the coarse reddish hair that I knew so well. I eased them out, slid them into an envelope and sat down, immensely pleased. I had accomplished the object of this ridiculous journey."

References

Chatwin, B.M. (1977): *In Patagonia.* Cape, London

Lundquist, C.A. & Varnedoe, W.W. (2005): 'Salt Ingestion Caves.' *Proc.14th International Congress of Speleology*, Kalamos, Greece: 234-237

Crystal Cave Restoration 2009

Ian Collette
WASG

Act of Vandalism

In 2006 a break-in and major vandalism incident occurred at Crystal Cave in Yanchep National Park, Western Australia. Numerous pieces of decoration were smashed and some taken home, where somebody noticed them on a kitchen table and informed the police. This led to three people being charged in relation to offences committed.

Two or more years of legal wrangling followed, in the course of which the caving clubs were asked to put a monetary value on the damage.

Two of the offenders were finally convicted. The main culprit was placed under intensive supervision for two years and received a 200-hour community work order.

The other was convicted of receiving stolen goods and being an accessory to the crime and was fined a total of $1500. (So much for us stating that the speleothems were priceless.)

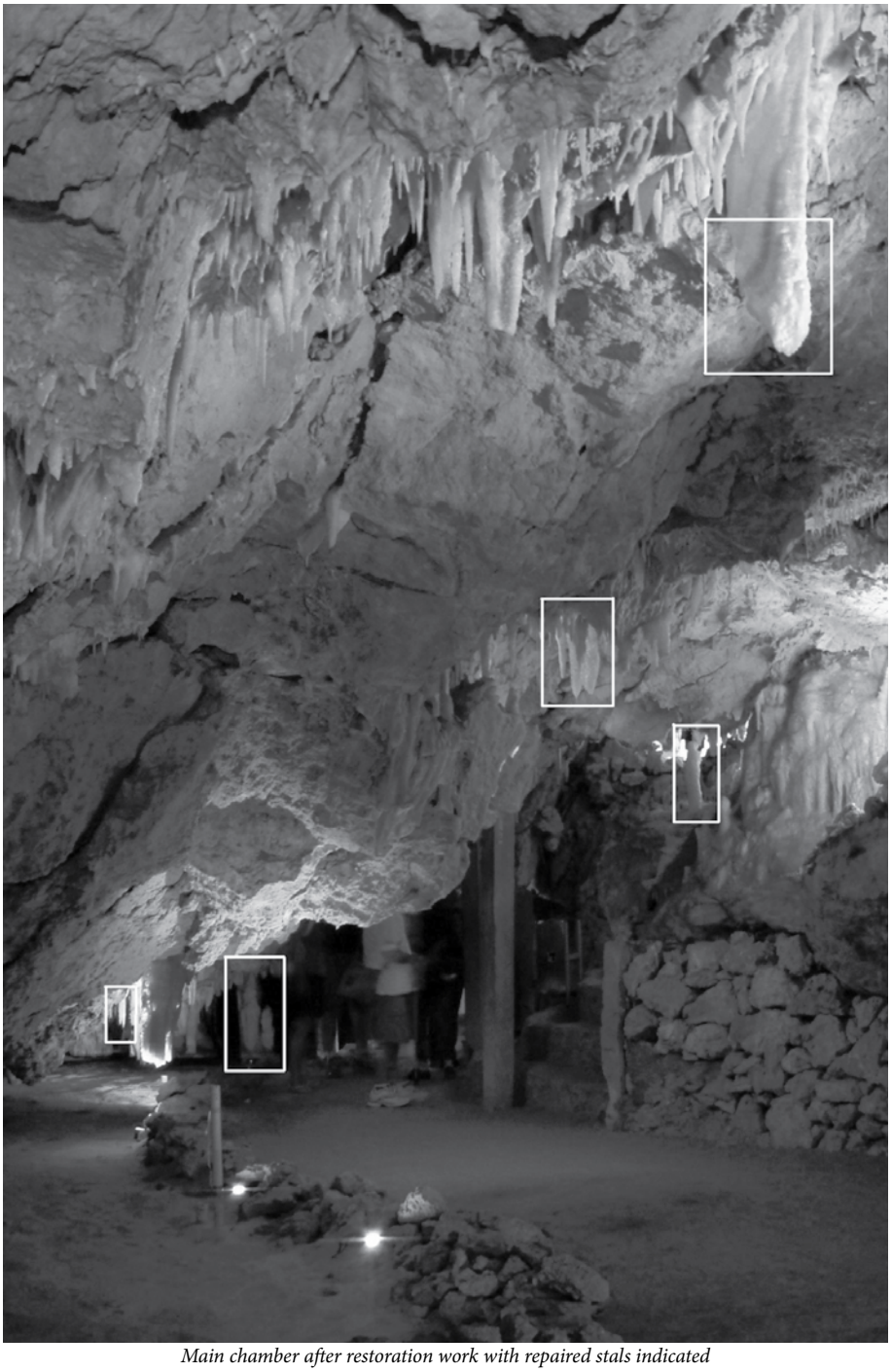
To date, as far as I know, the third offender is still to go through the court system.

As the broken decorations lay strewn across one of the main pathways in the cave, it was decided to remove them to a safer place until something could be done with them.

In preparation for this, Norm Poulter (SRGWA), with assistance from members of other clubs, took "scene of crime" photos and drew up a mud-map, to help identify where the pieces came from.

They then concentrated their efforts on the biggest piece, a stalactite weighing about 200 kg and measuring approximately 900 mm in length x 350 mm diameter. This had hung from a low roof and was only 100 mm above the sand floor of a now dry streambed.

A similar piece next to it is called the Elephant's Foot, because in good times when there was water in the stream the bottom



IAN COLLETTE

Main chamber after restoration work with repaired stals indicated

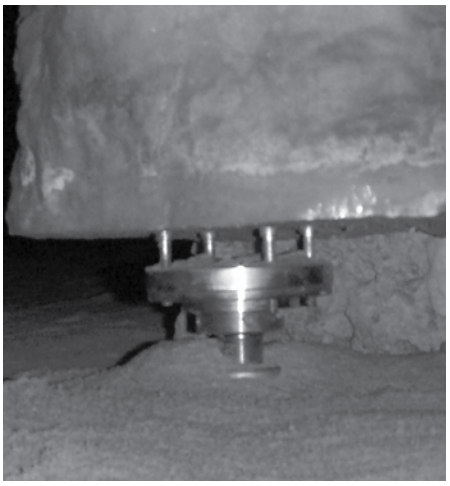
had been dissolved flat and had spread out slightly to resemble an elephant's foot.

It was decided to use a stainless steel jack to put it back into place until a way was found to reattach it at a later date.

It was a huge task to move this very weighty and fragile stalactite, as the conditions were cramped and there was no headroom to work with. Also, being a sand floor, a strong footing had to be made to support the jack. The final result is that you can only just see the top of the jack.

IAN COLLETTE

Big stal 'front' view



IAN COLLETTE

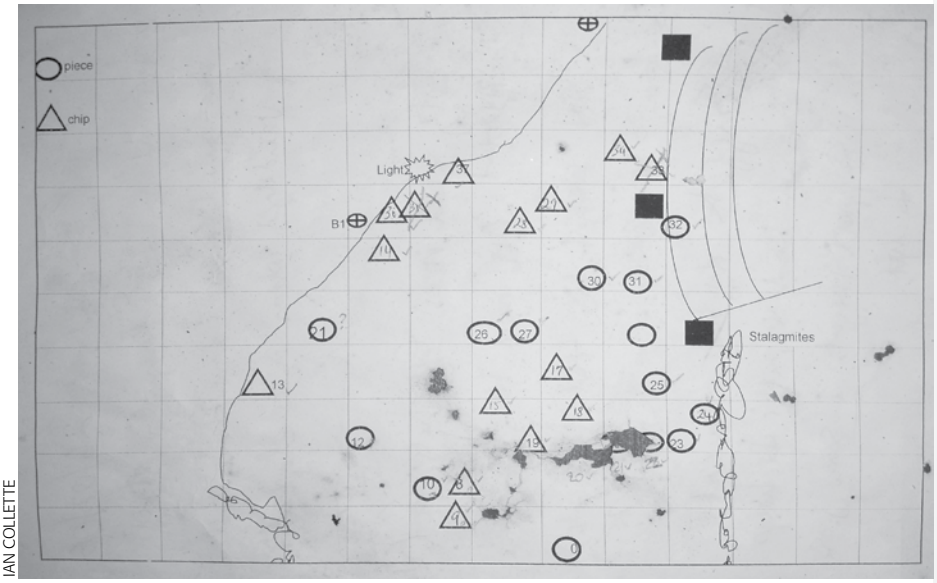
Big stal jack

Norm left for Tasmania and I offered my services and those of anybody else I could get my hands on, to complete the task. Armed with the NSS handbook *Cave Conservation and Restoration,* I was handed the many bits, chips and large pieces in numbered envelopes, and some still in their evidence bags from the court case.

With these and the photos and mud-map, I departed to my shed to see if I could unravel the puzzle.

First off, I laid all the pieces out on the floor according to the mud-map.

The large piece of shawl that had hung 4 m above the walkway had been smashed into eight pieces. There were also about another 10 stalactites of various sizes and one



IAN COLLETTE

Mud-map of damaged stals

IAN COLLETTE

Evidence bags

stalagmite. Most of these had to be glued or pinned together. To make matters worse, you could see fractures in some of the large pieces.

Greg Thomas acquired a Clipper Diamond Tile Drilling Kit ($60) that came with 6 mm, 8 mm, 10 mm, and 12 mm coring bits.

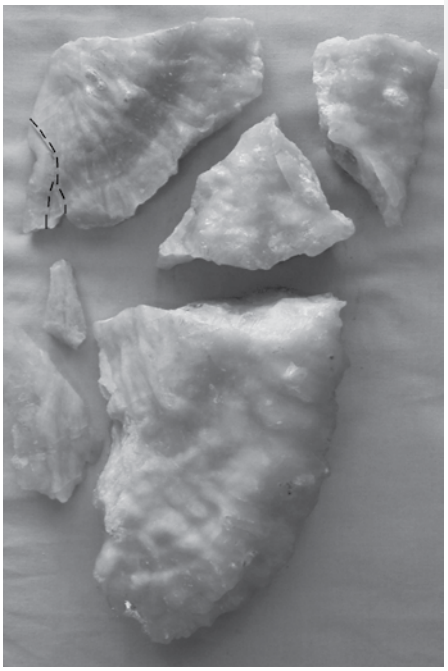
A masonry or steel bit, with or without using the hammer action on the drill, would have been likely to shatter the shawl.

The coring bit uses more of a grinding than a chipping action, making it far gentler on the formations.

I found I had to be careful at the start, but after I got going I just let the drill do the work.

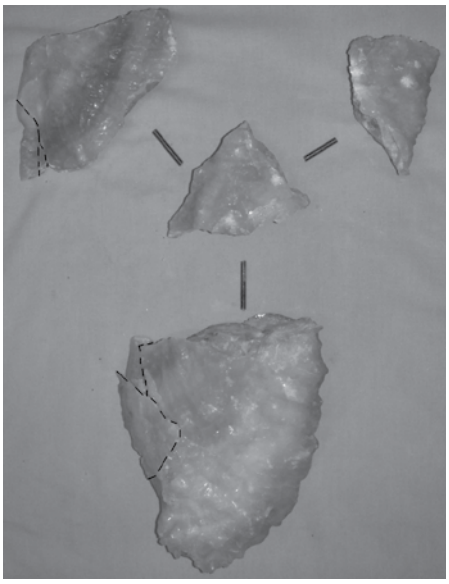
In the workshop, starting with the shawl, I did a dry run by fitting all the pieces together first. This gave me my gluing sequence. All the small pieces (and some of the other stals that were not hanging over the heads of the public) were glued with a cyanoacrylate adhesive (super glue) made by Satellite City in America and called Hot Stuff Special T. This left me with four relatively large pieces to pin together.

To locate where to drill, I cut off the end of a felt tip pen and sandwiched it between the two bits to be pinned. This left two matching ink spots. It is also a good idea to add pencil lines across the join on the outside. This will help to align the pieces come glue time and can also indicate the angle at



IAN COLLETTE

Before gluing the shawl

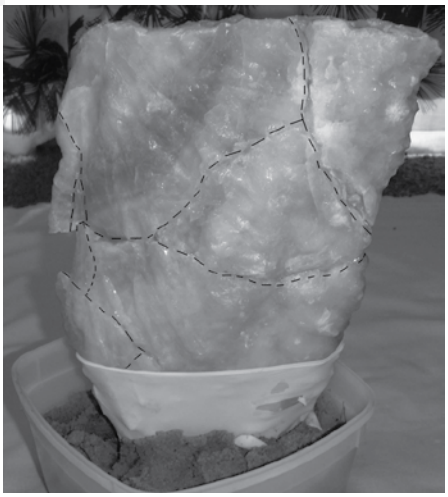


IAN COLLETTE

Pinning

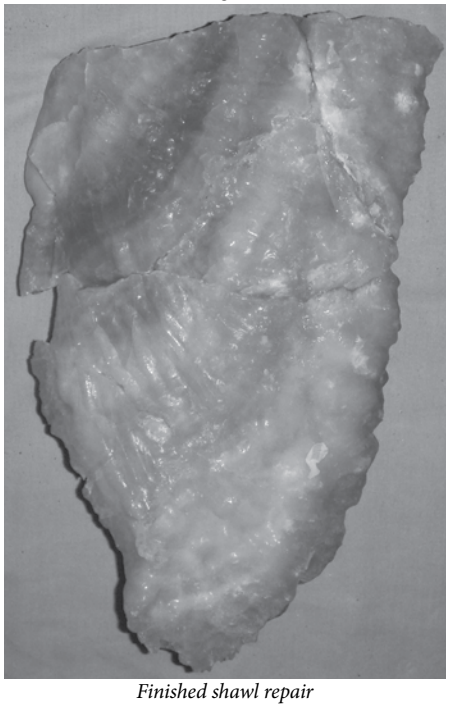
IAN COLLETTE

Drilling middle piece



IAN COLLETTE

Setting time



IAN COLLETTE

Finished shawl repair

which to drill. I used closed cell foam and a vice to hold the piece while drilling, but anybody could hold it in their hands, as we did during repair works in the cave.

The size of the piece will determine the coring bit to use. I used 5 mm 316 grade stainless steel threaded rod to pin the shawl pieces together, and 6 mm rod to pin the shawl back to its other part on the cave roof. When in the cave, we used the 6 mm corer on the shawl hanging from the roof and an 8 mm corer on the piece we were going to attach. This allowed some movement to play with in case we had got the drilling angle wrong. It would have been possible to go up to the 10 mm corer without worrying as the epoxy resin takes up the gap.

Because the corers are designed for drilling tiles, it is only possible to drill down 5 mm at a time before having to use a wire or long thin screwdriver to push out the core from the drill bit.

I used a spray bottle of distilled water to cool the bit and lessen the friction and also to wash out the hole. I drilled down 15 mm to 20 mm on each side, making sure I had not left part of the core inside.

If this happens, a small screwdriver can be used to snap off the core inside the hole. In the workshop, a hair dryer was used along with the distilled water to clean and dry the holes, but cotton buds and paper towels could be used in a cave.

For the attaching we used Techniglue CA by ATL Composites Pty Ltd, Queensland. This is a two-part, solvent-free, waterproof structural epoxy resin. It will bond to wood, metal and, importantly, stone and marble and dries to a neutral colour.

When mixed, the epoxy has the consistency of Vaseline, which makes it very easy to use when you are working overhead. We cut the threaded rod shorter than the holes, half-filled the holes with epoxy and spread more over the faces. We left a small border around the edge where we applied dabs of Hot Stuff — being careful not to mix it with the epoxy — to hold the decoration in place for 12 hours while the epoxy was setting. (Both these glue products can be purchased from any good woodworking shop.)

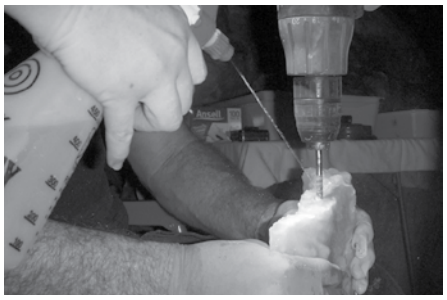
In the cave, we used two step ladders and a scaff plank to create a working platform 2 m off the ground.

As the shawl was an unusual shape, we placed it in an ice cream container and used old stockings as sandbags to brace it. This was put atop an Acrow prop lent to us by my SES unit (Northshore) and was gingerly screwed up into place. Only light pressure is needed to create a bond.

The large stalactites in public areas were also attached with pins. As they were conical

IAN COLLETTE

Greg and Rob drilling shawl in roof



IAN COLLETTE

Drilling lower part of shawl

IAN COLLETTE COLLECTION

Ian and Rob Foulds drying shawl after washing

IAN COLLETTE COLLECTION

Ian, Steve and Ben mixing resin

IAN COLLETTE

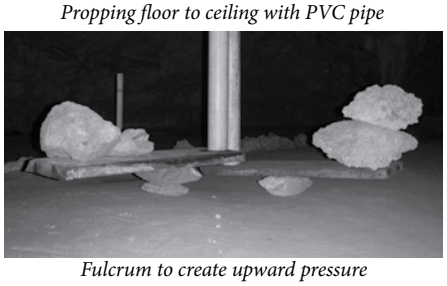
Acrow prop under shawl packed in ice cream container brace

IAN COLLETTE

Propping pinned, conical stals with PVC pipe

IAN COLLETTE

Propping floor to ceiling with PVC pipe



IAN COLLETTE

Fulcrum to create upward pressure

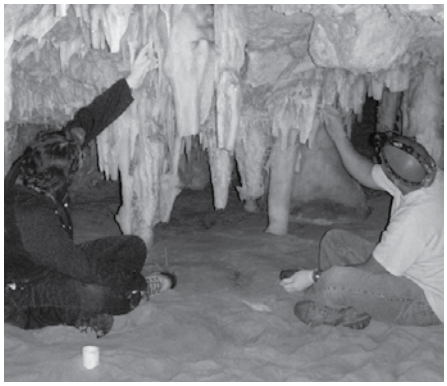
in shape, we wrapped packing around them and inserted them in PVC pipe cut to the required length. By using a small plank and rocks as a fulcrum we created the upward pressure to hold these in place.

There are various things to consider in undertaking such a job.

Take time to draw up a good mud-map and take lots of pictures from numerous angles before you do any work. Before gluing to the wall, floor or roof, see if those small bits of stal left over fit into any of the gaps.

You might have to glue the chip to the wall, floor or roof first before reattaching the stal, or vice versa. Remove all pencil or other marks before gluing.

We spent a few hours trying to locate "homes" for one piece the size of your hand and two small stals, eventually giving up to try another time with fresh eyes. Mind you, these pieces could have been found 3 to 4 metres away from where they were originally broken.



IAN COLLETTE

Mel and Rob trying to relocate stals

I am grateful to Greg Thomas for the idea of using the Clipper Tile Drilling Kit, and I thank Greg, his son Ben Thomas, Rob MacCracken, Melanie Roberts, Steve Miller and Rob Foulds for their help and all their patience.

There was a total of six trips made to the cave to complete our work and this did not include any of the work done by Norm and his team.

Nevertheless, we found the experience instructive and very worthwhile and we hope that what we learned may be useful to others.

IAN COLLETTE

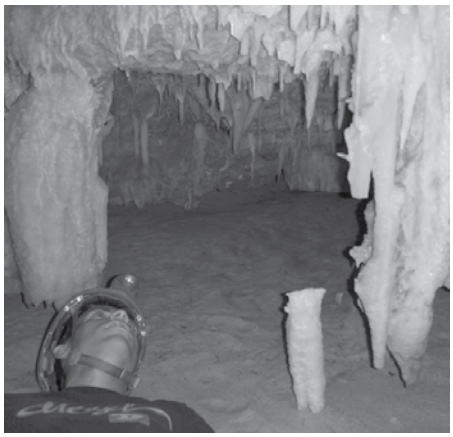
Tools used

IAN COLLETTE

Ben with stalagmite before

IAN COLLETTE

Stalagmite after



IAN COLLETTE

Steve with stalactite before

IAN COLLETTE

Stalactite after

Cave SAR Management Forum

Lower Moutere, NZ, August 7-9th, 2009

Richard (Harry) Harris
CDAA, CEGSA

NEW ZEALAND contains the deepest and perhaps the most challenging dry caves in the southern hemisphere. Its small but committed caving community has a well-organised and well-practised Cave Search and Rescue (Cave SAR) capability. This two-day Cave SAR Management Forum provided an excellent opportunity for myself and Joe Sydney (Australian Cave Rescue Commission and International Union of Speleology—Cave Rescue Commission Oceania Coordinator for Cave Rescue) to exchange ideas with the cavers in New Zealand.

JOE SYDNEY COLLECTION

Conference centre with Cave SARex participants. Australian representatives: Richard 'Harry' Harris of SA (bottom left) and Joe Sydney (sitting behind Harry).

Cave SAR Management Forum

The focus of the weekend, was not so much the nuts and bolts (pardon the pun) of cave rescue, but the management infrastructure and behind the scenes workings of cave SAR in New Zealand. As a newcomer to cave SAR myself, and with cave SAR organisations in some areas of Australia in their infancy, I found the forum to be very relevant and useful. In particular, it was of great interest to see how the New Zealanders manage the relationship between official rescue authorities (e.g. the police) and volunteers (the cavers).

Interesting talks were heard from the local police SAR coordinator, LandSAR representatives (LandSAR could be likened to some aspects of the SES in Australia), Alpine Cliff Rescue, SARINZ (a teaching body who provides free SAR training to any New Zealand resident including technical rope and rigging courses), the New Zealand Speleological Society and a media trainer.

Different regions (including the Aussies) gave short presentations on their manpower, training levels, equipment stores and other capabilities giving a clear picture of the state of Cave SAR preparedness in New Zealand.

During the course of the weekend we completed two paper Cave SAR exercises during which we ran through all the requirements for the rescues, including first response teams, Incident Control Posts, forward staging areas, communications, manpower and other logistics.

We learnt how to prioritise our goals and best use our sometimes limited resources. As most of those in the audience had been involved in two or three actual deep cave rescues and multiple less challenging rescues, there was a huge amount to be learned from their experiences. Deep cave rescue is a major undertaking!

Key Learnings

For me, the most important observation was the well-established relationship between the volunteer cave rescuers, the police (who, like in Australia, maintain control of all incidents) and other SAR services.

The police in New Zealand now accept and support the use of experienced cavers for the underground component of Cave SAR incidents.

In the very early days of cave rescue in New Zealand, it was quickly established that other services like mine rescue or the fire department did not have the necessary skill set to perform cave rescue. Over many years an excellent relationship has developed between the police and cavers, and they now cooperate on all Cave SAR callouts.

The police indemnify the cavers, and LandSAR offers (limited) life insurance to all volunteers who work under the Police department's jurisdiction for the period of the rescue.

Furthermore, volunteer rescuers are compensated for travel and other minor expenses.

I wonder if the no-fault ACC insurance system in New Zealand makes some of this a lot easier, as this seems to be a potential sticking point in Australia.

Another worthwhile concept is that of cave-specific 'preplans'. If a cave is felt to be

high risk (e.g. technically difficult, flood prone, frequently visited especially by inexperienced or non-cavers) then a specific SAR management plan can be drawn up in anticipation of an incident at that site.

Details include important local contacts, phone numbers, helicopter landing sites, communications issues, rigging info for pitches etc. This can significantly streamline rescue operations in the event of a SAR callout.

An Incident Management System (IMS) is central to the organisation of any search or rescue. A version of this system is used in many countries including Australia. In New Zealand, it is called CIMS—the Co-ordinated Incident Management System.

When the police receive a callout, they appoint an Incident Controller. This person will notify the region's Cave Adviser (a local caver who knows the caves and is a SAR enthusiast!)

Together, the police and Cave Adviser will facilitate the rescue, appointing other personnel as required. These might include an Operations Manager, Logistics Manager, Intelligence and Planning Manager. The more prolonged and complex the rescue becomes, the bigger the management structure will become.

Various teams will be tasked to enter the cave such as a First Response/Medical team, Communications Team (laying wire for the Michie phones), Supply Teams and Rigging Teams.

Whilst a small rescue may require only the First Response Team, and be completed in six hours, a major deep cave rescue with a stretcher-ridden patient may use 100 personnel and take several days. The Cave Adviser may decide to mobilise cavers from all over the country for such rescues, and so up-to-date call out lists of cavers (and their skill sets) are kept by the regional Cave Advisers.

In a major disaster it is possible that Australian cavers would also be called in, and there is ongoing interest by the New Zealanders in streamlining the process by which this could happen.

One deficiency in New Zealand Cave SAR is in the area of sump and cave diving rescue. There are literally less than half a dozen cave divers in the New Zealand caving ranks and most of them dive only intermittently. I had some early discussions with the Kiwis about the possibility of Australian cave divers being called upon in an emergency. This dialogue will continue.

JOE SYDNEY COLLECTION

Time for fun! With a given scenario, resources and time limit, rescuers co-ordinate their exercise. The details were fed into an Excel spreadsheet which regenerated the time it took to undertake the rescue with some interesting results!

My thoughts after the conference:

With the exception of the NSW CRS, I suspect Australia is generally in a poor state of preparedness for cave rescue compared with New Zealand.

Cave accidents requiring rescue are a rare event in Australia, hence it is difficult to motivate cavers and authorities to prepare for such events. However, when an event occurs, this decreases the chances of a good outcome.

Excellent caving experience exists within the current Australian club structure. What is lacking are the relationships with Police and SES that our New Zealand counterparts enjoy. A Cave SAR Management forum such as this would be an excellent way to further develop these relationships. Local and national Cave SAREXs would highlight our strengths and weaknesses. Such exercises would encourage police to call out cavers earlier during Cave SAR incidents.

Because of the small numbers of incidents and few 'cave SAR' cavers in Australia, perhaps each region need only maintain a small, motivated Cave SAR unit; but be quick to call in other regional units for more major incidents. We need to maintain our list of 'SAR Cavers' and communicate with each other more often/effectively. Areas like Tasmania, with deeper caves, will need to maintain higher levels of operational readiness, but other regions should also encourage a few cavers to be 'deep' cave trained and practised.

Skills relevant to Cave SAR seem easy to come by in New Zealand. SARINew Zealand will train individuals in all aspects of general SAR and will also offer technical rope training with certification at no charge. Do we have anything comparable for volunteers? Preplanning could be done for some Australian caves considered high risk. Paper exercises could be done (even via internet or teleconference?) for different caves. It would be interesting to plan a hypothetical rescue for a remote Nullarbor or Kimberley cave! How do we get cavers to these areas in a hurry?

I wish to continue to organise a system for a national cave sump rescue team and consider the possibility that they could be called out by places like New Zealand. A sump rescue SAREX would be interesting.

Joe Sydney would like to see Michie phones being held in all clubs around the country—a very reasonable and achievable goal.

Consider a regional SAREX with Australian and New Zealand cavers, as the Kiwis have a great deal of experience and knowledge to offer. In Tasmania?

I would like to thank the CDAA for assisting with funding to help me attend this forum and the very generous New Zealand hosts for their hospitality.

ASF – Australian Cave Rescue Commission

Ross Anderson
Chair ACRC

AS PART of an initiative to raise awareness and hopefully participation in the ASF Australian Cave Rescue Commission activities, I have decided to write a series of articles detailing the direction, activities and resources of the ACRC that ASF members can tap into.

Commission Objectives

The commission was formed in 2000 and named the National Cave Rescue Commission ; this was later changed to the Australian Cave Rescue Commission and is charged with the following objectives:

- Facilitate the provision of cave rescue training to cavers;
- Facilitate the exchange of information and training related to cave rescue;
- Facilitate the provision of skills and equipment for cave rescues Australia-wide;
- Provide a national communications framework for cave rescue organisations;
- Encourage an ethos of minimal impact for cave rescue training and rescues;
- Facilitate the establishment of cave rescue organisations in states where such organisations do not exist;
- Organise national cave rescue workshops at the Biennial ASF Conferences;
- Spread the self-rescue ethos amongst other caving groups;
- Enhance the first aid skills of cavers and other caving groups;
- Establish relations with overseas cave rescue organisations;
- In nearby countries, where cave rescue organisations don't exist, establish relations with relevant organisations to enable the delivery of assistance; and
- Education of government bodies and management authorities about cave rescue.

As you can see by the objectives, the ACRC aims to assist in the training and provision of a communications network for cavers in Australia. It is not charged with becoming a cave rescue organisation.

So what are we doing?

Training – Horizontal Cave Rescue

In 2007 WA cavers implemented the Cave Rescue Orientation Program (CROP) that introduces cavers to basic concepts and techniques in horizontal cave rescue. The CROP is not burdened with difficult concepts or extreme practical exercises designed for Superman.

The program is designed to be presented in approximately 14 hours by experienced cavers, who have broad previous experience and preferably cave rescue training experience.

The CROP is a flexible program that is based on the American NSS Orientation to Cave Rescue (OCR). It is a set of 17 study modules (text for a manual plus Powerpoint presentations) that can be selected according to the needs of the local caving area. For instance, Tasmanian cavers wouldn't need the hyperthermia module but would want a hypothermia module.

The CROP program can be presented as several presentations at club meetings, with half or full day practical sessions or as a single full weekend program — essentially, it is up to the attending cavers and the presenters to determine how they want to do it.

- Support material for the CROP includes:
- Promotional flyers
- Generic reminder emails for attendees
- Attendee details lists
- Organiser and attendee programs
- Waiver and liability forms
- Equipment lists
- Expenses spreadsheet
- Powerpoint presentations and of course
- A manual for attendees.

Wow, that's quite a lot once it's listed! And all FREE!

To use the CROP material, email me or your state representative and ask for a copy.

What does the ACRC ask of you? Upgrades! If you write a new module, email it to the ACRC so everyone else can use it if they want to.

Training – Single Rope Techniques

At the ASF council meeting in January 2009 the ACRC meeting endorsed the use of Al Warild's book *Vertical* and Dr Dave Merchant's book *Life on a Line* (LOAL) as principle training resources for SRT and vertical rescue.

Since this decision, a group of 12 WA cavers have attended two of a planned four training days that introduce SRT techniques to novice vertical cavers.

The four-day training program is simply a set of study/training guide notes that reference sections of *Vertical* and *LOAL* in a structured manner, that enables novice SRT cavers to become familiar with: equipment characteristics and care, knots, rigging, rope protection, ascending and descending techniques and basic rescues.

For clubs to implement the SRT training program email me for a copy of the notes and obtain legitimate copies of *Vertical* and

LOAL (if you don't buy them, don't expect the authors to update them!)

Training — Vertical Rescue training

At the recent International Congress of Speleology in Texas, Australia and Canada obtained permission from the NSS NCRC to utilise their training materials for cave rescue training in in their respective countries. In 2010, I will be asking State representatives and volunteers (maybe you!) to review the materials and offer suggestions on how we can implement training. This will result in Australian cavers having access to three stages of training; horizontal rescue, roping skills and vertical rescue.

Sharing of information

Around the time that this *Caves Australia* reaches your letterbox we should be seeing an additional bunch of information landing on the ASF website, go have a look and see if any of the forms are useful to you. The addition of information related to incident management and rescue will be sporadic and ongoing.

Communications

So far we have developed a list of individuals who would like to represent their state on a national communications list, or are willing to assist in a rescue if called upon by the local statutory authority.

The current state representatives list is as follows:

NSW: Joe Sydney (Eastern states co-ordinator), Caroline Forest
ACT: Ian McCulloch, Brendan McCullough
VIC: Ian Thomas
TAS: Damian Bidgood
SA: Richard Harris
WA: Tracey Robins, Ross Anderson (Chair), Ian Collette (Vice-chair)
"Top End" (WA/NT): John Cugley
QLD: Unrepresented.

If you would like to be on the list, email me.

Additionally, Joe Sydney has established two email lists for the ACRC.

List 1: acrc-executive@yahoogroups.com
List 2: acrc-members@yahoogroups.com

The objective is to streamline communications for the ACRC, so if you are interested please email Joe Sydney to join

jsydney@choice.com.au — or
jrsydney@bigpond.net.au

Rescue communications

Joe Sydney, Ian Collette and Steve West have been working on the Michie phones for underground communications and have made some good progress with them. Western Australia now has four functional units and Steve is in the process of writing up new and improved instructions so everybody can make their own.

Well, that pushes me well over the allowance for space that Brooke gave me so thanks for reading this and please email me or the ACRC executive on the following:

acrc-executive@yahoogroups.com

Timor Karst Appeal — a reminder

Everyone should have received the brochure on this campaign in *Caves Australia* 178.

Jodie Rutledge and NHVSS have been conducting the expert witnesses around the Timor Karst area in preparation for the legal challenge to the grant of a mining license.

The expenses of this case are mounting up. It started on November 30th. This is a reminder that we need your donation. Donations to the ASF Gift Fund are tax deductible.

There was a brochure in the last *Caves Australia* or one can be downloaded from www.caves.org.au . Even if you can't donate until after the hearing, we still will need to pay the bills.

Please donate now if you have not done so already.

GARRY K SMITH

Clean-Up in the Pool Room
Weelawadgi Cave, Western Australia

Paul Hosie
CEGSA

The Team

Dr Roger Howlett (coming out of caving retirement! - WASG)
Kym Hosie (Ace photographer—CEGSA),
Peter Rattigan (becoming a seasoned professional—SRGWA),
John Cugley (visiting from the Kimberley —SRGWA) and
Yours truly (continues to be inspired by Jeff Butt—CEGSA).

Background

E24 Weelawadgi* Cave is undoubtedly the Eneabba karst region's, and one of Western Australia's, grandest caves – over 2,700 m of heavily decorated phreatic and large breakdown passage.

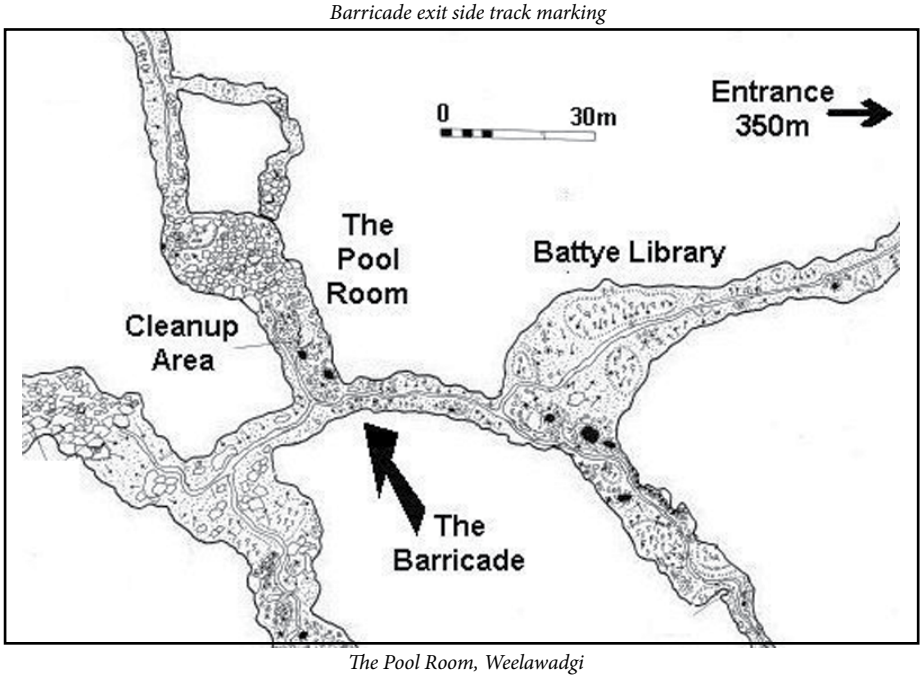
A stunning place to visit and it's impossible to appreciate the whole cave on just one visit.

We have visited the cave about four times now and still haven't seen it all. Imagine our disappointment when we visited the cave in early August to find wanton damage to one of the caves' most significant calcite formation areas—the Pool Room, a little over 500 m from the cave's entrance and over 350 m from the gate.

***Nomenclature Blues:**
Weelawadgi or Jankaras Cave is often misspelt 'Weelawadji' by cavers. The earliest official records of the Geological Survey of Western Australia (Campbell, 1909—Bull. Geol. Surv. *#38:24-25) and all current and past versions of the topographical maps for the area unambiguously use the original and correct spelling—Weelawadgi Cave.*

PAUL HOSIE

Barricade exit side track marking



BARRY LOVEDAY

The Pool Room, Weelawadgi

Damage Done

On the exit side of the Barricade (see accompanying map extract and photo), the track is clearly marked and follows the left hand wall up into the Pool Room. The reason for this is that the entire floor area on the right hand side of the path consists of dry white calcite flowstone, dry gour pools and stalagmites.

As unbelievable as it was, it was clear that some people had walked all over this clean white, fragile formation wearing boots full of black soil, much of it being deposited on the formation.

Visually tracing the prints back to their origin, it was clear that the dirt had been trod from the entrance side of the Barricade.

The individuals responsible had gone off the path to go through the Barricade on the right-hand side of the passage and then around the dry gour pools and up over the flowstones. Some of the black soil deposited was in the shape of the boot tread from which it had fallen.

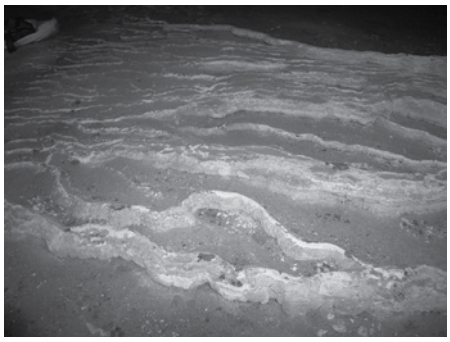
KYM HOSIE

Mud clod from boot on gour rim BEFORE

KYM HOSIE

Fine calcite flowstone and rimpool Area 1 BEFORE

Although the Barricade track marking may have contributed to this problem, it is inconceivable that any caver permitted to be in the cave could have done this. Some of the boot prints were actually on the fragile rims of the gour pools which had been crushed and cracked. The individuals concerned had ignored the entire track marking just a few metres away and chose instead to walk up the pure white flowstone. The 'before' photos accompanying this article should show the reader what we're talking about. I have to say my heart sank when I first saw this, particularly as this is one of the most tightly controlled access caves in WA!



KYM HOSIE

North side large gours BEFORE

KYM HOSIE

North side large gours AFTER

A Punning Clan

Upon our recommendation to the land manager, the padlock on the cave gate was immediately replaced in order to minimise the possibility of any further illegal entry and possible damage.

A small tripartite clean-up team was put together, comprising Roger Howlett, Peter Rattigan, Kym Hosie and Paul Hosie. The poor and degraded track marking was also targeted for improvement together with the Pool Room clean-up.

A trip plan was developed, a work permit was granted and we set off in mid-September to try our best to right a pretty bad wrong. The permit also allowed for a second day's entry to the cave in case it was needed – it was!

The group split into two work parties, Peter Rattigan and Dr Howlett attended to the track marking through the Barricade whilst Paul & Kym commenced work on removing soil from the flowstones and rim-pools.

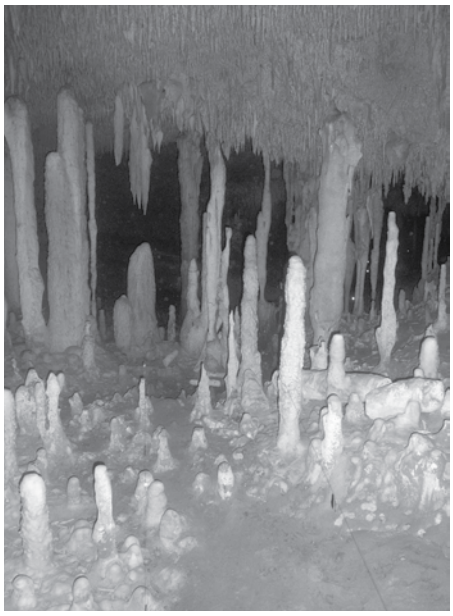
Track Marking

The track marking was implemented by way of PVC poles at the entrance and exit sides of the Barricade with two lengths of 100 pound nylon line connecting them together.

The two lines are separated by no more than 50-70 cm all the way through the Barricade, at waist height with tabs and red reflectors spaced at 1m intervals between the supporting columns and PVC poles.

PAUL HOSIE

Barricade approach entry side track marking



PAUL HOSIE

Barricade through side track marking

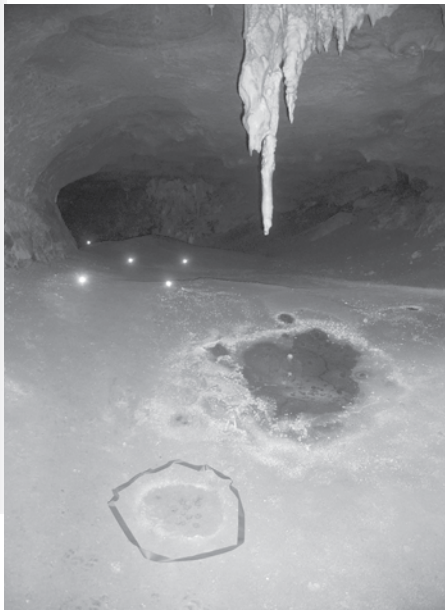
White and yellow reflectors have been placed at the entry and exit sides of the Barricade only, as the heavy nylon line physically prevents wandering off the track whilst in the Barricade formations.

The remaining track marking reflectors were used in the Pool Room and back through to the Battye Library where we ran out, so the remaining yellow reflectors were placed on the Western side of the track through the Battye Library.

Several red metal tabs that had been placed on the floor in the area of the Barricade and Pool Room were found to be blistering and corroding. They were removed and replaced where practicable.

More can be done in future to remove the rest of these tabs and replace them with

non-corroding plastic tabs and reflectors. Red flagging tape was laid on the ground to encircle newly forming drip hole formations — one between the Battye Library and the Barricade, the other on the entrance side of the Battye Library.



PAUL HOSIE

Drip hole and track marking 1

PAUL HOSIE

Drip hole and track marking 2

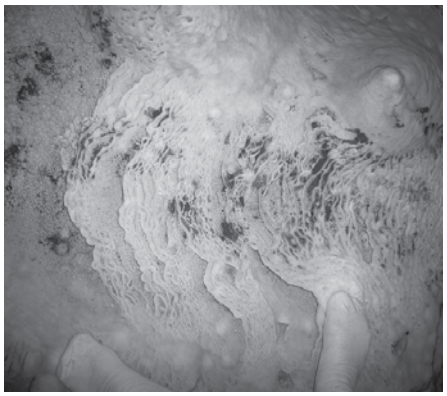
Formation Cleaning

A Dustbuster portable vacuum cleaner was chosen as the weapon of choice to lift the mud off the flowstone. This was found to be a highly commendable tool, particularly when used with the narrow nozzle and brush attachments.

Of course, this statement is only true until the batteries run down! We found that the non-replaceable batteries ran down after only 15 minutes and half of the way through the initial task—doh!

Another problem encountered was that much of the soil material was damp and physically stuck to the formation and rimpool edges which made it very difficult to lift cleanly.

The dampness also meant that the white calcite formation had been stained brown where the soil had temporarily resided. Washing and scrubbing with a soft brush was effective in removing soil particles and black marks, but stain removal may require different tools and techniques—left for a more advanced restoration party than ours!



KYM HOSIE

Fine calcite flowstone and rimpool BEFORE

KYM HOSIE

Fine calcite flowstone and rimpool Area 2 BEFORE

The damage to the thin calcite rims of the gour pools was probably the most sickening result of the action of the (ir)responsible individuals.

Most of the rims have been crushed and are probably irreparable.

Great care was taken to put body weight only on solid flowstone areas from which the gours could be reached.

We exited the cave mid-afternoon of the first day with the aim of replenishing supplies and modifying the vacuum for a return trip on Sunday morning to finish the cleaning work.

PAUL HOSIE

Fine calcite flowstone and rimpool Area 1 AFTER

PAUL HOSIE

Fine calcite flowstone and rimpool Area 2 AFTER

Finishing Off

That night, in our good friend Ray's magic workshop, the vacuum was disassembled and rewired so it could be powered by a high capacity 12V sealed lead acid battery. It was a bit like Ghostbusters, but without the beam-crossing problems.

The cave was re-entered on Sunday morning with the modified vacuum and battery pack, as well as extra bottles of water for washing the formations.

The vacuum cleaner ran for over an hour in its new supercharged configuration and we removed over two cupfuls of black dirt which were emptied into a garbage bag and removed from the cave.

The soft brush vacuum attachment both dislodged and removed the offending soil and we found it to be excellent for this type of work. It would be better if it wasn't required in the first place, of course! The formation was brush-washed where soil had left stains and then brushed clean upon withdrawal.

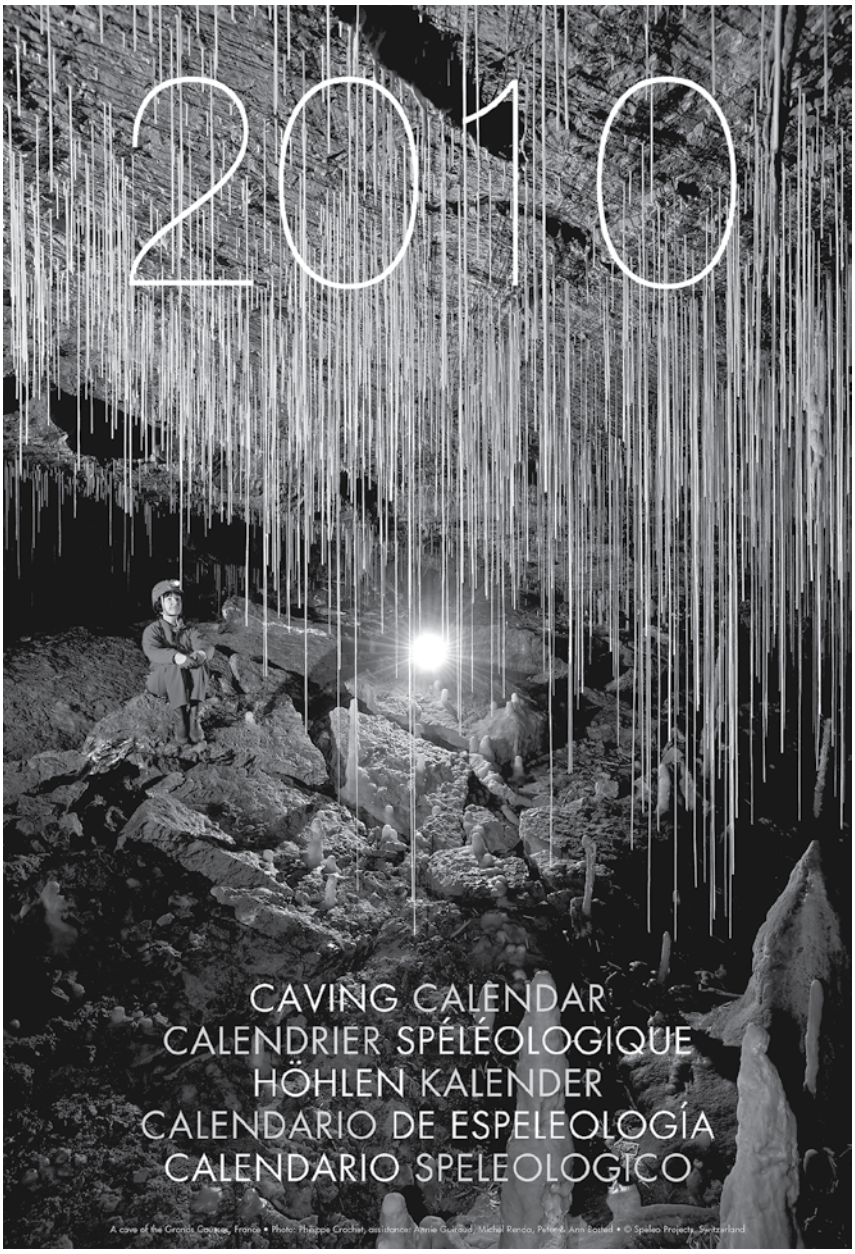
The Future

There is more work to be done to remove the stains from the pure white calcite and some attempt at repairing the snapped rimpool edges could be made. These tasks would

require more advanced skills than a lowly cave diver like me can rummage up, so has been left with those better qualified in WA caving circles. As they say: 'All conservation and no exploring makes Paul a very dull lad (and boy, do we have some exploring and mapping to do in this area!)

The overall result isn't perfect but is proffered as an improvement to the state in which we found it. Replacement of the lock on the gate is hoped to reduce the likelihood of illegal cave entry and the track marking seems to work a lot better now too. Some of the 'after' photos can be compared with those taken 'before' to make your own judgement (isn't Photoshop amazing? – just kidding!) We believe we made a good effort and improved the aesthetic situation, if nothing else. Our exit cry of 'Mission accomplished' would have made George W Bush very jealous, I reckon.

2010 Speleo Projects Calendar



The spectacular Speleo Projects calendars for 2010 are now available without having to deal with international money transfers. Make a tax-deductible tax donation of $35 or more to the NSW Cave Rescue Squad and receive a gift calendar for your enjoyment.

Twelve stunning images take you on an enchanting subterranean journey to caves around the world.
Make your donation soon and don't miss out on this great gift.

Send your cheque: **C\- Grace Matts, NSW Cave Rescue Squad Inc., 176 William St, Bankstown NSW, 2200.**

Preview the calendar: http://www.speleoprojects. com/html/en/main_home.html

The pictures this year show sites from Australia, Austria, France, Germany, Malaysia, Mexico, Slovenia, Spain, the United States and Venezuela.

The 32 free postcards is a gallery of showcaves: Austria, France, Germany, Ireland, Oman, Slovakia, Slovenia, Spain, Switzerland & USA.

Wilmot River Karst
A History of Exploration

Stephen Blanden
NC

WILMOT RIVER was named by Mr. N. L. Kentish (who was the discoverer) in 1844 after Sir John Eardley Wilmot, who was Tasmania's sixth Governor.

General History

It had come to my attention, in 1995, that there were several small areas of limestone along the Wilmot River; indicated on the Sheffield Geological Atlas 1:63360 series. After some research (documentation for this small karst area was very limited with only one reference found in *An Atlas of Tasmanian Karst* — Volume One, by Kevin Keirnan, 1995) and studying of the Wilmot 4241 Tasmap 1:25000 series, I finally instigated an exploratory trip with Laurie Rickards on 12th August 2000 to investigate the potential for and if there were any caves in this karst area. Six caves were discovered on this trip.

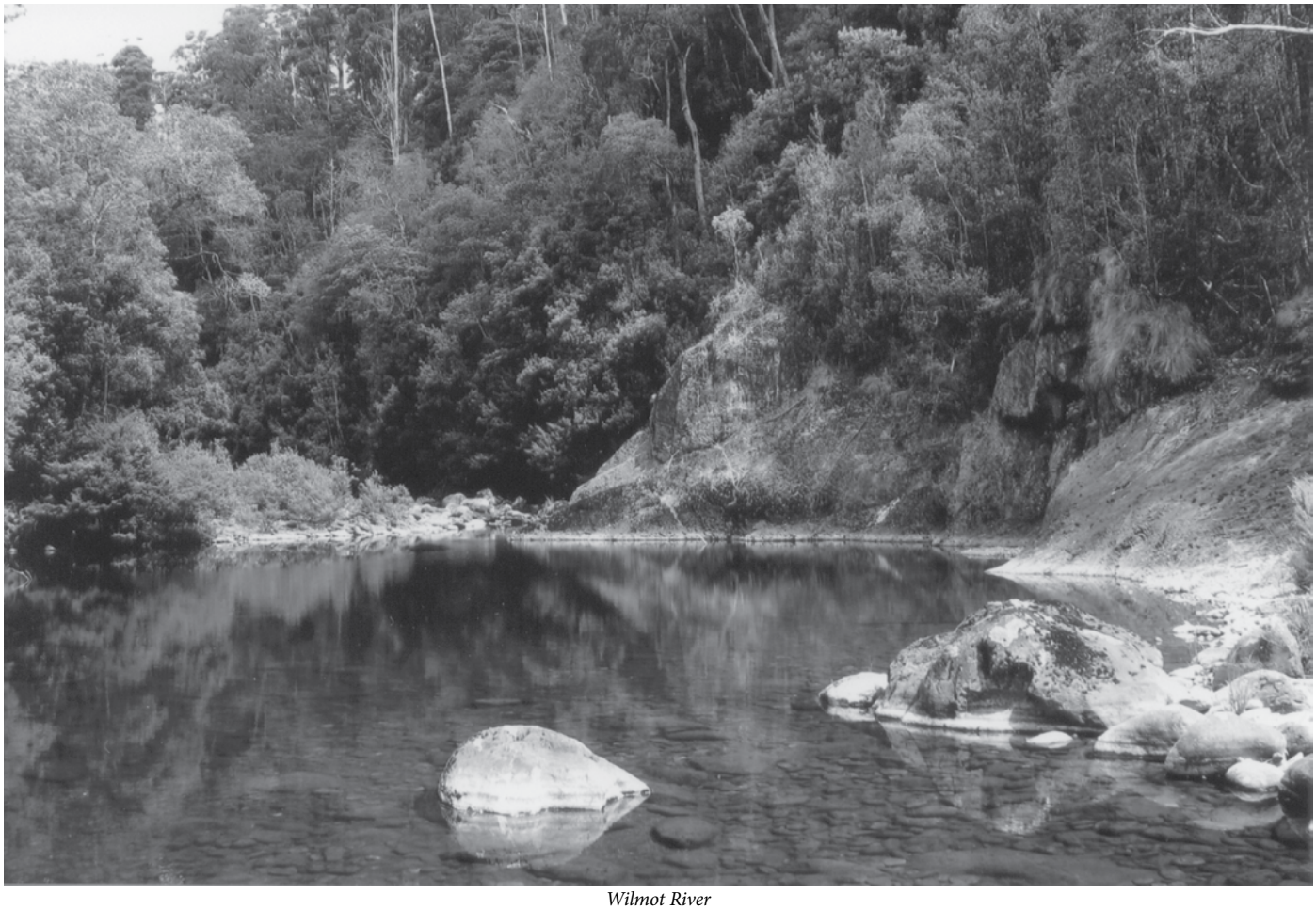
Location

The Wilmot River karst is located 5.5 kilometres west of the township of Wilmot, which is in turn 25 kilometres south of Ulverstone on the north-west coast of Tasmania. The Gunns Plains karst area is situated 12 kilometres north-west.

The Limestone

The karst at Wilmot River has developed in the Gordon Group limestones, a marine carbonate formation of Ordovician age. The limestone occurs as three separate outcrops extending along a portion of the river for 1.6 kilometres.

These three outcrops are most likely to be connected beneath the overlying sediments. The majority of the limestone is overlain by basalt talus and landslide debris from the



STEPHEN BLANDEN

Wilmot River

higher, larger area of Tertiary basalt, to the east and west sides of the valley. The possibility of interstratal karst beneath the basalt exists, although evidence of this is far from conclusive, as only one small depression has been located, next to the track on the higher western flank.

The topographic system is hill flank and valley floor with an altitudinal range of between 170 and 250 metres above sea level. The limestone is not found any higher than 250 metres and outcrops mainly within the first 100 metres of altitude from the Wilmot River on the western flank. There was no evidence of outcropping on the eastern side of the river.

The Caves

After conducting several trips to this area a total of ten caves were discovered, documented, identification tagged with the prefix WT and numbered.

Apart from two caves – Wilmot Pot WT.1 and Cramped Cliff Cave WT.10 – all the other caves are situated on and along the western bank of the river. Of the ten caves, seven have a surveyed length of under 25 metres. Wilmot Pot features prominently in the collection of caves discovered in this small backwater region.

It is a streamsink with a perennial stream cascading underground down a series of small pitches, eventually resurging into the river 250 metres away.

The cave currently has a surveyed length of 42 metres and a depth of 17 metres with further potential passages being blocked by basalt derived gravels and rocks, flushed into the cave over many years.

A strong draught was encountered at several constrictions. Wilmot Pot is hydrologically connected to Wilmot Pot Resurgence WT.2. The surveying of the resurgence is on-going and dependent on weather conditions as the passage is low and wet.

An inventory of the caves and a brief description of each follows:

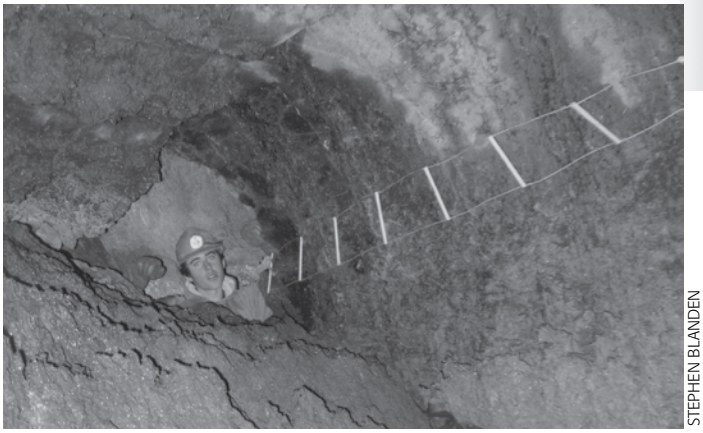
WT.1 Wilmot Pot – A major streamsink with interconnecting passages to several small chambers amongst and through an area of breakdown. It has a wet environment with some small area of decorations.

WT.2 Wilmot Pot Resurgence – Associated with WT.1 and is the only outflow found in the area. There are two constrictive entrances that lead to low wet passages containing a perennial stream. No formations. Further prospects possible. Length: 38 metres.

WT.3 Devil Maze – Three entrances all connect with a chamber that has a passage

STEPHEN BLANDEN

Paul Darby exploring Wilmot Pot



STEPHEN BLANDEN

Owen Britt in Wilmot Pot

STEPHEN BLANDEN

Limestone beside the Wilmot River

heading in a westerly direction. This passage becomes low and tight, and has evidence of Tasmanian Devils inhabiting the back sections. This cave occasionally floods. Length: 27 metres.

WT.4 Cloaked Cleft – A tight entrance near the river edge leads to a narrow rift of constrictive nature. Parts of this cave flood. Length: 10 metres.

WT.5 Lone Stal Passage – An ascending entrance leads to constrictive passage heading downstream to connect with a second entrance. Some minor formations. Length: 11 metres.

WT.6 Wilmot River Undercut – Formed by the river undercutting the limestone with two short passages heading west. This cave is subject to flooding. Length: 10 metres.

WT.7 Double Den – Situated close to WT.2, this cave has two entrances that connect to a small three metre high chamber. No formations. Length: 8 metres.

WT.8 Relic Cave – A short descending passage leads to a chamber that has an impassable passage connecting to the river. No further prospects and no formations. Length: 14 metres.

WT.9 Adowam Hole – A small entrance passage leads to a small chamber with two short terminating passages. Has a variety of cave fauna and occasionally floods. No formations. Length: 12 metres.

WT.10 Cramped Cliff Cave – Five entrances along the base of a small cliff line lead to very constrictive low passages. The cave has a dry dusty environment. Some bones were observed inside and along with various scat evidence tends towards the cave being well used by Tasmanian Devils. Length: 24 metres.

References

Blanden, S.G., 2000. Trip report 12th August. Unpub.

Blanden, S.G., 2000. Trip report 26th August. Unpub.

Blanden, S.G., 2000. Trip report 14th October. Unpub.

Blanden, S.G., 2001. Trip Report 10th June. *Speleopod* 41:20.

Blanden, S.G., 2001. Trip report 29th December. Unpub

Blanden, S.G., 2002. Trip report 4th May. Unpub.

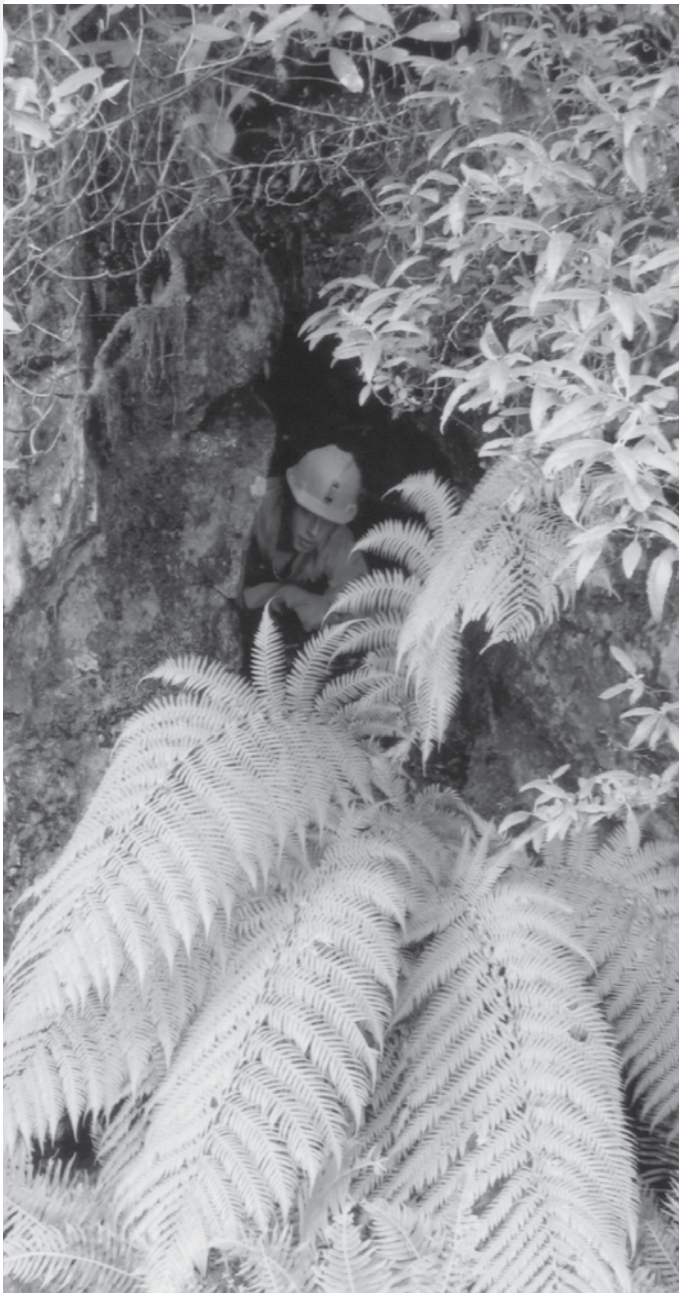
Blanden, S.G., 2002. Trip report 4th June. *Speleopod* 45:11.

Blanden, S.G., 2007. Trip report 25th February. Unpub.

Blanden, S.G., 2009. Trip report 18th April. Unpub.

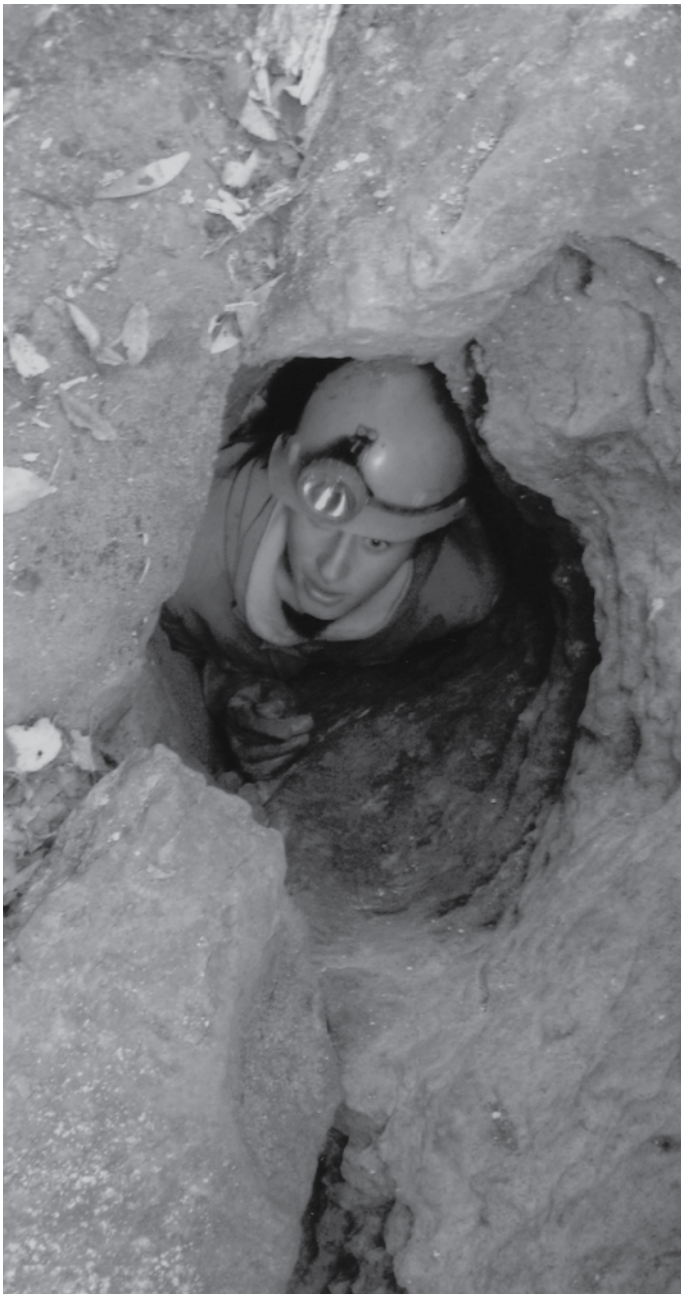
Kiernan, K., 1995. *An Atlas of Tasmanian Karst.* Volume 1.

Tasmap, 1990. Wilmot 4241 — Tasmania 1:25000 series.



STEPHEN BLANDEN

Owen Britt in the entrance to Adowam Hole



STEPHEN BLANDEN

Owen Britt in Relic Cave

Caving Essentials
– Let There be Light!

Paul (a.k.a. 'Og') Hosie
CEGSA

WHAT'S the worst thing that can go wrong when you're crawling through an unexplored tunnel over six kilometres from the daylight of a cave's entrance?

Hollywood aside, a very real risk is the failure of your light source. Being stuck in a cave with no light really takes the fun out of what we otherwise know is an awesome recreational pursuit!

Cavers have a bunch of guidelines and codes that help protect caves from people and people from themselves. One such guideline is to carry three independent light sources that will last for the whole caving trip.

My first caving light was a halogen light powered by 4 x AA batteries. It was bulky, put out poor light and chewed through the batteries, but it was CHEAP!

The redundant light 'guideline' was followed, but might have been bent a little in our young and silly days. And so it was on this basis, many years ago under the Nullarbor Plain, that the author had the first of many 'Caving Essentials' reality check moments.

After a full day of cave diving in Tommy Grahams Cave, it was time to head up out of the cave back to camp to refill scuba cylinders and recharge the batteries.

There were three of us (TICK that guideline!) but as we had trouble locating the small exit hole, each of our lights in turn started fading to a dull orange glow. It was late in the day and we knew the light would soon be fading from the sky, making it that much harder to find the right rock to crawl through to get out of the cave.

As you might have gathered, we made it out alive but I vowed not to run out of light in a cave again (it did in fact happen again — underwater and over 900 m penetration into Burnabbie Cave, but that's another story!)

This rather unpleasant little experience provided some valuable lessons:

1. Guidelines are there to help, not hinder; and
2. Never cheap out on critical equipment — it's just not worth it!

Petzl Duo

My caving experience has shown me that the Petzl Duo is a sound choice for serious enthusiasts.

The Duo comprises a tilting double light module and a 4 x AA battery pack, attached by a cable.

The two lights are controlled by a lockable selector switch and a zoom lever.

The Duo is tough, waterproof, has a good burn time (12-18 hrs with LED lamps) and above all, it is reliable. As a bonus, it has a spare halogen globe stored in the light module.

I have abused my Duo in caves around Australasia for ten years now and it just keeps on going despite my lack of care and attention!

I have seen other cavers with 3W and 5W LED lights which were terrifically bright but then fell apart or got moisture and dust in them after a couple of caving trips.

I recently purchased a LED Lenser 3W, focusable, LED which is a very compact and top little light for wide and spot beams.

One drawback is the AAA battery pack which provides only six hours' light. If they had made it to take AAs, I believe the light would be better suited for caving.

Lenser H7R headlight

After a couple of trips in and out of muddy, sandy and dusty caves (what I would regard as 'normal' treatment) my new light is showing some shortcomings with the sealing arrangements that don't bode well for it in the long term.

Like most cave divers, the Petzl Duo isn't the brightest in a crowd, but it will suit most caving conditions.

Although modern LED lighting technology is impressive, I would recommend the Petzl Duo as a tried and tested Caving Essential that you can depend on to help you enjoy caving safely.

P.S. Where's my bloody cheque, Monsieur Petzl?!


PETER RATTIGAN
Paul 'Og' Hosie

The IUS Congress 2009
Kerrville, Texas

Susan White
VSA

THE 15th International Congress of Speleology, Karst Horizons, combined with the 2009 NSS Convention during the week of 19-26 July 2009 in Kerrville, Texas, was a huge success. Fifteen Australians attended: Jay & Ross Anderson (WASG), Alan Caton (RSS), Arthur Clarke (STC), Jeanette Dunkley (CSS), John Dunkley (HCG), Peter Freeman (VSA), Julia James (SUSS, SSS), Peter Matthews (VSA), Grace Matts (HCG, SSS), Geoff McDonnell (NHVSS, SSS), Greg Middleton (STC, SSS), Nicholas & Susan White (VSA), and Ian Wild (SSS). (I hope I have the various ASF club affiliations correct — my apologies if they are not). Some of these will have different perspectives on the event but here are my impressions supplemented by data from the *NSS News* article.

The ICS is an event the IUS, which has its headquarters in the Karst Institute in Slovenia, holds every four years and is hosted each time by a different member nation.

The first ICS outside Europe was held in 1981 in Bowling Green, Kentucky. At the time this was the largest gathering of speleologists ever from more than one continent that IUS had ever held and it changed speleology in many ways. Some of the Australians who attended this time were also at Bowling Green.

This time we all got to meet new people and catch up with old friends and acquaintances. For VSA members we got to catch up with some previous VSA members who had spent time in Victoria years ago and then returned to caving in the US. Perhaps other Australians had similar experiences of meeting people who have caved here.

The Karst Horizons organising committee, led by George Veni for the past six years, did a great job to organize the latest congress. Yes, it took over the four years since the last congress in Greece to put it all together. The extra two years were the preparation for the bid in Greece, and the putting into place the various structures that go with organizing such a big event. And it was BIG! It has been described in a recent *NSS News* as 'an NSS Convention on steroids.'


MIKE WARNER

Andy Eavis, President UIS

For Australians, where our ASF conferences are every two years and much smaller, the concept of nearly 1500 cavers altogether at one conference is rather mind-blowing. There were more people involved in running this conference than ASF has as members!

A more detailed article can be found in the November 2009 *NSS News* which is available for download on the ICS website http://www.ics2009.us/nss.html, but there were 1490 registrations from 47 countries over eight days plus pre and post conference trips and excursions. There were also lots of trips to both tourist and wild caves in the Texas hill country near the congress site.

The program was an eclectic mix of papers, presentations, posters, workshops, forums, discussion groups, meetings, poster, media, art and photo shows, classes, SpeleOlympic competitions, and social events.

These ranged from the arts to the sciences and included specific NSS matters such as finances and office location as well as a range of topics like karst management strategies, caving equipment and digging techniques.

As well as the usual IUS meetings, NSS had a number of business meetings. There were eight evening field trips, 57 caving and cultural/tourist trips and 13 pre- and

MIKE WARNER

Grace Matts counting money collected at NSS Banquet for WNS research

post-ICS trips to three countries and 12 U.S. states. There was a wide range of vendors selling equipment, books, calendars, jewelry and the myriad of other things cavers like to buy. We certainly had an issue posting home everything we collected, and we were not the only ones.

The venue was a small private university, Schreiner University, in Kerrville Texas, between San Antonio and Austin. This made getting to the area relatively straightforward, even if it is a long trip from Australia.

The campus was able to have campgrounds (noisy and quiet) on campus. The campus had lots of suitable classrooms, lecture theatres, eating facilities, laundry, and accommodation.

It certainly had its limitations but at least we could all function without needing a car, and the complex system of shuttle buses we have experienced on other IUS conferences was avoided for everything except the banquets and field trips off site. The organizers are to be congratulated on their logistics.

The registration went smoothly, the information area was helpful and the accommodation (dormitory rooms or the apartments) was adequately comfortable.

ELVIRA BRANCO

Nicholas White catching up with friends from Brazil

I am sure there were crises (e.g. the lifts ceasing to work in the building housing the vendors, so everything had to be carted upstairs by hand) but overall it worked well. We found the food rather bland and uninteresting but it was adequate and I must admit it is a problem across the US anyway.

The week previous to the congress had seen this part of Texas experience a heat wave of over 35°C (100°F +), but the week of the congress was hot without that extreme, at least to us Australians. The Europeans were finding it harder. We did get a short heavy storm, which cooled everything off on the Monday night, but did not drown the Howdy party.

The program was so full of things of interest that we all struggled to get to see everything we wanted to. On Sunday 19 July the ICS and NSS Conventions were officially opened with words from Schreiner University President Dr. Tim Summerlin, NSS President Gordon Birkhimer, and IUS President Andy Eavis. The General Assembly is the business meeting of the IUS.

Australia is a member nation of the IUS, represented by the ASF and Nicholas White, the ASF Senior Vice President, is the ASF International Commission Chair and delegate, ably assisted by Grace Matts, the ASF Treasurer. They get to go to all the main meetings such as the General Assemblies (such fun!)

Sunday afternoon included the only plenary session of the ICS, where a packed auditorium learned about the IUS and the state-of-the-art in international caving, cave science, and cave management.

The evening saw the IUS President's Opening Gala, the first major social event of the week. Much of the action focused around the roughly three dozen booths and tables exhibiting information from ICS sponsors, show caves, and caving organizations from around the world. Nachos and cheese were served, and strolling mariachis gave the festivities a Tex-Mex flavour.

Shiner beer flowed courtesy of Spoetzl Brewery. Spoetzl's brewmaster estimated the beer needs for a crowd our size and provided us nearly twice the estimate. All of the kegs were rapidly drained, putting to rest the argument that non-Americans don't drink American beer.

The real meat of the ICS began on Monday 20th and continued through to the end of Saturday 25th (with a break on Wednesday).

Each day was filled with symposia, sessions, meetings, SpeleOlympic competitions, caving trips, non-caving family trips, Junior Speleological Society activities for

MIKE WARNER

Ric Toomey (NPS Mammoth Cave) & George Veni (NCKRI) (Mike Warner)

IUS WEBSITE

The conference site

IUS WEBSITE

Karst Spring, Texas (UIS website)

kids, and nearly non-stop 3D and video presentations.

Several Australians gave presentations which were all well received. People are very interested in what we do in Australia. Most of the papers included in the proceedings are available for download from the karst information portal (www.karstportal.org).

The evenings had a world film premier of *Texas Cavers,* the NSS Howdy Party, the joint reception (Cave Research Foundation, Karst Waters Institute, and National Cave and Karst Research Institute), an Open Mike Night of music and song, a fundraising auction, the NSS and Congress banquets at the Don Strange Ranch (an unusual slice of Texana), the Photo Salon award night as well as various parties.

The evening activities included trips to Cave Without A Name, Caverns of Sonora, Natural Bridge Caverns and bat flights from various bat caves and bridges. At the auction the NSS earned the most ($7,900)—expected as most donations came from NSS—and the IUS earned over $1,600, not bad for an auction debut. Grace Matts excelled herself in collecting donations Australian-style at the NSS banquet for the research into White Nose Syndrome at one of the banquets. She went around with a bag and collected up towards $1000.

Wednesday is the traditional ICS break from sessions and meetings for day-long field trips rather than the NSS procedure where the conference begins with a geology field trip on Sunday.

A few people stayed on campus to rest and relax with friends, but nearly 600 people joined one of 13 trips. They caved in Kickapoo Cavern, learned about the region's cave and karst archaeology, biology, geology, hydrogeology, palaeontology, or management issues, or put caves aside and enjoyed the Spanish missions, Sea World in San Antonio or the 15 km canoeing and kayaking trip on the South Llano River.

Nicholas, Grace and I all went to Austin to look at a series of karst springs with a nice ride in glass-bottomed boats at the San Marcos Springs. The Springs are one of the greatest outflows from the Edwards Aquifer where more than 200 springs erupt from three large fissures and many smaller openings. Early travellers and settlers described the large ones as fountains, but today the springs lie at the bottom of Spring Lake.

The Springs and the short 3.8 mile San Marcos River below them have been designated as critical habitat for five endangered species, including the fountain darter, the Texas Blind salamander, the San Marcos salamander, the San Marcos gambusia, and

Texas wild rice. As well over 100 cavers joined smaller trips to caves that included Honey Creek Cave, Longhorn Cavern, and Valdina Farms Sinkhole. A trip to Government Canyon State Natural Area was reported the next day in the *San Antonio Express-News.*

On the evening of Saturday 25 we returned to the Don Strange Ranch. For the IUS/IUS Banquet which included special ICS labeled red and white wine. IUS awards were given for the best poster at the ICS and for the most significant books and explorations conducted over the four years since the last ICS.

The banquet speaker, Deputy Assistant Secretary Deanna Archuleta of the U.S. Department of the Interior's (DOI) Office of Water and Science, outlined the DOI's extensive history supporting cave and karst research and management and its plans for continued support.

To get such a senior politician to the banquet was a big political coup for the organisers.

One discussion forum focused on the devastating White Nose Syndrome (WNS). Several experts presented their latest research and discussed strategies to manage and minimize its impact. Earlier in the year, WNS also hit the ICS hard. The rapid spread and unknown cause of WNS prompted the ICS Organizing Committee to carefully reevaluate its plans. The terrifying potential that it could be carried from cave to cave by humans cancelled caving on both pre and post-ICS trips in the WNS-affected states. To err on the safe side, in supposedly unaffected states, trips into caves with bat colonies were cancelled and decontamination was required after trips into caves not known to have colonies.

The impact of WNS on the ICS was hard on the organizers both financially and for morale. Some of the best caving trips in Texas had to be cancelled and excursions were curtailed and reorganized. This put extra strain on those organizing the trips for the ICS week, and many trips were cancelled and new trips arranged. Unbudgeted refund costs and purchase of WNS decontamination supplies had to be organized.

However, cavers understood the crisis, accepted the limitations, and without complaint, bound by the desire to help bats, decontaminated their equipment after each day's trip underground.

The publications produced by the conference are excellent. The guidebook did not focus on just the local area, and *Caves and Karst of the USA* (edited by Art and Peggy Palmer) is the first book to

IUS WEBSITE

Conference delegates milling around in front of auditorium

IUS WEBSITE

Dining hall at lunchtime

IUS WEBSITE

Banner indicating registration building

IUS WEBSITE

Conference site after rain

IUS WEBSITE

Crowd around the beer at the opening gala

IUS WEBSITE

Shopping in Speleobooks

comprehensively examine caves and karst throughout the entire United States.

As well as the usual program book and the daily newsletter, *On the Horizon,* was full of various bits of information such as the opening time of the Post Office! The papers, up to six pages long and not just abstracts, were produced as accompanying proceedings in three volumes.

Congratulations to the production team of Tom Rea (layout and final printing), Will White (editor), and LoIUSe Hose, (head of the scientific review committee which reviewed over 500 papers).

The information in the proceedings, program, and 15 field trip guidebooks has been posted on the Karst Information Portal (www.karstportal.org).

The final day was Sunday 26th. Many U.S. cavers had to leave for work the next morning. Most of the vendors, salons and exhibitors had packed up by late afternoon.

But people went caving, attended the cave restoration seminar or the special 'hot news' session on fresh-from-the-field results that were not available in time for the formal program.

Many of us attended the closing General Assembly, where Jamaica and Paraguay were accepted as new member nations of the IUS, a new draft code of ethics for caving and cave science was proposed, and a new IUS Bureau (governing board) was elected to serve for the next four years. The members of the Bureau are:

President: Andy Eavis (United Kingdom)
General Secretary: Fadi Nader (Lebanon)
Vice President of Administration: George Veni (USA)
Vice President of Operations: Christian Dodelin (France)
Adjunct Secretaries: Giovanni Badino (Italy), Jean-Pierre Bartholyens (Belgium), Alexander Klimchouk (Ukraine), Paul Williams (New Zealand), Stein-Erik Lauritzen (Norway), Efrain Mercado (Puerto Rico), Kyung Sik Woo (Republic of Korea), Nadja Zupan Hajna (Slovenia)

The General Assembly's final task selected the location of the 16th ICS: Brno, Czech Republic, in late July or early August 2013. The IUS flag was passed to Zdenek Motyčka, President of the 16th ICS organising committee. Look to www.speleo2013.com in October 2009 for more information.

After such a busy week the ICS ended quietly; a final busload rode out for an evening tour of Caverns of Sonora, the new IUS Bureau met for its first time, and ICS staff dismantled and packed all around campus.

Next morning we were all off, either directly for home or indirectly via post-ICS field trips.

The eastern segment of the coast-to-coast trip was led by Kevin Stafford, and other trips went to Cuba, Kentucky, Mexico, New Mexico, and New York, ending as long as 12 days after everyone left Kerrville. Four Australians went on the eastern segment of the coast-to-coast trip: Nicholas and Susan White, Grace Matts and Peter Freeman. We had an excellent trip but the details can wait for the next *Caves Australia.*

On another point, many of the Australians who attended more than one such congress are often asked if we will bid again for a congress.

Much and all as it would be great to have such an event here, it would be extremely difficult. We have less actual ASF members than NSS had volunteers involved in the congress.

The last bid we made was when there was a window of opportunity for organising one. That situation has disappeared and we would need to think very carefully if such a proposal was suggested again.

The organisers of the congress are to be congratulated that they have run such a great congress and I am sure all the Australians attending had a great time (heat, WNS, and American food notwithstanding). George Veni and his team deserve the praise.

Although I saw several Australians with similar interests to mine, others I hardly saw all week as there was so much to do and so many people to catch up with. We certainly had a great time and I would always recommend that the IUS is an opportunity as many people as possible should experience.

IUS WEBSITE

NSS auctioneer auctioning a print of a Texas cave entrance bought as childhood memorabilia by Nicholas White

IUS WEBSITE

UIS member countries' flags in the auditorium

Coming soon: 2009 VSA Nullarbor trip

Watch for the full story in your next *Caves Australia.*

Blowhole photo by Nicholas White.

Cave Conservancies

Nicholas White

THE IDEA of cavers owning or managing caves has been around for many years. Indeed when the Victorian cavers established the Rimstone Cooperative Limited, the objectives included the purchase of land(s) for cave conservation objectives as well as to provide accommodation for cavers in the Buchan area.

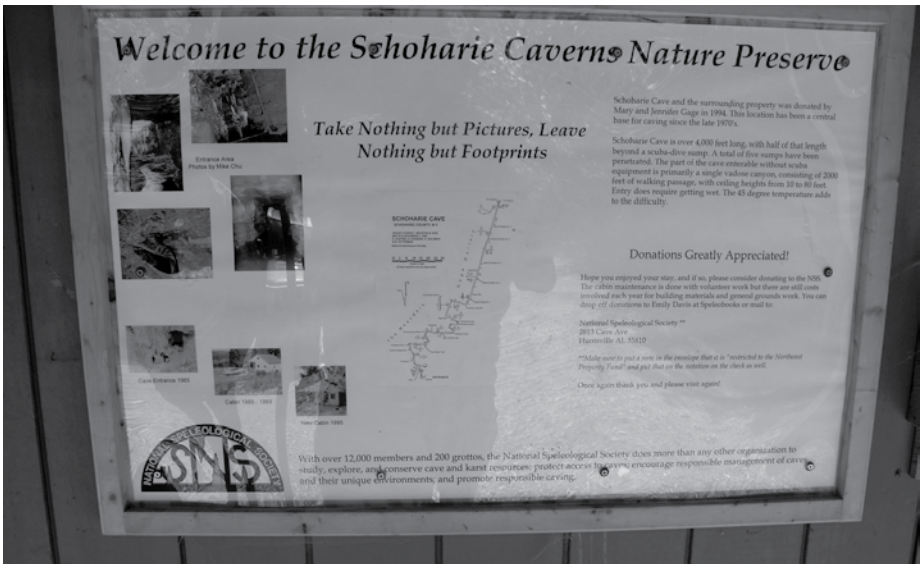
At the time of establishing Rimstone Cooperative the Victorian Spleleological Association was not incorporated and could not easily purchase and own property. Incorporation allows property ownership and thus most of Australian caving clubs are now incorporated and could contemplate purchasing cave properties.

However, cave ownership has its own problems and brings with it obligations which are probably best kept separate from the normal functioning of a caving club.

I will come back to the Australian situation further on but whilst I was in the United States for the UIS conference I took the opportunity to visit several of the earliest Cave Conservancies in New York State as well as the American Museum of Caves with its attached Hidden River Cave in Kentucky.

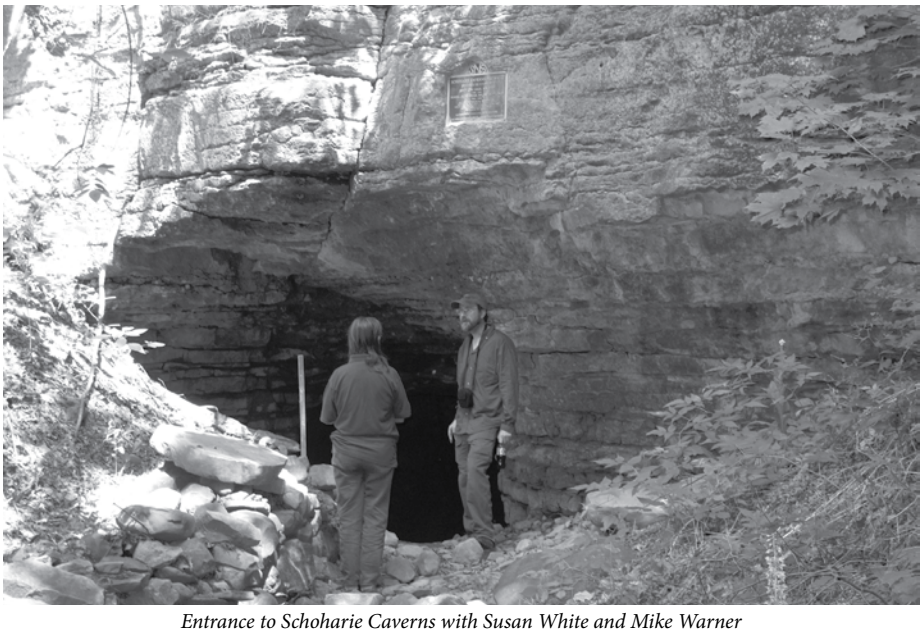
Knox Cave in Albany County NY was acquired in 1978 by cavers who tried to give it to the National Speleological Society (NSS). NSS refused to accept because of liability issues.

This led to the establishment of the Northeastern Cave Conservancy Inc (NCC) which accepted ownership and management of the cave property. The conservancy has successfully managed the Knox Cave property since then without accidents. It now owns and manages a number of other



NICHOLAS WHITE

Sohoharie Caverns notice board



NICHOLAS WHITE

Entrance to Schoharie Caverns with Susan White and Mike Warner

NICHOLAS WHITE

Thom Engel and Susan White at a notice board at Knox Cave Preserve.

such cave properties each of which has its own management objectives providing general caver access and restricted caver access because a number of the caves are used in winter as bat hibernation sites and have seasonal access restrictions. Some of the properties provide for camping groups or have caving huts.

"New York State, like 49 of the 50 states, has what is called a "sportman's law". This is a law that protects landowners from liability when individuals are on their property with or without permission." (Engel, 2009) The NCC thus does not carry liability insurance.

One of the NCC-owned caves, Schoharie Caverns was the cave where white-nose syndrome (WNS), now devastating the bat populations of the northeastern states, was first noticed in winter 2007. The population of bats in the cave has declined by 97% since 2007 when it first appeared.

The post-congress field trip was cancelled due to white-nose syndrome, as were some other field trips of the IUS Congress.

There is conjecture as to where and how far WNS will spread.

It has certainly spread to all of the northeastern states and there is some evidence that some spread may be from human transported spores of the fungus which is associated with the bat mortality.

Our visit was to the cave properties was only to the properties and did not involve caving in affected caves. We are indebted to Thom Engel (The Eclectic Caver), Mike Warner and Emily Davis of Speleobooks fame for showing us around the NCC properties.

In Australia, there are provisions in state laws to covenant private properties to protect animal or plant habitat. These laws could be used to protect features such as caves and this is certainly underway for one cave property in NSW. Protection under such laws depends on the altruism of individual landowners and there is very little state support for the protection and management necessary to protect the habitat or a cave.

The ASF was in negotiation with Cement Australia to be gifted part of their Mt Etna quarry with several caves on it. This was because at the time the Queensland Parks and Wildlife did not want the land as they perceived it to need too much rehabilitation and was not "natural" enough (my words).

Queensland Parks and Wildlife changed its position and the property was gifted to it.

ASF was comfortable with this solution. ASF did not see itself as the long term owner of this property and it was always in our planning that the property would eventually be an addition to Queensland Parks and Wildlife managed land.

What these negotiations did resolve was that the ASF Gift Fund and the ASF itself could receive and own property relating to the ASF's protection and preservation objectives.

Each year since 2005, members of VSA have had a trip in June to Pungalina in the Northern Territory close to the Gulf of Carpentaria.

The area has caves in Proterozoic dolomite which support a previously unknown population of ghost bats *(Macroderma gigas)* as well as a large population of orange leaf-nosed bats *(Rhinonicteris aurantia)*. The property is relatively undeveloped due to flooding problems and was being run as a Safari operation until the Australian Wildlife Conservancy (AWC) negotiated purchase as well as leasing part of the neighbouring Seven Emus Station.

This private ownership by AWC will ensure that the biota as well as the caves are well protected. This is the type of model we should discuss with all its pluses and minuses.

I propose that ASF members keep a watching brief on properties for sale containing caves or valuable surface karst. These could be brought to the attention of the ASF Executive or the Conservation Commission in the first instance.

Certainly at times property transactions occur over a short space of time and thus it is preparedness to look at options which is needed.

A current example is the Sand Cave property adjacent to the Naracoorte Caves National Park (WHA), SA. This is presently for sale but the asking price is too much for ASF to contemplate.

Our support has been offered but Steve Bourne of SA Parks and Wildlife Service has applied for funding to acquire the property to add to Naracoorte Caves National Park. Cavers could and should contemplate acquiring caving properties if such acquisition would provide for better management and protection of the caves.

ASF and the ASF Gift Fund could support such endeavours. It might be that, as with NSS, we would look to an incorporated entity at a distance from ASF itself for the purpose—but such a project may be supported by the ASF Gift Fund which allows tax deductible gifts.

The Conservation Commission is interested in opening discussion on the pros and cons of cave conservancy ownership in the Australian situation. Stay tuned for more.

References

Engel, Thom 2009, *Cave Management in New York, The NSS and NCC Preserves,* guidebook for Field Trip No. 71, ICS 2009.

Professional recognition for Armstrong Osborne

John Dunkley

ARMSTRONG OSBORNE, a holder of the ASF Edie Smith Award, has been promoted to the position of Associate Professor (colloquially known as an ASPRO) in the Faculty of Education and Social Work at Sydney University.

He has been a strong supporter of cavers in NSW, using his professional expertise as a science educator to give many talks at ASF Conferences and club meetings, and has an international reputation in his fields of multiple karstification (successive eras of cave and karst formation) and on hypogene speleogenesis (the evidence that many caves are formed by warm water rising from below).

Armstrong was introduced to caving through scouting in the 1970s and was immediately smitten both recreationally and professionally.

He completed an Honours thesis on Cliefden Caves, a Masters on Wellington and a PhD based on Wombeyan, Jenolan, Bungonia, Borenore and Timor Caves.

He was one of the first to conclude that Australia's caves are often much older than had previously been recognised, culminating in widely publicised evidence that parts of the Jenolan Caves are the oldest yet reported in the world, and produced a new synthesis on our understanding of how they were formed.

His cave publications range widely through *Caves Australia, Helictite, Cave Science, Cave and Karst Science,* the *Australian Journal of Earth Sciences, Acta Carsologica, Australian Geographer,* the Linnean Society and the *Journal of the Royal Society of NSW.*

He has been a member of the Bureau of the International Union of Speleology, was President of the Royal Society of NSW in 1993, the first of three such Presidents in the last 16 years who had a background with caving, and recently was a member of the study group constructing a national framework for karst values.

PENNEY OSBORNE

Daly River, Northern Territory palaeokarst 2007

DR WELI

Shri Lanka, cave behind Buddist Temple by Dr. Weli - 2009

So, as well as informing fellow cave science specialists, he greatly contributed to raising the profile of the image of cave science among other scientists and cave managers in Australia in an otherwise neglected field.

In 1997 ASF recognised Dr Osborne with our Edie Smith Award. As an educator, he has been a sound advocate for the value of amateur speleological work such as cave surveying and indeed of exploration and documentation, and he continues to be a strong supporter of conservation campaigns such as the current one at Timor Caves (where he is appearing as an expert witness for NHVSS), and attended several functions relating to the Mt Etna saga.

ASF extends our congratulations and best wishes to Armstrong and his long-suffering wife Penney.

Scientific Investigation in Caves

Nicholas White

THE ASF has issued a Draft Minimum Impact Code of Ethics for Scientific Investigation in Caves and Karst for discussion.

This code is similar to the new UIS Code developed this year as presented to the UIS in August. However it is more specific and Australian focussed and does relate to other ASF codes.

The Code has been developed to facilitate rather than inhibit responsible karst scientific investigation and to address pressures on karst resources.

These pressures include sampling for speleothems for climatological studies as well as biological sampling.

The focus is on responsible sampling not only for speleothems but also biota where over-collecting might restrict the remaining population and gene pool of a species.

The Code will encourage scientists to request permission to sample or research caves, even where this is not a legal requirement.

It is hoped that the Code is useful as an overview for managers and private landowners when considering research proposals. It will assist researchers in the design of their projects.

Most protected karst area managers require research permits, but this Code covers the principles of responsible scientific research in all karst rather just to help managers, but it will assist in identifying particular aspects to address when consideration is being given to granting a permit.

The Code is open for discussion and I would welcome comments.

The Code is on the ASF Website www.caves.org.au.

Comments should be addressed to Nicholas White:

nicholaswhite@netspace.net.au

Human Rights Medal for Stephen Keim

AAP

THE Human Rights Commission has awarded the Human Rights Medal for 2009 to Mr Stephen Keim, largely for his work in representing Mohammed Haneef in the notorious 2007 case. Although not a caver, Mr Keim was the barrister for Central Queensland Speleological Society's case against Central Queensland Cement in the 1990s, and along with many ASF members he attended the Mt Etna Reconciliation Ceremony at Cammoo Caves in 1999. *—John Dunkley*

Lights, Helmets, Ascenders, Descenders.

Exploring the lapiaz of Mount Soublette, Madre de Dios Island, Cuhean Patagonia. Photo © Marta Cander / Centre Terre

PETZL®

www.petzl.com

Petzl products are exclusively distributed by:
Spelean Pty Ltd, www.spelean.com.au
Spelean (NZ) Ltd, P.O. Box 219, OAMARU
www.spelean.co.nz