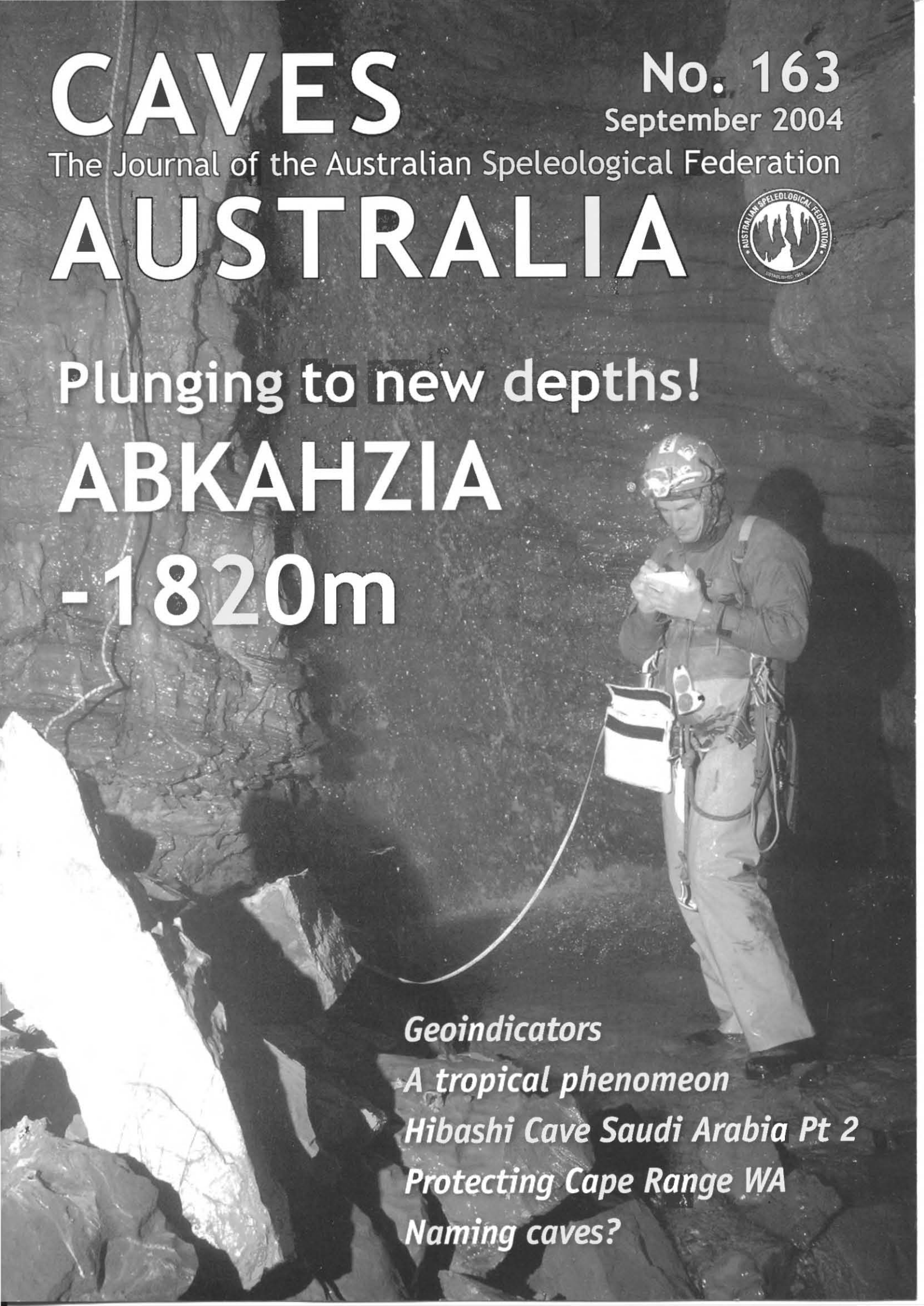
CAVES AUSTRALIA

No. 163
September 2004

The Journal of the Australian Speleological Federation

Plunging to new depths!

ABKAHZIA -1820m



Geoindicators

A tropical phenomeon

Hibashi Cave Saudi Arabia Pt 2

Protecting Cape Range WA

Naming caves?

Coming Events

In particular, this list will cover events of special interest to cavers and others seriously interested in caves and karst. A similar list in the ACKMA Journal will give more attention to meetings of specialist scientific interest. Both of these lists will be just that: if you are interested in any listed events, contact Elery Hamilton-Smith on [redacted] If you plan to visit North America or Europe, we can probably provide details of the many local-regional meetings which take place there.

2004:

Oct. 30	CSS 50th Anniversary Dinner, Canberra. Contact [redacted]
Nov. 6-7	SSS 50th Anniversary, Wombeyan Caves. Contact Ross Ellis [redacted]
Nov. 13/14	"Coalition Against the Filling", Anticline Cave, Wellington NSW (see notice inside this issue – Page 8)
Nov. 17-25	IUCN World Conservation Conference, Bangkok
Nov. 28- Dec 5th	International Symposium of Biospeleology, Raipur, India.
Dec. 7-10th	http://www.pascalis-project.com/symposium/symposium.html

And Looking Ahead

2005 and beyond

Jan 2-8	**Cavemania, 25th ASF Conference, Dover, Tasmania (see separate notice in this issue)** Details: [redacted]
Jan. 2-8	**4th Speleo Art Exhibition, Dover, Tasmania** in conjunction with 25th ASF Conference – see website above.
Feb 2-6	7th Mexican National Speleological Congress, Monterrey, Mexico.
Feb 8-12	65th Anniversary Congress, Speleological Society of Cuba, Havana.
Mar. 29- Apr 2	CAVEPS: 10th Conference on Australasian Vertebrate Evolution, Palaentology and Systematics, Naracoorte, SA.
April	(date to be confirmed, possibly April)
Apr. 10-17	ACKMA Conference, Westport, New Zealand.
21-24th April	From Earthly Bowels into Light: The History of Geological Speleology and Cave Finds... a symposium on the history of cave research being held at Torquay (Devon, England).
Aug 21-28	**14th International Congress of Speleology, Athens, Greece.**
Oct	3rd Symposium on Cave Archaeology and Palaeontology, Athens, Greece.
Oct 31-Nov 4	National Cave and Karst Management Symposium, Albany, NY.
Dec. 7-10th	Symposium on World Subterranean Biodiversity, at University of Lyon 1, France.
2007 January 26th	ASF Conference, South Australia, celebrating 50 years of the Australian Speleological Federation. Start planning now
2007	ACKMA Conference, Buchan. This will be part of the celebration to mark the centenary of the discovery of Fairy Cave.

CAVES AUSTRALIA

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

Editor: [redacted]

Production and Advertising Manager:
Joe Sydney
Email: [redacted]

Subbing Editors:
John Dunkley
Andy Spate

Editorial contributions are welcome! For contributor guidelines, contact the Production Manager.

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

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COVER: World's deepest! Denis at -1825 m and starting the long survey out. Photo Al Warild.

LAYOUT AND DESIGN: Jacqui Fry

WANTED
ARTICLES FOR CAVES AUSTRALIA!

Whether caving, cave diving or a 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.

ASF Council Meeting Mittagong (NSW)

24 & 25 January 2004

Council delegates from left to right:
Front row: Joan Crabb (HCG), Jodie Rutledge (NHVSS & ASF/VP)
Kneeling: Joe Sydney (HCG & ASF/VP), Kath Rowsell (WASG & ASF/Secretary), Megan Pryke (SUSS & NSWSC), Iain McCulloch (CSS President), Dennis Marsh (OSS), Sue White (VSA), Jill Rowling (SUSS), Evelyn Taylor (RSS), Jay Anderson (WASG & ASF/VP).
Back row: Rhonwyn Pierce, Nic White (VSA & ASF/VP), John Taylor (KSS), Chris Bradley (CSS & ASF/VP), Keir Vaughan-Taylor (SUSS), Cathy Brown (CSS & HCG), Robin Weckert (MUCG), Miles Pierce (VSA), Patrick Larkin (SUSS), John Dunkley (CSS & ASF/President), Mike Lake (SUSS), Dorothy Robinson (ISS), Lloyd Robinson (ISS), Tom Poritt (CCC), Grace Matts (HCG & ASF Treasurer), Bob Kershaw (ISS) and Evalt Crabb (HCG/President).

Senior Executive: Winfried Weiss

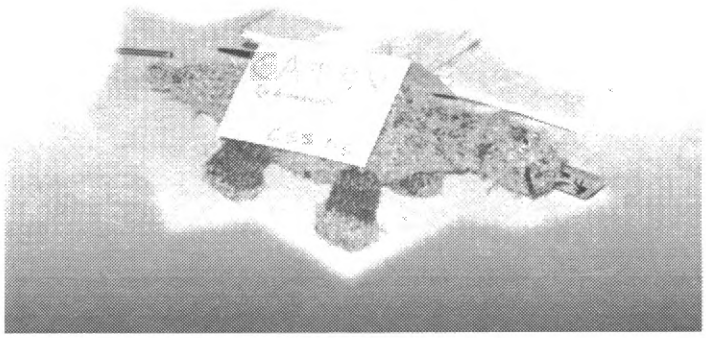
A warm welcome is extended to Winfried, the latest addition to the ASF Executive (Mittagong Council 2004). He's a qualified lawyer, and is with the Queensland Police Service in Maryborough. A member of Chillagoe Caving Club with interests in exploration and documentation, particularly new and little known areas.

Tom Porritt (CCC) with John Dunkley during dinner.

Dennis Marsh of OSS wins Environmental Fund raffle. Our thanks to 'Old Caves Winery – Qld' for donated port and wine.

Delegates at dinner.

2004 ASF Executive
Front row: Kath Rowsell (Secretary), Jay Anderson (Senior VP), Joe Sydney (VP).
Back row: Nic White (VP, Chris Bradley (VP), Grace Matts (Treasurer), Jodie Rutledge (MS) and John Dunkley (President).
Not present: Winfried Weiss of CCC.



CSS mascot 'Dinosaur' with 1.5 votes!

Delegates, Evalt & Joan Crabb (HCG), Megan Pryke (SUSS & NSWSC), Tom Porritt (CCC) and Sue White (VSA)

POSITIONS VACANT:

Editor and Sub Editor

After 4 years at the helm, our Editor Geoff Crossley has given notice of his resignation at the end of 2004. Aided by our acquisition of InDesign software, Geoff has overseen remarkable improvements in the size and quality of Caves Australia and we are grateful for his work.

There is now a vacancy of Editor, commencing with issue 165 early in 2005. You'll have a keen eye for sourcing good stories (you don't have to write anything yourself!), have good contacts with ASF clubs and members (though this can grow in time) and be good at organising and scheduling. At present the job is not too onerous because lots of unsolicited material is rolling in. You'll need to organise sub-editors and liaise with the Production team (currently headed by Joe Sydney, who organises advertising, the actual laying-up, printing and distribution, so you don't have to do anything of that sort). Perhaps you've edited a club newsletter or similar (though this is not essential as we'll help train the right person). Among the perks: fame if not fortune, an entry in your CV, and the occasional free book for review! Time required: hard to say but maybe 10 or 12 hours every issue (i.e. 3 months). Probably not as much as you'd think – remember, unlike many club newsletters, you won't spend any time messing around with production and distribution.

SUB-EDITOR VACANCY: Are you good at crossing 't's and dotting 'i's? We could use another sub-editor whose task would be to proof-read articles and maybe to help source more (that's optional). This job is a bit painstaking but still takes only 2 or 3 hours every few months.

Interested? Call Joe on [redacted] to have a chat. Or send your expression of interest to Joe Sydney at [redacted] or to Jay Anderson at [redacted]

SUSS's gastronomical tour of French caves! October 2004

Seven of SUSS's finest cavers are to hit the depths of France and seriously attempt to deplete the French duck population whilst reducing stocks of France's finest 'steenky' cheeses according Kevin Moore, a SUSS expedition caver.

But seriously, Kevin did explain further that they will be also filling in time caving in Vercors with the SSSI (Spéléo SecourS Isère) and picking up some rescue tips whilst caving. Other areas they wish to visit whilst on this gastromonical tour will be caving at Barnabé, Aven Clara and visiting other key caves incuding Grotte de Clamouse, Peche Merle, and the Gouffre de Padirac.

Bon chance and bon appètite to SUSS!

Wilderness Rescue Search and Rescue Rogaine 'Navex' Competition — 3-4 July 2004

Goulburn River National Park — NSW

Joe Sydney — President and Captain
NSW Cave Rescue Squad Inc

Two teams of NSW based cavers under the banner of NSW Cave Rescue Squad entered into this years' Navex. Teams entered are from all emergency services, bushwalking clubs, Rogaine clubs and walkers. This year, the team experienced unusually harsh conditions as the course held little drinkable water owing to the drought, unseasonal high temperatures for winter (22c) and rough terrain.

SUSS entered a day team of 4 who scored an impressive 620 (highest scored 890) coming 8th of 72 day teams. The overnight team of HCG, UTSSS and Cave Rescue members scored slightly higher with 780 (highest scored 1680) and ranking 15th of 38 teams.

This year also saw Peter Brady accept a 5 year participation 'pewter cup'! Peter now joins a small and exclusive club of 'Navex port' cup holders. Joe Sydney, President and Captain of NSW Cave Rescue was awarded with a 15 years participation plaque presented by the Minister of Emergency Services representative Mr. Brian Goode.

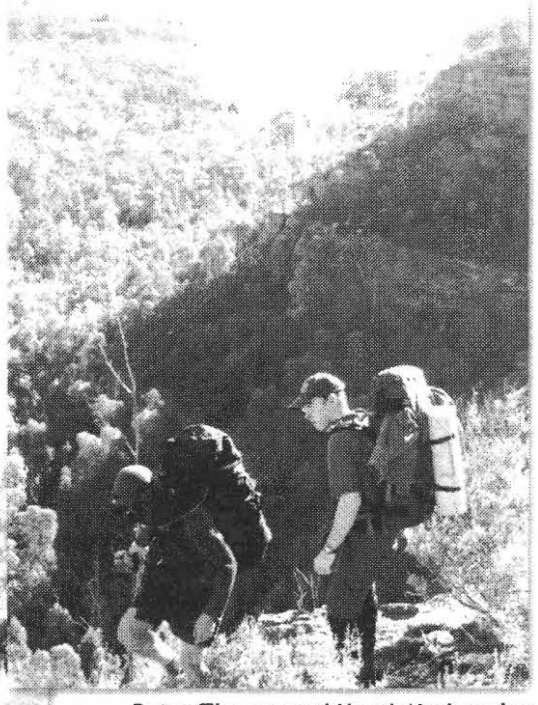
Photographs of the event can be found at: http://www.bwrs.org.au/navshield/index.html http://www.caverescue.org.au/

My thanks to cavers and squad members in supporting NSW Cave Rescue and taking an interest in such activities.

PHOTOS: JOE SYDNEY NSW CAVE RESCUE SQUAD

At the starting line! SUSS — Megan Pryke, Matthew Fischer, Alan Pryke and Carol Layton.

The brave 'intrepid' team: Peter Thomas (UTSSS), Peter Brady (UTSSS), Andrew Baker (UTSSS), Heath Nash (CRS) and Joe Sydney (CRS\HCG).

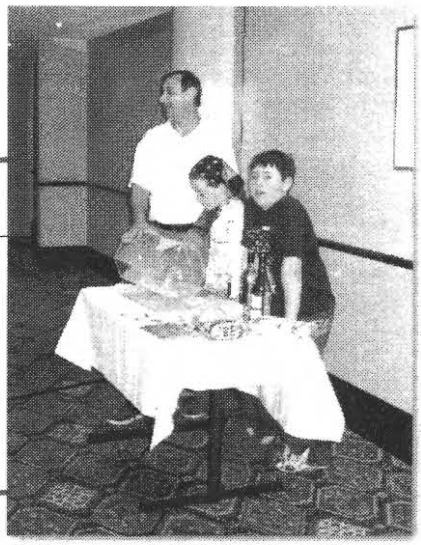


Peter Thomas and Heath Nash trying to find a route through cliffs on way to Bravo checkpoint.

NSW Cavers Dinner

Al Warild kept cavers enthralled with tales of adventurous international trips and his most recent and successful (August 04) push for world's deepest reaching -1820mt in Voronya cave — Abkhazia, at the annual cavers dinner.

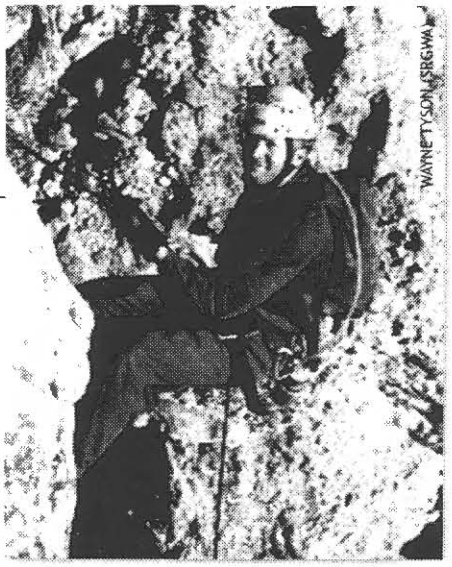
48 cavers from 12 clubs and 4 international guests (52 in all) attended the dinner at Bankstown Sports Club which was organized by Highland Caving Group on Saturday 25 September 2004.



Raffle draw with Joe Sydney (organizer) and SUSSlings Kelly and Lachlan Vaughan-Taylor.

Richard [Ric] Anthony Brown

BORN: June 21, 1965
DIED: July 5, 2004



Howard Richardson
SRGWA

He set his sights on the top and inspired those around him to greater heights. In 21 years service in WA Police force, Ric touched and saved the lives of many. Before he died, aged 39, Ric reached his final summit in March when he married Vicki, his partner for four years. He died 14 weeks later after battling an aggressive cancer for nearly 6 months.

Born in England, he came to WA with his parents when he was three. The family settled in Armadale, where his father said young Ric fell in love with the outdoors, "He was a very high spirited and affectionate boy. Animals and the outdoors, that was his big love in life," he said.

After graduating High School at 17 he was accepted to study science at the University of WA. But not sure if a life in science was for him, he decided to defer university and try life as a policeman. In 1983 he joined the WA police service as a cadet and graduated from the Police Academy the next year, ranked 11 out of 82 students. After two years at Perth Central and then two more years in Kalgoorlie he returned to Perth and became a detective in 1988.

Ric was a detective for 10 years at CIB Perth, the Break Squad, Cannington Detectives.and Organised Crime Operations. He distinguished himself as an investigator and the criminals he dealt with were a Who's Who of the underworld. Colleague Ash Leiber said "Ric was a consummate professional and a man fellow officers would entrust with their lives."

"He was a fearless individual with integrity and maturity abounding," he said. His inner strength and fighting spirit was without comparison. "As well as a great mate, he was a great police officer,a great detective but also a great intelligence professional."I would suspect that Ric would have been great at whatever he put his hands to."

In 1998 Ric moved to 79 Division before moving to the Bureau of Criminal Intelligence where he worked in the Development and marketing Unit and Casino and Racing Intelligence for four years. His final role with the WA Police Service was with the Child Abuse Unit.

Outside of work Ric's love of the outdoors led him into caving. In 1995 he became a member of SRGWA and he started his caving experience with beginner weekends and helping with cleanup work in caves at Yanchep. Over the next few years Rics experience and enthusiasm in caving grew as he undertook cave exploration and surveying. He was also involved in water and fauna monitoring programs in caves on the Leeuwin - Naturaliste Ridge.During this time Ric became a Vertical Trip Leader with SRGWA and this widened his field of caving.

The majority of Rics caving was done in the South West of WA at LNNP, Yanchep, Jurien and Eneabba. But In 1997 he was part of a caving expedition to North Vietnam and between 1998 and 2000 he explored and helped survey caves on the Nullarbor Plain. In later years Ric also became a member of WASG and became more involved in conservation, working with Rauleigh Webb and Jay Anderson on the court case against limestone mining in the Cape Range and other conservation projects. He did a stint as Chairperson of SRGWA and prior to that Safety and Training officer.

Ric also undertook a one year study of the bat population in Quinninup Lake cave(LNNP) along with Kyle Armstrong {Zoologist}and Peter Armstrong {WASG}. Ric's love of the outdoors was not only confined to caving: he shared a life long passion for reptiles with his brother Russell.

Mountaineering and trekking were his other passions. He did a number of walks through the Stirling Ranges (WA) with club members or work mates. And in 2001 climbed Mt Aconcagua, the highest mountain in South America and at 6962m one of the world's highest peaks. He then spent Xmas 2002 on Mt Cook in New Zealand.

Ric passed away on Monday 5th July with his family by his side, and the funeral, with full Police Honours was held the following Saturday. Ric is survived by his wife Vicki, son Harrison (2) and stepson Conner (8).

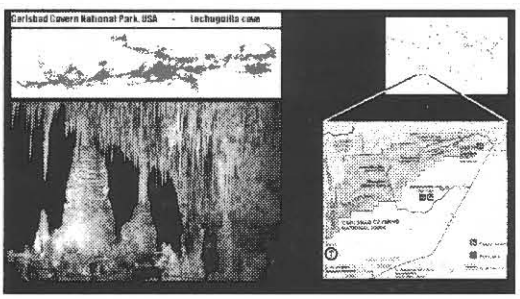
My fondest memories are of many caving trips and bush bashing with Ric.

Keep on Trogging mate.

ASF finalist in QORF awards!

ASF is one of two finalists for the 2004 QORF Award for Outstanding Achievement. QORF is the Queensland Outdoor Recreation Federation and the Award is for an organisation which will "set themselves apart through their dedication to best practice and high standards in the delivery of outdoor recreation". The QORF Awards "celebrate and reward best practice that has significantly improved outdoor recreation outcomes for participants and clients".

The Award will be announced on Brisbane on 16 October, 2004. If we are successful, there will be more news in the next Caves Australia, No. 164.



Tas explorer off to Lechuguilla, USA.

Northern Caverneer David Wools-Cobb is joining an exploration and surveying expedition to the renowned Lechuguilla Cave (New Mexico) at the end of October. An excellent photographer, David has just gone digital and we'll be looking forward to seeing some of Lech at the ASF Conference. David is also coordinateing the post-ASF Conference field trips in the Mole Creek karst area.

ASF Karst Index Database (KID) Updating Project

Mike Lake
www.caves.org.au

The ASF's Karst Index Database now features six new searches. This updated version has:

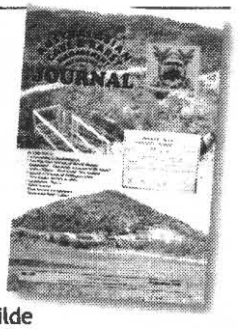
- Information on around 2,000 cave maps
- Information on other maps such as topographic maps and cave area maps (several thousand),
- Ability to selectively search for listed karst areas,
- and new searches for Articles, Organizations and People.

Work on adding updating ability is behind schedule but progressing well. Please feel free to visit the KID and of course feedback would be most welcome!

What's in ...

ACKMA Journal September 2004

Another great issue of serious cave reading has been published. The September issue includes:



- A Gathering in Rockhampton – Kent Henderson
- Cave Project Management? – Neil Kell & Elery Hamilton-Smith
- The Fire Clay Caverns of Mount Morgan – Kent Henderson
- Cave Guides Workshop 2004 – Cathie Plowman & Scott Melton
- A Retirement at Waitomo – Kevan Wilde
- Visitor Effects, West Coast, New Zealand – Deborah Carden
- Launch of Friends of Wellington Caves – Andy Spate
- History of Cammoo Caves – Theodore Olsen
- New Tasmanian Cave History Book – Nic Haygarth
- ANDYSEZ 50: *Lampenflora*, Part Three – Andy Spate
- Karst Science – Ian Houshold
- Tasmanian Karst Update – Ian Houshold
- Palaeontological & Archaeological Resources in BC – Carol Ramsey
- Camooweal – how many caves are really here?– Dennis Rebbechi
- Cave Pals – Andy Spate
- A Brilliant Caving Light! – Steve Bourne
- Book Review – Elery Hamilton-Smith

Are you interested in next year's West Coast NZ Conference? This issue also includes an insert program and booking form.

For more information about ACKMA, please visit:

http://www.ackma.org

THOSE HORRIBLE TASMANIAN EYE-EATING CAVE LEECHES

Amy Ware

This story is a few months old now, but illustrates the kind of incident that could potentially turn a straightforward, well-prepared caving trip into a full-on rescue.

Our CCV group had been caving for about 1½ hours, moving upstream from the entrance of Croesus Cave at Mole Creek, and reaching the Golden Staircase. We had just turned around when I felt a stinging in my eye, which turned out to be a leech. It must have fallen onto my helmet outside the cave entrance, and taken some time to wriggle round and into the juiciest bit of flesh it could find.

Standing in ankle-deep streamway, my caving colleagues emptied packs and dug into first-aid kits. Panic wasn't even in our vocabulary. The traditional flame method of removing leeches was quickly discounted (thank goodness!). A pair of tweezers (in hindsight, also a very dangerous option) also proved useless when the leech retracted from the metal contact to shrink completely beneath my eyelid. "Oh #>*$, I can't see him, he's gone right in!" said Doug who was digging, while Neil knelt and rummaged (thanks guys!).

The answer proved to be salt tablets, moistened (you don't want to know with what) and dabbed in the corner of my eye. Leechie got thoroughly uncomfortable, and dropped out to become an unusual part of the cave stream's fauna. Luckily he hadn't drilled in far, and there was no bleeding.

Unfortunately, this wasn't the end of the story. I already knew that leech bites on my legs or arms got swollen, red and itchy, but I hadn't guessed what it would do to the soft tissue around my eye. The swelling began almost immediately, and after an hour I had lost most vision from that eye. Luckily, we had done a quick exit and were back at the car by then. It took 3 days for the swelling to go down, and antihistamines only had a moderate effect.

Croesus was a relatively easy cave to get out of, and the gradual loss of stereo vision meant, at worst, misjudging the edge of a rim pool and stepping into thigh-deep not ankle-deep water. But it's a good reminder of how simple or unusual things could easily change the picture in a more complex cave. And now, I carry saline solution in my caving first aid kit (no more saliva needed!).

Just thought I'd send this in because the picture is so bizarre. The postscript is that I did still get to do Kubla that trip, and have since braved many more of those leechy Tasmanian caves.

Diver's grim discovery at sink hole depth record!

Johannesburg — South Africa

An Australian diver set a new deep-water record in a limestone sinkhole in South Africa. David Shaw reached the depth of 271 metres in a 9 ½-hour dive using rebreather equipment at Boesmansgat, a dolomite sinkhole in the Northern Cape province. In his attempt, he abandoned his quest to dive even deeper after finding the skeletal remains of Doen Dreyer, who died in the cavern in 1994.

FREE FALLS TO DEATH

Bungonia — NSW, Australia

Only weeks after Australian Roland Simpson made his fatal jump from the Jinamao Tower in Shanghai, Brisbane-based Jason Fitz-Herbert, a senior member and Director of Safety of the Australian BASE Association died after jumping Bungonia's limestone gorge (NSW). The 33 year old was en-route to the funeral of Mr Simpson when he made his fatal jump

Positions Vacant

In accord with the constitution of the ASF, a number of positions on the Executive Council of the ASF will become vacant at our Annual General Meeting in January 2005. Nominations and expression of interest are sought for the following positions:

President
Membership Secretary
Vice President x 2

Expressions of Interest and/or nominations are also sought for the following, currently vacant, positions:

Executive Secretary
Commissioner - Leadership Standards
Commissioner - Publications

If you have an interest in working towards the advancement of caving and cave management in Australia, or would like further information on these positions, then contact the Secretary, ASF, at wmweiss@bigpond.net.au or any other member of the Executive.

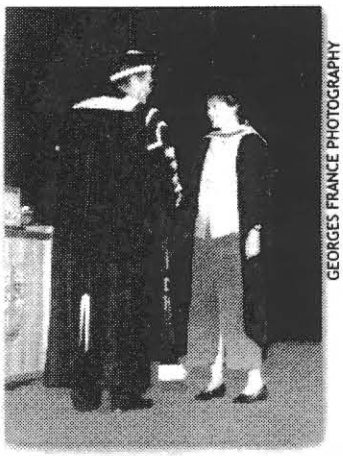
EPIRB UPDATE

EPIRBs have saved many lives by sending emergency signals to satellites. Future changes to frequency will affect beacons.

Analogue EPIRBs with a frequency of 121.5 MHz will no longer be detected after February 2009. A digital frequency of 406MHz has been selected as the replacement frequency. Digital 406 MHz is operational and can be detected faster and more accurately than analogue.

For more information, visit www.amsa.gov.au/beacons

Karst Graduation!



GEORGES FRANCE PHOTOGRAPHY

Cathie Plowman of NCC receives her Graduation!

Members may be aware that the Charles Sturt University (NSW) is offering postgraduate study in karst management. The course was first offered in 2001 as a postgraduate Certificate. Several ASF members have undertaken some study towards this postgraduate qualification. At least four ASF members have graduated with a GradCertKarstMgt – obtained after a year of postgraduate study. Recent graduations include Cathie Plowman (NCC) and Jay Anderson (WASG/SRGWA). At this stage, other ASF members who have already completed the Grad Cert are: Anne Wood (WA – CLinc) and Kath Rowsell (Africa, VSA/WASG and numerous other clubs...)

Cathie has said that she intends on enrolling in the Grad Dip in karst management leading to Masters research in caves and visitor experiences. Jay has only one unit left to complete the Grad Dip and then she intends on enrolling in the Masters degree in karst management.

The GradDipAppSc(KarstMgt) is obtained after a further one year of postgraduate study (but is now all that is being offered by CSU Ð so participants need to do the two year diploma). The year of 2004 is the first year that the Grad Dip has been offered. Course Participants can highly recommend the course... for further information contact Penny Davidson: pdavidson@csu.edu.au

O.S.S. Orange Speleological Society

Cliefden Caves Access Update.

Orange Speleological Society is continuing negotiations with landowners over revised access arrangements for Cliefden Caves.

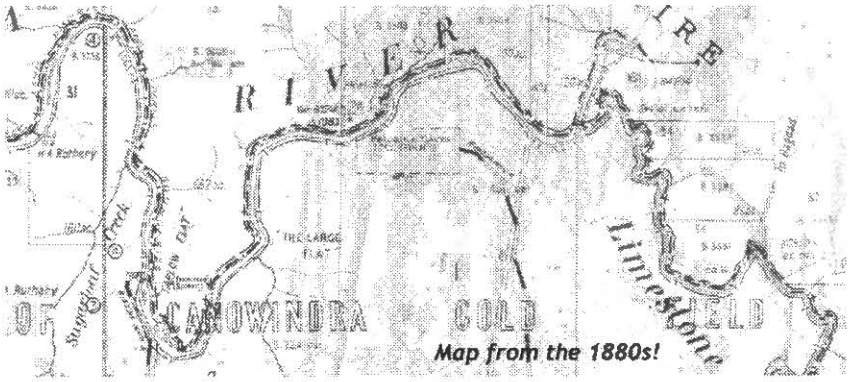
Over recent years circumstances have warranted a review of the long-standing arrangements where Orange Speleological Society has managed access to the caves through a permit system. Whilst a close relationship has existed between cavers and the owners of "Boonderoo" property, there has been little contact for some time with adjoining landowners on whose properties a number of the caves are situated.

Consultation with the owners of "Boonderoo" has resulted in agreement in principal on revised access conditions and new procedures for cavers. These are also now under review by the adjoining landowners. While these negotiations are still in progress the current suspension of access to the Cliefden Caves must continue for caves on those adjoining properties however, Orange Speleological Society in consultation with the owners of "Boonderoo", can advise the recommencement of some limited access to the area.

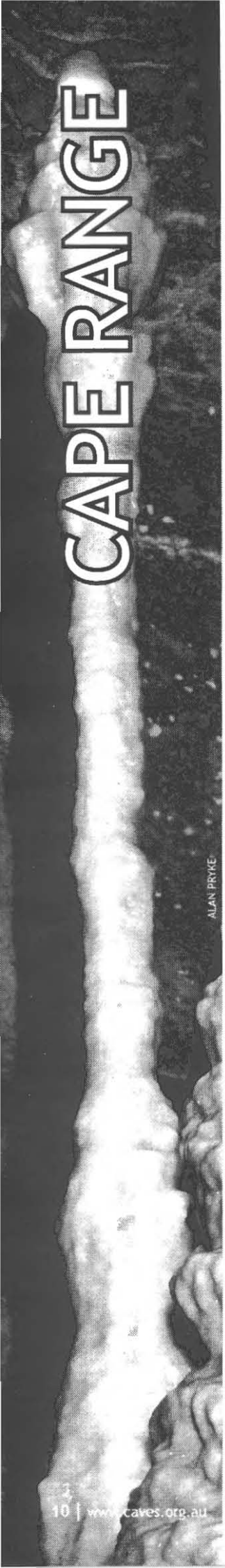
Orange Speleological Society will be in touch with clubs shortly to explain the proposed new procedures. In the meantime enquires regarding access to Cliefden Caves by ASF organisations can be made in the same manner as in the past.

In conjunction with these property access arrangements, a ***Cliefden Caves Conservation Plan*** is being drafted, which will define guidelines for cave usage and conservation, for all groups visiting the caves. It is hoped this draft conservation plan will be circulated among other organisations for comment in the coming months.

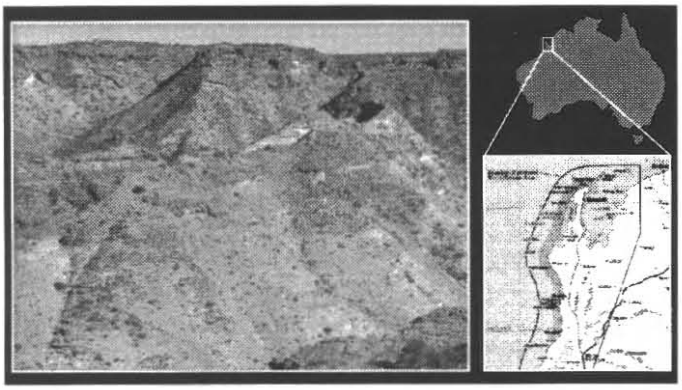
At this time we are hopeful that 2005 will see the resumption of full access to the Cliefden Caves for cavers.



Map from the 1880s!



The Cape Range Peninsula



The Cape Range peninsula on the Gascoyne coast of Western Australia is a breathtaking place of world significance. Do you know that the Cape Range is an extraordinary karst system that needs protection? You may have heard that there is a unique diversity of subterranean fauna, which live in the underground caves and mesocaverns of this karst system – amazing treasures hidden under an arid desert surface.

The Mining Proposal

In July 1999, there was an application for 10 mining leases over a combined area of 8,250 hectares in the Cape Range area. Initial mining was proposed for a small part of the area, for the production of limestone for the controversial Mauds Landing project. The Australian Speleological Federation (Inc) ("the ASF") objects to mining on the Cape Range peninsula. The Environmental Defender's Office (EDO) represented the ASF (and its State member Groups such as WASG and SRGWA) in its objection to the grant of the mining leases.

Significant related events since last update

An article in the Australian Caver (no. 155, pp.:9-17) outlined that the legal action was concluded in the Wardens Court in Perth on 10 November 2000. After a 5 day hearing, the Warden made the recommendation (to the Minister for Mines on 9 February 2001), having accepted the evidence of several witnesses called by the ASF. The Warden found that the Cape Range is a unique karst system, outstanding on world scale in terms of its location, geological structure, subterranean fauna and its integrity. He also agreed that the Cape Range contained unique and extraordinary subterranean fauna, and that it was likely that unique fauna would be destroyed by a mining operation. The Warden also noted a high potential for significant undiscovered anthropological sites. The Warden accepted that the Cape Range contained World Heritage values and that mining activity would be a "significant negative factor" in future decisions regarding World Heritage nomination or listing.

The proponent had referred the proposed mine to the EPA for evaluation. Objections to the level of evaluation (Public Environmental Review – PER) were lodged during 2001, with the ASF recommending a change to a Proposal Unlikely to Environmentally Acceptable (PUEA). The outcome was that the level of assessment was changed from a PER to an Environmental Review and Management Program (ERMP). Once again, this was a positive outcome, and the Minister allowed an extended period of public comment (10 weeks instead of 8 weeks).

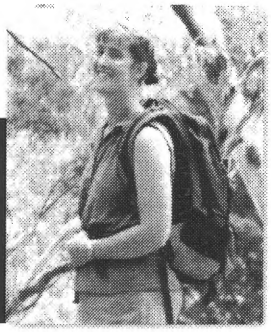
Despite the outstanding comments made by the Mining Warden and the positive outcome of the EDO/ASF court case, however, it is the Minister for Mines, who will have the final decision regarding the granting of the mining leases. Although the legal action was concluded in the Wardens Court 2000, 4 years later – the process STILL continues.

The EPA process of assessment (ERMP) occurred in 2002 and the public comment for this closed on the 7/10/2002. There were submissions from the ASF, WASG and SRGWA. Additionally, the Conservation Council and the Wilderness Society met with speleological representatives to gain an understanding of the karst issues involved. The ASF provided conservation colleagues with access to the information held by the EDO (and utilised in the ASF Court process). Some weeks after submissions had closed the EPA made contact and permission was granted to forward the speleological submission in totality to the proponent, rather than just including the concerns in a summary report that includes other groups concerns.

It is the ASF recommendation that limestone mining on the Cape Range peninsula is opposed and ASF calls for the Government to remove the strategic limestone mining purpose from the proposed 5(h) reserve, enlarge the Cape Range National Park and advocate for World Heritage Listing. The ASF and its member groups in WA continue to consult and lobby the Government regarding this issue.

There is now more support for the ASF and the WA Speleological Group's objection to the proposed mine, as other groups are now aware of the issues. Through the campaigning of other conservation groups, the public became more aware of the proposed resort at Mauds Landing. After much lobbying by the WA Conservation Groups, in July 2003 the State Government rejected the proposed marina resort, stating that it would "not accept developments that threaten this precious and fragile coast."

During August 2003, the Wilderness Society met with the EPA, using a multimedia presentation to outline to the EPA the global significance of Cape Range. It is understood that the EPA is still trying to decide on whether to allow the project to go ahead and they are corresponding with the proponents regarding several significant environmental concerns that would require the proponent's attention. We have an optimistic outlook and would like the EPA and the Minister for Mines to uphold the

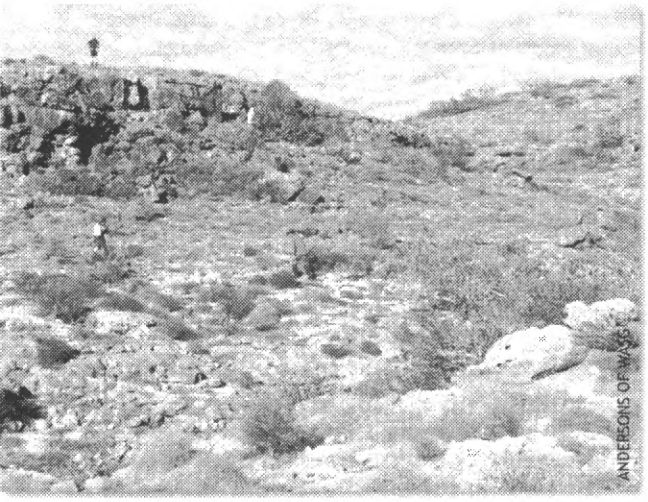


Jay Anderson
ASF Senior Vice President, WASG President & Conservation Officer

recommendations made by the Mining Warden and not allow the proponent to proceed.

But rejection of this particular proposal will not be enough to secure the values of this fragile environment. The Cape Range National Park, which occurs adjacent to the proposed quarry site, currently has its boundaries and management plan under review. It would be the ideal time for the Government to extend the boundaries of the National Park eastwards, beyond the quarry site, to take in the whole tract of limestone landscape through to Exmouth Gulf. We also understand that the Government may acquire some land from pastoral leases that are currently under review. It would be an excellent outcome for the overall management of the area if the Government were able to acquire tracts of significant pastoral land ahead of the 2015 deadline and have it all incorporated in the National Park. The new boundaries and Management Plan for the National Park is expected to go out to the public for comment by August of 2004. Keep an eye out for this and get involved in assisting to protect Cape Range.

Additionally, there is now a formal process occurring regarding the plans to nominate the Cape Range for World Heritage Status. We understand that the State Government is working towards a deadline of December 2004 for completing the documentation and securing agreement with all the key stakeholders. The ASF, and the WA Speleological Groups, hope to be involved in this process and will be advocating that the Cape Range is a significant karst system that deserves World Heritage care and recognition. ■



Examples of karst in the Cape Range region.

"The Coalition Against the Filling"

In the 1960s Anticline Cave at Wellington (about 5 hours drive from Sydney, NSW) was buried to make more space for caravan park development. The cave is developed on a beautiful anticline. Its entrance descends almost immediately to a calcite covered lake, but the doline and lake have been polluted with rubbish and debris

In the 1980s speleologists, with the aid of a Wellington Council long reach digger and an 1895 survey by Oliver Trickett, excavated and exposed the entrance to the cave. The fenced doline has occupied the centre of the caravan park for about 15 years with not much done to it.

Recently the new Wellington Caves Manager, found an associate with a digger to bench the sides of the doline and excavate the rubbish.

Some members of the Wellington Council are keen to see the cave filled in, being worried about possible costly development programs. At yesterdays Wellington Caves advisory meeting, feisty debate saw the cave rescued from burial by only a few votes. At least for the time being.

To secure the cave and establish it as a valued item of cultural heritage we need manpower and womanpower to restore the cave.

We need to remove a number of tons of debris that has slid into the entrance, remove rubbish from within the lake (getting wet time) and excavate and trace an historic staircase.

On the 13th and 14th of November a long reach digger will mysteriously be operating very near the entrance of the cave. The driver apparently likes to drink beer after a days work. (Bring beer and meat/veges for a barbeque)

We need 50 or so people to join scheduled workgroups to move debris from inside the cave (about 6-10 metres distance) to where a digger could, if it were so inclined, remove the material to an equally mysterious skip.

There is some potential to discover more cave. It is common knowledge in the district that when the cave was buried there was a robbery at the local golf club and many cases of whiskey went missing. The locals believe that the whiskey was hidden somewhere in the cave and has to date not been found. I have found many empty bottles in the cave indicating that the whiskey cases are not far away!

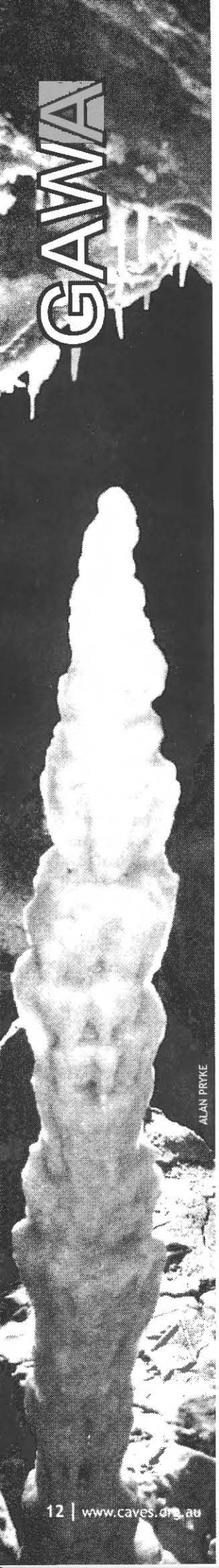
If you can come on this weekend it will be a lot of fun but more importantly will help to save the cave. I also need a few trip leaders to help manage the people. They have to go through an Occupational Health and Safety induction so as to be covered by Wellington's volunteer insurance.

Please send me an email and let me know if you can come. Let me know if you will camp or will need a cabin booking and I'll try to reserve appropriate accommodation

Keir Vaughan-Taylor
[redacted]

Keir standing near the lake in Anticline cave.

It's amazing what a case of beer can do! Anticline cave entrance in caravan park. Note how close the pole is to the entrance!



Report on the Joint Workshop between Speleological Federation (ASF)

Background:

As a speleologist, undertaking postgraduate studies in Natural Resource Management, (specifically Karst Management), I am interested in community education regarding the natural environment. I have attended several of Greening Australia (WA) Professional Development (P.D.) "A Sense of Place" Workshops for teachers and community educators. I was impressed by the style and quality of workshop topics and the information presented. In my role as an ASF Conservation Commission – Co-convenor (WA), I have been involved in a number of community events and displays – promoting karst and speleology. I felt that there was a need for a workshop to educate W.A. teachers, educators and the public as a whole about the nature and importance of karst systems in WA. I saw an opportunity for a partnership between two organizations with similar aims and objectives.

The WA Conservation Committee saw the proposal as an initiative that would assist in our goals of public education about karst systems in WA. The proposal was discussed with a Greening Australia (WA) representative who decided to attend the ASF Speleoseminar on "SUBTERRANEAN BIODIVERSITY & THREATENED FAUNA!" which was held in September 2003. The proposal was then discussed with the ASF Executive, who gave support to the project in October 2003. In December 2003, there was an official meeting between two Greening Australia (WA) reps and myself – to discuss the proposal further and set some plans in motion. After this meeting, the Greening Australia (WA) Environmental Education Officer & myself undertook a "recce" trip to examine possible sites for the field trip. The workshop was then proposed for 11 September 2004. The proposal was tabled at the January 2004 ASF Council Meeting where ASF representatives gave the initiative the ASF support.

Topic – Karst Systems & Biodiversity

The theme was planned to be "karst systems" and issues such as biodiversity, geology, hydrology, biology and management issues would also be discussed.

Aim – The proposed workshop!!

The proposed workshop was planned to occur in the Perth, W.A. area. Local speleologists and environmental educators would be involved in preparing and presenting several sessions on karst systems. The day was planned to be interactive with several site visits.

How this would meet each group's objectives:

The Greening Australia (WA) and the ASF have a similar vision: The environmental and social objectives of both organisations would be incorporated in this proposal. It would be an excellent opportunity for both groups to work together

Conference group.

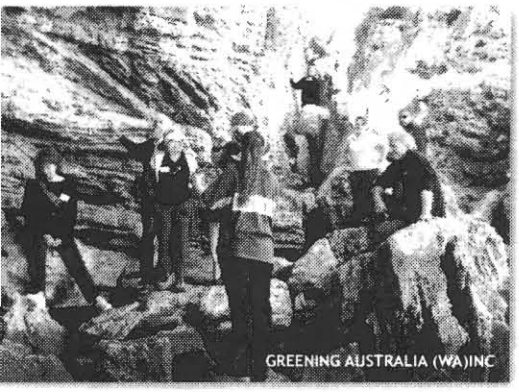
on raising the local communities understanding, knowledge and awareness of the karst system of the Swan Coastal Plain. The karst system to the north of Perth is impacted by a number of factors and it is important that the community is educated about this important ecosystem that exists and that also needs protecting and better management.

For example, Greening Australia (WA) is dedicated to "working with the community in native vegetation management to protect and restore the health, diversity and productivity of the unique Australian Landscapes". As speleologists, we know that "Karst" is one of WA's unique Australian Landscapes. An understanding of this special local environment can assist those who have responsibilities for managing this environment, who wish to protect the environment or who utilize the resource for recreation or educational purposes. Although "caves" are underground, they are part of the environment and the local ecosystem. However caves are only a small part of this system. It is important that the WA community is aware of the importance of the local karst system and the connections between the surface and the subsurface environment. Issues in the surface environment (land clearing, vegetation, water abstraction, development, visitation) can have huge impacts on the subsurface. The hydrology of this karst area is also significant and needs better understanding. Greening Australia (WA) also have a commitment to conserving biodiversity in the natural environment. There is a large amount of biodiversity in karst areas and this particular karst area also has a special vegetation community and some interesting and also threatened biota.

Initially, the workshop will be aimed at Teachers & Environmental educators (as are most Greening Australia (WA) workshops). It would be excellent if there was a focus on those individuals who particularly live, work or recreate in the north of Perth area. However, it is important that anyone interested in learning about this unique environment has the capacity to learn about it!!

The Greening Australia (WA) were "very excited" and enthusiastic about this joint workshop proposal. They saw the proposal as an important initiative and were very pleased to support the proposed workshop. It is excellent that Greening Australia (WA) and the ASF partnered to undertake this important role of

Greening Australia W.A. (GAWA) and the Australian



Jay Anderson presenting to Karst PD participants at Blackwall Reach 11.09.04

educating the local WA community about an important local issue and part of the Australian environment. This is not only a great partnership for both organisations but an opportunity to raise the profile of the ASF within the community as an environmental organisation. This is one of many projects that the ASF can (and should) be involved in and I hope that other ASF members can see visions and opportunities in their local areas!!

The workshop "Subterranean Safari – Exploring karst systems of the Swan Coastal Plain":

The day was co-facilitated by Lyndsay Tonner (Greening Australia (WA) Environmental Education Officer) and Jay Anderson (ASF). The group met early on a beautiful Saturday morning (after a week of rain) at the Point Walter Golf Course Conference Room. All of the participants received an information pack with handouts, readings and important information on the workshop. The first presentation was by Jay Anderson and set the scene for the day – introducing karst terminology and areas of importance in relation to karst systems on the Swan Coastal Plain. The second presentation was by Lex Bastian, who outlined the area's significance in terms of its geology.

The group then left the "classroom" and headed "on-site" for some "hands-on" karst interpretation. The group traveled by bus to several sites during an "Action-packed" day!! During the day, ASF members, Lex Bastian and Rob Susac, assisted in numerous "on-site" discussions and answering of participant's questions.

Areas visited for the "on-site" field trips:

Blackwall Reach – Limestone cliffs along the river near Fremantle & Point Walter. Discussion of Karst features, Vegetation associations and Geomorphology.

Kings Park – Karst features and hydrology. Some good examples of solution pipes & cross-section of limestone. Short talk by Rob Susac on solution pipes and the site features. Participants also discussed hydrology and observed a spring.

Carabooda area – Impact of development on Karst systems, subsidence & vegetation associations. An extra site visit to "One Tree Hill" to discuss the geology further.

Yanchep National Park – reiterating the interconnectiveness, an 'in-cave' trip and discussion on biodiversity. Examining and discussing, surface karst features, hydrology, subsurface karst features, speleogenesis & biospeleology. This included a second observation of a spring.

At Yanchep National Park the group had planned to split in two and rotate through the two sites, however, due to a reduction of group numbers on the day, the group stayed together and visited each site as a whole group. The "in-cave" presentation was given by Eve Taylor, CALM staff member and local speleologist (ASF), on biospeleology and hydrology. This visit was co-facilitated by Lex Bastian who pointed out aspects of geology and speleogenesis. The group then had a surface walk through "Boomerang Gorge" and discussed the surface karst features, area's hydrology and vegetation associations. The group then went to the Gloucester Lodge Museum to view a cross-section of the area's geology and a cave model. Other displays and interpretative forms were observed at the Museum. After the day's debrief, the group completed evaluation forms, debriefed and relaxed on the drive back to the city and the carpark!

Special thanks to:

Greening Australia (WA) for supporting the joint workshop and for their financial support to allow the workshop to be offered to participants at an extremely low price.

Yanchep National Park for supporting the workshop and assisting in reducing the group costs.

Eve Taylor, CALM staff member and local speleologist (ASF) for presenting the in-cave tour at Yanchep

Kate DeBruin and the City of Wanneroo for their support in opening the Gloucester Lodge Museum to enable the workshop participants to utilise the display and interpretation facilities.

The ASF members who gave of their time to prepare presentations and present for the workshop.

Some of the Participant's comments:

What was the most valuable aspect of the workshop?

The presentation of material by people with personal experience and commitment to the environment and caving.

Expertise of presenters and their willingness to answer questions.

Understanding the connectedness.

Tremendously interesting – perfect walks/stops/discussions ratio. No stress!

Actually getting out and seeing the features.

Visiting actual sites & having very knowledgeable people imparting information.

Other Comments:

A very full day – I learnt a lot.

No weaknesses from my point of view.

It was all great!

Thanks so much for a great day.

A really enjoyable day, which flew by.

Thank you for an enjoyable and valuable PD.

You have done a fantastic job thank you!

A most enjoyable workshop.

Thank you Lyndsay, Jay, Lex and Rob for an excellent day.

Future Vision:

Given the success of this workshop, it would be excellent to offer this workshop in 2005 and beyond. As this workshop was aimed at Teachers and community members, it would be excellent if there was a focus on those teachers and land management professionals who lived, worked or recreated in the northern karst areas. The goal for the future would be to expand the "vision" to offer similar workshops to those individuals or groups who have land management and planning/development responsibilities. Additionally, it would be excellent to be able to expand the workshop to occur as a special workshop in other karst areas – for example – community workshops on karst & associated karst issues in a number of karst areas of W.A.

Report by Jay Anderson
A.S.F. Conservation Commission
– Co-convenor W.A.

Life begins at 40!

(A brief history of ISS)

Adam Peters
ISS President, 2003

The Illawarra Speleological Society as we know it started from modest beginnings 40 years ago back in April 1963. An inaugural meeting was held in February but the club didn't really start operating at full capacity until April when the first board of members was elected, the constitution was drafted and the first program penned. But before we go into that, let's rewind the clock back to the year 1944 when a group of enthusiasts from the area gathered together and started what we now enjoy. The Wollongong Speleological and Expeditionary group as it was then known however only lasted until 1959 when due to a lull of new discoveries and a lack of interested people, the club folded.

Jump forward a few years, and as new discoveries were coming to light in the early 60's more people decided they wanted to be a part of this underground phenomenon. So that brings our time machine moderately through the 1960's, where under Bill Wilton's presidential guidance and with the help of a dedicated committee, the ISS as it is now was formed. The first Newsletter was printed during the inaugural year and a logo was drawn up and slowly refined over the years. We joined ASF, rented a post Box as well in the first year and membership topped 25 keen speleos.

By the end of 1963, 11 caves were visited and by the 10 year anniversary weekend held at Bungonia in April 1973, 97 trips were recorded with Bendethera and Bungonia being the areas most visited in the first 10 years of the club, with 30 and 16 times visited respectively. Lots of work was done in the Bendethera area since Main Cave (BD1) was relocated by our own Lloyd Robinson in October 1960 and by 1962, even before ISS was formed a log book was placed at the entrance of BD1. In ISS's inaugural year work commenced on the efflux (BD2) and all through the early sixties more caves were being rediscovered. Later in the decade a 240v DC generator was bought in to assist in work on the efflux but it didn't work reliably until 1970 and was removed from Bendethera in 1972, finding a home among the Opals of Lightning Ridge. The generator however came to good use in its time as much progress was made on the digging of the efflux and Main cave was lit up by photoflood for the first time. The work of the early seventies was mostly centred around tagging the known caves in the area until restricted access from the land holder and developments in other caving areas, saw ISS lose interest in Bendethera for a time.

Come the second decade and with a push for membership the Illawarra Speleological Society was going from strength to strength. With the focus now shifted away from Bendethera work began on the Gunbarrel Aven project in Wyanbene. Many trips were made to WY1, sometimes on consecutive weekends to undertake the "floating camera project". With the aid of a Helium balloon and cotton thread, the aven height was measured to 108.8 metres in June 1973, before the candle attached to the balloon burnt through the string bringing the lot hurriedly back to earth. Then in 1975, the Diprotodon was put to use and an RDF transmitter was set up and a surface signal found and marked above the Gunbarrel. In June of that same year the floating camera project was started with the aim being to photograph the upper reaches of the Aven. The equipment was modified over the years experimenting with different flash units and camera mounts etc. With still much to explore, a cross draught was found in '76 in the upper reaches of the aven and the lifting medium was changed from Helium to Hydrogen with successes in 1977 providing a stronger lift. A movie film was made in 1978 and WIN 4 television did a piece on Scouts and Caving led by our club. An outside group lead by the legendary Alan Warild attempted a climb of the Aven reaching approximately 50 metres until rain and fog inside the aven proved too risky to continue. Strain gauges were installed in November 1978 to check on rock movements with varying results. After much exploring in WY1 the cross draught could not be found, but every inch of the cave was more or less photographed.


JOE SYDNEY

Lloyd Robinson introducing Armstrong Osborne — guest speaker at the ISS 40th.

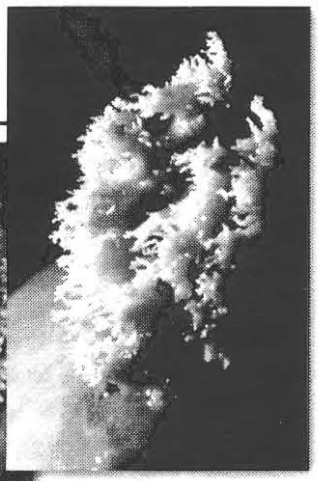
The '70s proved to be a very active time for ISS with members caving in Tasmania, the Kimberley and throughout NSW. Lots of trips were made to Bungonia, Cleitmore, Cliefden and the odd trip was made to Tuglow to undertake some formation cleaning. In fact we were so busy as a club that 16 trips were recorded in 1976 – that's not to mention all the ones that may not have even been recorded! The first Kimberley trip was run in 1977 and ISS was quite active up there until 1993, sometimes running trips on consecutive years.

Come the 80's and by our 20th year in 1983 ISS was still visiting the Kimberley regularly and the Wyanbene camera project was still in operation, until in 1985 when ISS suffered a membership decline which in conjunction with potential litigation fears, ISS was put on hold in 1987. Needless to say not much caving was done between 1985 and 1987. The club was eventually restarted in the early 1990s and Bendethera was finally revisited for the first time in Easter 1993. In 1994 the BD1 survey began by ISS and GPS locations of caves was started. Much work was done all through the nineties surveying and tagging of the known caves whilst still searching for the long lost ones as well. In 1999 ISS placed a second visitors book at the entrance to Main cave and have recorded 1911 people visiting the cave to September 2002. Recently ISS has started going to the Nullarbor Karst area with the first trip being run in 1999. Wyanbene was visited and the usual trips to the other NSW Karst areas were taking place. Trips to Cliefden, Walli, Bungonia, Wee-Jasper, Abercrombie, Tuglow and Jenolan just to name a few. Bendethera of course and other tropical karst areas were visited and as the club started to get back up to speed, Australia's Biggest Corporate collapse was to leave ASF and subsequently ISS without insurance. The club ceased function for about 6 months until all the insurance issues were sorted out with much thanks to the ASF board at the time, and recorded our 40th year in April 2003.

Our future for the short term looks solid as many more trips to Bendethera are programmed and another Nullarbor trip, the 4th since 1999 is on the drawing board for 2005. Although recently we have become a motley bunch of armchair cavers, nowhere near topping the record of 1976 for caves visited, I hope and am confident we as a club can continue on and through to our 50th year anniversary and many more after that. ■

A Tropical Phenomenon?

Norman Poulter OAM.
Speleological Research
Group Western Australia Inc.



Following the 22nd ASF Conference in Rockhampton in early 1999, I was fortunate enough to be taken to "The Cave With The Thing That Went Thump" (E-5), a cave known more for its name than anything it contained. Just inside, I encountered a most unusual stalagmite decoration. It was not so much the stalagmite itself which was only about 300mm high which attracted my attention, rather the unique calcite "growth" at the top. The stalagmite was fed by quite rapid dripping just off the centreline of the decoration which had created an intricate "boxwork" pattern of micro-heligmites. There was much speculation at the time, as to what dynamics led to the formation of this incredible feature.

A few days later, I was back to photograph the feature in company with Angus Macoun (RSS), Mary McCabe, Dianne Vavryn and Nathan Berrill (CQSS). Several hours and rolls of film later, we struggled back through mosquito-infested foliage and encroaching darkness, to the vehicles. I was quite pleased with the results of some of the photographs. Angus was not so lucky, he had been using extension rings and suffered severe splashing on his lens whereas I had been using a bellows and bellows lens from a "stand-off" position, well out of the splash range.

During a trip to the Kimberley Ranges earlier this year, I was on a short trip (arranged for us by John Cugley (WASG)) to caves of the Ningbing Range, just north of Kununurra (I had visited the region twice before). The last cave visited was Nice Cave (6KNI-50), so named by the husband and wife team who discovered it, finding it was "nice" to get inside from the oppressive heat outside – the mere fact that the cave ultimately revealed nice decoration too, was a pleasant bonus.

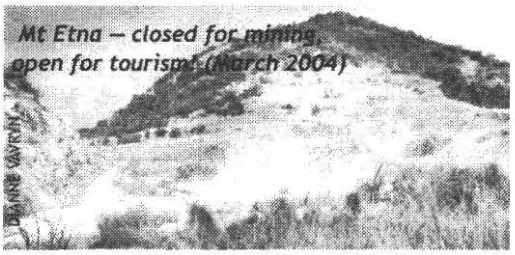
Anyway, to cut a long story short, while photographing some of the cave's charms, I came across a stubby stalagmite with a striking similarity to the top of the stalagmite of "The Cave With The Thing That Went Thump". Although slightly further from the entrance and much lower to the ground than the 4E-5 feature, it was still forming under much the same circumstances i.e. rapid dripping.

Just how does it form? Is this type of decoration unique to the tropical regions or can it form under the same rapid dripping conditions anywhere in Australia – or the world for that matter?

I would like to close with a plug for East Kimberley caving. John Cugley could do with some help documenting the caves in this remote corner of Australia where the discovery of new and significant caves is virtually guaranteed – three were found during a morning's walk on our weekend jaunt during May. In some respects, the term "remote" is a bit of a misnomer, the Ningbing Range lies within 100km of Kununurra, the equally spectacular Jeremiah Hills are even closer to town – it's just that Kununurra is an awful long way from anywhere else. John can be contacted at PO Box 1845 Kununurra 6743. Winter is the most comfortable time to visit. ■

DOWN UNDER ALL OVER — Club Mutterings!

Update on Mt Etna and Cammoo by Peter Berrill, CQSS



Mt Etna – closed for mining, open for tourism (March 2004)

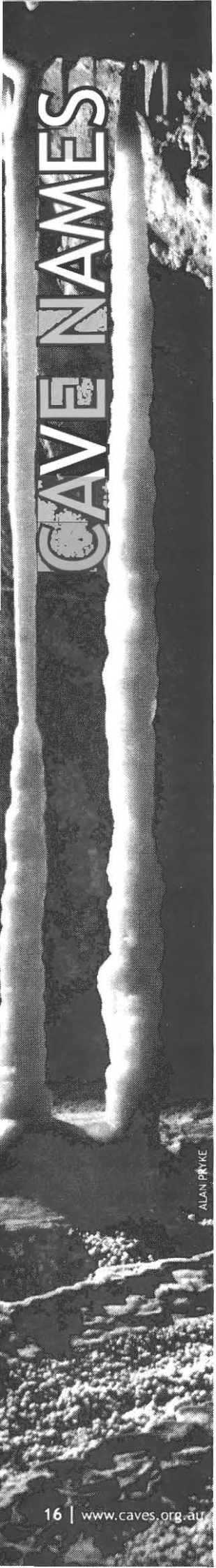
Very little or no caving happening but we are still active on the political scene. One off our "stalwart members " Clive Kavanagh, has left town, (rats abandoning the sinking ship) has left the Country and now is living in the South of France.

As a member of the Mt Etna Caves National Park Advisory Committee, established as a prerequisite by the Department of the Environment and Heritage as part of the grant for the Cammoo acquisition, we are still fighting Qld Parks and Wildlife Service (QPWS) to keep to the agreed contract. At the most recent meeting in September a letter was tabled from the ASF Executive supporting CQSS and the agreed contract, encouraging DEH to be more assertive in relation to the contract. DEH attended the September meeting and stated quite clearly their discontent with QPWS in relation to a particular part of the contract. However I DEH recognized by NHT the political changes since the grant, especially in the area of Public Liability (here we go again). The meeting decided on a strategy to assist QPWS involving DEH, QPWS, CQSS and ASF.

What is very frustrating is the fact that we have spent 30 years fighting to save the caves from mining and now we have to continue fighting QPWS to manage the caves appropriately. The Ranger in Charge of Mt. Etna Caves National Park, Cameron James, is no longer with us and has been replaced.

The Queensland Museum studies of the Fossils of Mt. Etna are in full swing with Mt Etna being a party to a $2,000,000 grant over three years which includes Etna, Murgon, Riversleigh and other Karst areas in Qld. CQSS is heavily involved especially in the area of expertise guiding. Over the next few years there will be a number of funded field trips to these areas. (CQSS membership for the next few years will provide good return for membership fees. Our address is on the website).

Earlier this year, 13th March 2004, all quarrying on Mt Etna ceased and the mine was permanently closed. Rehabilitation continues and will do-so for many years into the future. Recently, staff was doubled to cater for the increase in the rehabilitation especially in the western quarry where they were mining. A paper has been prepared by the company undertaking the on-ground works and I have made arrangements for it to be available for the conference if someone can present it. I haven't seen it yet but I believe that it is quite comprehensive.



A plea for explanations of new cave names

Greg Middleton has been caving for nearly 40 years but now more commonly frequents lava tubes or armchairs. He is Australasian coordinator for IUS' Speleological Abstracts.

People have a range of attitudes to cave names. Some are content to assign a number to a new entrance and leave it at that (particularly in areas like the Nullarbor where there are lots of features, many of them not significant – at least initially). Probably they take the attitude: if a name is needed, it happens – and that's fair enough.

Some people give a name if a cave has some outstanding feature (e.g. if it contains water it might get 'Water Cave' or a variant – Australia has around 40 cave names containing 'water' and a further 30 which include 'river') or if a memorable event occurred during initial exploration or survey (The Cave with the Thing that Went Thump 4E5 would have to be a classic in this category).

Sometimes caves are associated with eminent people (Mitchells, for example, have caves named after them at Wellington, NSW, no less than four in the Lower SE of SA and there's Mitchell River Cave in FNQ) or events (the Jubilee Cave at Jenolan celebrates 60 years of a certain long-serving British monarch – and there's another at Chillagoe). There are at least 5 Easter Caves (6 if you include the alternative name of Devils Coach House at Jenolan). A Christmas Pot at Chillagoe and one at Cooleman Plain might indicate that isn't as popular a day for caving as Easter.

Some people assign a name at the drop of a hat (perhaps that's why there's an Ians Hat Cave at Murrindal), some think them over and discuss them very earnestly before deciding (I remember it took us days and lengthy consultations with thesauri before we came up with Quetzalcoatl Conduit for a very damp pipe-like cave at Precipitous Bluff (7PB3) (Middleton & Montgomery 1973) – and then the official Nomenclature Board, with the imagination of a damp sock, tried to reduce it to Quetzalcoatl Cave.)

Some people must think names are important – or at least interesting. For example, Ross Ellis did a count to discover the most common names (Ellis 1996). The 20 words most commonly occurring in cave names were, at that time, in order (discounting the definite article): Main, Black, Little, Mount, Bone, Devils, Green, River, Dead [!], North, Water, West, Old, New, Big, Bat, Deep, Camp, Horse and Lake. Then, in 1999, someone writing under the *nom de plume* of Prof. Gordon G. Grimsley asked "Please, not another ...Main Cave...!" – a plea for more imaginative cave names ("Grimsley" 1999). Classics like TCWTTTWT were given as examples, plus some even more obscure ones.

Some groups used to go through formal procedures before settling on names. It was the practice in the early years of the Tasmanian Caverneering Club for the Committee to approve names (even for features in caves) and then submit them to general meetings for adoption. This no doubt ensured that no "improper" or "frivolous" names were applied, and it did mean that new names were recorded – but it didn't ensure that the reason for the names – why they were proposed – was recorded. The earliest of these recorded is "The Little Dipper"7JF108 (Anon. 1947) – but does anybody know why it was so named? At the same time approval was advised for Mystery Creek Cave, Bradley Chesterman Cave, Spider Cave and Exit Cave at Ida Bay, Erebus at Hastings and Soda Creek Cave at Mole Creek. In none of these cases was any hint given as to the reason for the names. Unless the reasons were recorded elsewhere, or somebody can remember the reasons, these bits of history are lost to us forever.

At the risk of being selective, may I cite a couple of examples where good names have been assigned and published, but the reader is left totally unaware of the significance of the name. In the *Chillagoe Caving Club Annual Report* for 2003 there is a "summary" report of a trip to the Mitchell-Palmer area in Sep-Oct. 2002 (Cummins et al 2003). Among new caves reported and named are Its Not Looks Good, Close Call, Termite Crawl, Doubt Cave, Jam Drops, Looks Good, Lots to Offer, Big Scary Hole, Snails Rentals, Born Twice and, from Chillagoe, Chunder Down Under. An interesting collection one might feel (though the ASF naming guidelines would be unlikely to endorse the last!) and they hint at some memorable events – but as there is are no details of the trip the reader has no way to do more than guess at their origins. At first glance Its Not Looks Good (MP300) gives the impression of poor grammar (shouldn't it be "It Doesn't Look Good"?), until one sees there is another cave called Looks Good (MP314). OK, so we can assume they were looking for LG but didn't find it at MP300 (the fact that the earlier discovered cave got a higher number is presumably just one of those things that happens when one is cave numbering). An email to Alan Cummins brought forth the full story:

We had found "Looks Good" one year ([June 99)], but had no tags so drew a sketch and description. Three years later (Sep. 02) we returned with tags. From the description we searched for "Looks Good" & thought we found it so gave Andrew the sketch & told him to "check it out". Half an hour latter he reported that it fitted the description so we tagged the entrance. We then proceeded to look for other caves nearby with directions from "Looks Good". They were not there!! Eventually we found the correct "Looks Good" & then the other caves! Entrances were only 10 to 20 metres apart but in rugged overgrown terrain. We then questioned Andrew & found he only went in to the entrance, it looked O.K. so he lay down for a 30 min nap!!! Since it was now tagged and a new cave we changed numbers – and hence "Its Not Looks Good" (Alan Cummins pers. comm.)

As to the others, we may never know as there is no narrative report (even in CCC's archives).

ISS went to the Nullarbor in April 99; the report (Dicker & Kershaw 2003) includes a photo showing

three guys in a cave and one has a fair sized roo by the tail! The text just says "... the others (went) to a ladder climb with better prospects – 6N1607, later named Skippy. The story of Skippy will be told around many future campfires and probably be exaggerated too! Maybe the couple of photos [there seems to be only one] will add to the mystery." It seems the authors don't want to spell out why the cave was dubbed "Skippy". (Fortunately, a subsequent poem by Anthony Pezzutto gives a few more details.) While I would prefer events – especially unusual ones that lead to the naming of a significant cave – to be spelt out, I accept the right of trip reporters to deliberately leave us in the dark if they want to. At least giving some clues gives us something to build our own explanation on.

So, to my request: Please, when you assign a name to a cave, record it in the trip report *and say why the name was chosen* (if it isn't absolutely obvious). (No one needs to explain 'Bat Cave' – what they should have to explain is how they couldn't think up something a bit more original!) It's also good to record who thought up the name and when!

"But don't the ASF *Guidelines for Cave Names* deal with this?" I hear anyone who's read this far ask. Well, no. I did try to cover this aspect by suggesting (Middleton 1978) that the original Guideline 1 (as proposed by Goede 1978) should read something like:

Names should only be used or published where the location and nature of the feature *(and, preferably some explanation of the reason for, or origin of, the name)* are accurately recorded in society records. (Emphasis added.)

The words in brackets were, sadly, totally ignored in the final draft, and were not addressed elsewhere in the Guidelines – so they contain no suggestion whatsoever of the desirability of recording why a particular name was chosen. (Perhaps this hasn't made much difference as it's unlikely most of the people assigning cave names today have read the Guidelines!)

My interest in the origins of cave names is such that, since about 1992 I have been building a database of names and, where I can discover them, facts like when a name was assigned, by whom and what was said at the time (or, failing that, subsequently) about how the name came to be selected. I make no judgements about whether names are good, bad or otherwise, I just try to document how they came to be. So far I have 5,016 names in the database (relating to a smaller number of caves as some caves have three or more names) but explanations for only about 1,125 of these. I have a long way to go – and people keep inventing new names every week! That's fine, the more imaginative, the better – but please let us all know who, when and why – or at least give a few clues!

There are instances where people have recognised the lack of records of name origins and have sought to rectify it. Malcolm East's (1991) "Cape Range Caves – names and meanings" is a very good example. Few areas have been treated so carefully. In 1993 Peter Horne's *Lower South East Cave Reference Book* (Horne 1993) fulfilled a similar role for that part of South Australia, though not as systematically in relation to names.

I'd prefer that such retrospective attempts to record the information about names were not necessary – it just requires anyone who dreams up a new cave name to report how the name came about (and preferably who thought it up and when).

If anyone reading this is moved to want to contribute some explanations for cave names they know about, please let me know – preferably with published references. I'll be happy to provide them with the explanations I've documented so far.

e-mail: ozspeleo@optusnet.com.au

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Postscript!

Interpreting names is not unique just too caving, naming and interpreting geographical locations is equally challenging. For two weeks during October (2004), a United Nations backed course held at Bathurst-NSW, will host a number of Asia-Pacific region countries. The aim is to teach people 'toponymy', the study of a region's placenames.

Interestingly, there are many stories surrounding unusual place names around Australia – including caves. There is a hill near Coolah, in western NSW and a surveyor once camped near it. He shared his camp with a dog, and a bug and a ram – so he called it 'Dogandabugandaram Hill'!

Do you know of any other interesting place\cave names!

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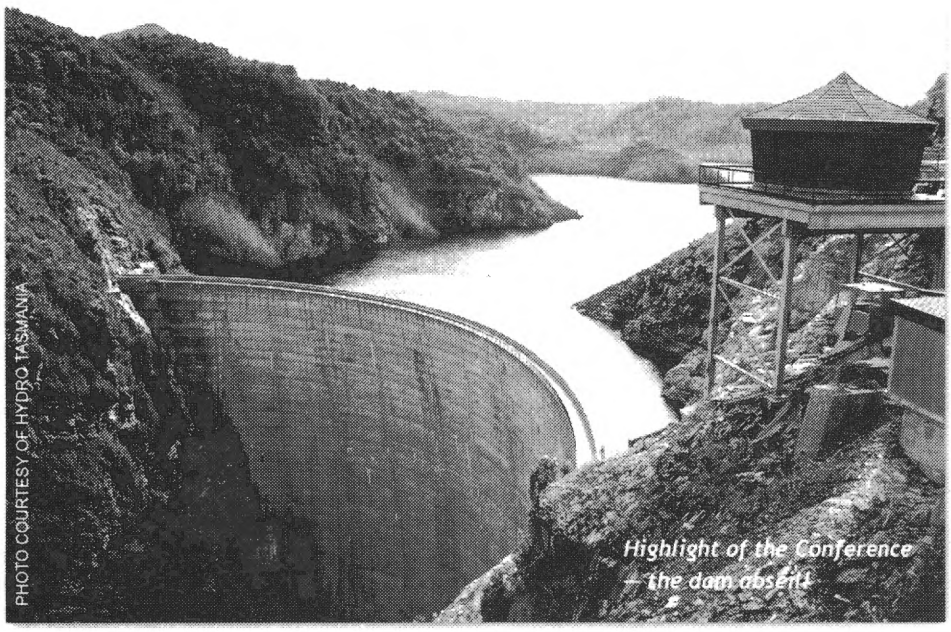

Registration is running hot for CaveMania. Hopefully people have booked their travel arrangements as Tasmania is becoming an ever more popular destination and getting on and off the island is becoming increasingly difficult to arrange. Accommodation at Far South Wilderness Inc. is almost booked out. Hopefully the latecomers will be able to find accommodation elsewhere. There is a list of alternative accommodation in the Dover area on the CaveMania website. Already all the on-site vans at the Dover Caravan park are booked out.

Presentation sessions and papers will be presented at the Dover District High School. For the opening of the conference we have Lieutenant-Governor Mr Justice W.J.E. Cox in his capacity as Patron of the Far South Community followed by the keynote address by Alan Warild – world renown international caver. Al is going to show slides of his recent expeditions and give us some sort of update about caving on the world scene.

Following the afternoon session of papers we have the opening of the 4th International Speleological Art Exhibition by the Minister for Economic Development and the Arts, Ms Lara Giddings MHA.

There has been a lot of interest in the fieldtrips on Wednesday 5th January to Mystery Creek Cave, King George V and Newdegate (Hastings Tourist) Cave, supported by the Hastings Experience. There may even be a few gutsier trips than this on offer as there has been quite a deal of interest expressed in visits to Exit Cave. Unfortunately the plan to travel to the caves via tall ship (an idea which was proposed at the Bunbury conference) will not be possible.

The Post-Conference Fieldtrips have been supported by The Tasmanian Government under its Events Tasmania Programme and these have been advertised on the CaveMania Website. For the fieldtrips in the Ida Bay area, we have arranged accommodation at the Southport Community Hall, for the week following the conference. We hope to secure similar accommodation for the Maydena fieldtrips in the week after that. Accommodation options at Mole Creek can be found on the website. Those cavers wishing to participate in these fieldtrips need to contact us so that we have some idea of the demand.

During the summer, to coincide with CaveMania, the Tasmanian Museum and Art Gallery is running a small exhibition of cave related materials.

We hope that with Tasmania's abundance of caves we can have a conference with a real emphasis on caving.

See you Downunder in Dover!

Conference 1st Timers!

To encourage 1st time conference attendees, CaveMania has reduced the registration fee by up to 50%! Don't miss out on great workshops, presentations, conference trips, art show, great social dinner and more — book now!

[redacted]

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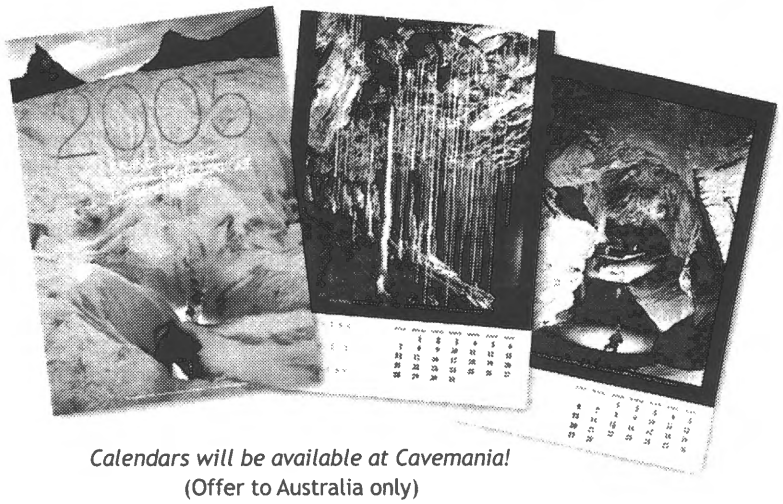


Calendars will be available at Cavemania!
(Offer to Australia only)

The Legends of Hibashi Cave

"Man Survives Deadly Cave Ordeal for Twenty Days"

John Pint

The headline was worthy of a supermarket tabloid. A man had wandered into Ghar Al Hibashi, located deep inside Arabia's Al Buqum lava field. He had battled ferocious wolves and hyenas, breathed poisonous fumes and endured the bites of disease-laden bugs, all this while trapped inside the cave for nearly three weeks. During his ordeal, he had eaten grass, drunk "cave water" and stumbled around in the dark until he surfaced through a hole located 17 kms from the cave entrance. Such a cave appeared worthy of investigation, even if it turned out only one tenth as long as the newspaper claimed.

During the first week of January, 2003, we set out on our quest. All we knew about the cave's location was that it lay somewhere between Ranyah and Turubah ... that meant a mere 130-km stretch of tire-eating lava to check out. "I think I'll sit this one out," Susy had commented, "until you actually FIND the cave... if it's really a cave at all."

For this trip, we had two Land Cruisers, fitted with nearly worthless Dunlop tires – and a large truck (How do you say 'truck' in Arabic, I asked. 'Lori' they replied) big enough to carry several of the pickups SGS usually assigns us.

Ten and a half hours after setting out from Jeddah, we were still nowhere near the cave and the sun was about to set. Since you can't find a black hole in black lava in the dark, we pulled off a nice wide track we had just discovered and began to make camp near the mangled remains of a tanker.

A roar in the dark

As usual, I picked a spot far from the camp to set up my tent, knowing how late the others usually stay up. I found a patch of sand between some lava chunks and thorn bushes and had just finished putting on the rain fly when I heard a very strange sound in the total darkness, somewhere far behind me. It was a long, slow, throaty growl and it made the small hairs on the back of my neck stand straight up. Then I heard it again, this time a lot closer.

I couldn't believe my ears as it sounded exactly like a lion, but there haven't been any lions in western Arabia for thousands of years.

The rumbling growl came again, even closer. Could it be a wolf? There are definitely plenty of wolves in these parts. I edged away from the tent and carefully made my way back to the cars. Without a doubt, there was something weird out there!

I told Mahmoud I thought I had heard a lion and he gave me a very peculiar look. Then he asked everyone to shut up and he heard it too. His eyes bulged and he walked over to the truck and picked up a heavy metal pipe. The whole gang of us now tiptoed behind Mahmoud as he very carefully made his way toward my tent. Suddenly, we saw a movement in the beams of our collective flashlights.

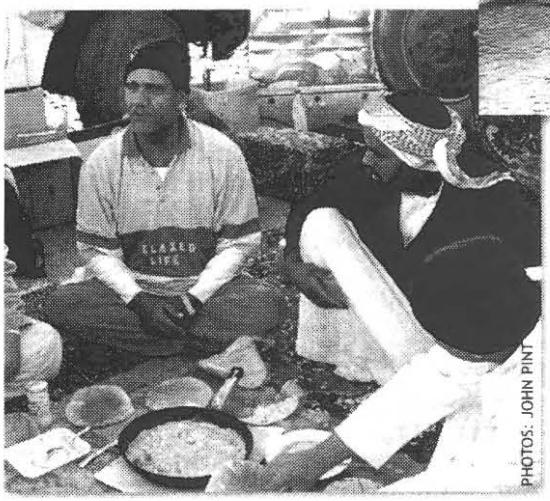
Mahmoud stopped, turned to me and in a low voice, said, "John, there is your lion," pointing towards a camel, whose head could be seen just above a large bush behind the tent.

Three Somalis far from home

We spent a very cold night and the next morning at breakfast, I took one of the cave thermometers out of the watertight box it was stored in. The reading was 5 degrees C and I suspect that during the night it must have been just above zero C, which is 32 degrees F.

In the middle of breakfast, a thin, dark-skinned man suddenly appeared from out of nowhere. Of course, we invited him to sit down and join us. Immediately, two other equally forlorn looking men

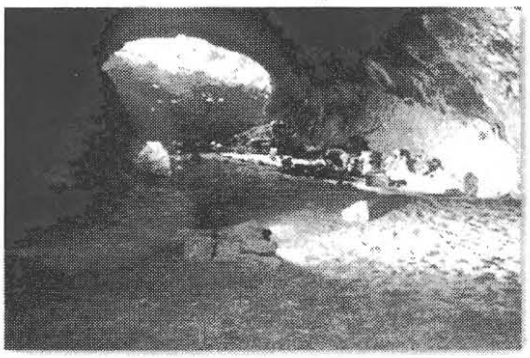
A tasty Afghan Omelette prepared by Abdulwahed Al-Afghani, who really knows how to contribute to "the relaxed life" on a caving trip.

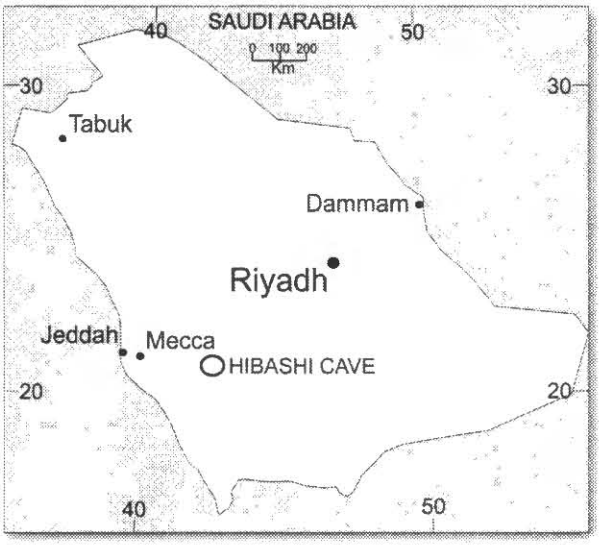


PHOTOS: JOHN PINT

This T-junction was a favorite spot for digging.

Our campsite occupied only a small corner of the huge entrance room.





stepped forth from behind the cars and suddenly our one guest became three. These men could speak enough Arabic to tell us they were Somalis who had walked all the way from Yemen, looking for work. How they had ended up in this desolate spot so far from even a small town, we didn't learn, but they seemed very grateful for the food and drink we gave them.

After breaking camp, we found some local people who gave us a rough idea of how we could find our way to Jebel Hibashi, near whichÑwe assumedÑwe'd find our cave.

Lost in the lava

Noon found us wandering all around Jebel Hibashi, trying unsuccessfully to communicate among our three vehicles using some cheap walkie-talkies we'd bought and hoping one of the tracks in the area would lead to the cave. None did, however, and we finally decided to use our Global Satellite telephone to call people at SGS who might have the GPS location of the cave, which – for reasons we can only surmise – was not given to us even though people from our own organization had visited the cave.

Helas! (French) The person who might have had this vital info was out of town. So, Halas! (Arabic), enough expensive phone calls. After removing rocks stuck between our double set of truck tires, using a metal pipe as if it were a giant toothpick, we rolled on toward whatever our destiny would be.

Amazingly, we drove a few metres to the top of a low rise and from there saw, in the distance, several large white tents, neatly arranged all in a row. Bedus!

As usual, a couple of these astoundingly generous people immediately volunteered to lead us to the cave, which they said was nearby.

After a km or so over typically savage lava-field tracks, we were standing on the edge of a hole nearly 30 m across... and freezing. Yes, a lively wind had risen and it was a relief to jump from rock to rock down into the shelter of a room so large we couldn't make out the other end of it.

Underground Hotel

Because it had a flat floor, plenty of room and a pleasant temperature, Mahmoud declared that here is where we were going to camp. There were a few looks of surprise at this and a few murmurs about the minor problem of transporting our gear (you can't imagine how much stuff we take on these trips) all the way down from the surface. But soon we were busy forming a human conveyor belt.

There was just one slight problem. As so often happens, somebody had decided this cave was a fine place to throw his dead sheep, and there were three bloated carcasses perfuming the air of our new home. Fortunately, there were sandy spots near the sheep, so I decided to abandon the chain gang and bury the bodies. This turned out to be more of a job than I had figured, but in the end it was well worth it as our new home smelled as lovely... well, as lovely as you could ever expect a cave to smell.

Wall to wall carpeting

Which brings me to the subject of the cave floor on which we spread our carpets and tarps. This lava tube, like all the others we've seen in this country has a deep layer of powdery sediment covering the original floor. Now, a dirt floor would not be bad to camp on, but this first room of the cave had obviously been used as an animal corral in the past. Most of us thought goats had lived here, but Abdulrahman, our resident Bedu, declared that the billions of little balls on which we were camping had been produced by sheep, over a long, long period of time, I should guess.

Once we had settled in, the drivers prepared a meal. As usual, chicken kabsa was the only item on the menu, but this time it was lightly spiced with the dust which rose every time anyone took a step on the sheep dung floor. After a few cups of tea, it was time to go have a look around the cave.

We put on our helmets and picked up a Coleman lamp because the great size of the passage facing us – plus the flat floor – suggested this was going to be an easy-walking cave. We also took along a couple of stout sticks because we had spotted the large imprint of an unknown, five-toed animal's paw on the ground.

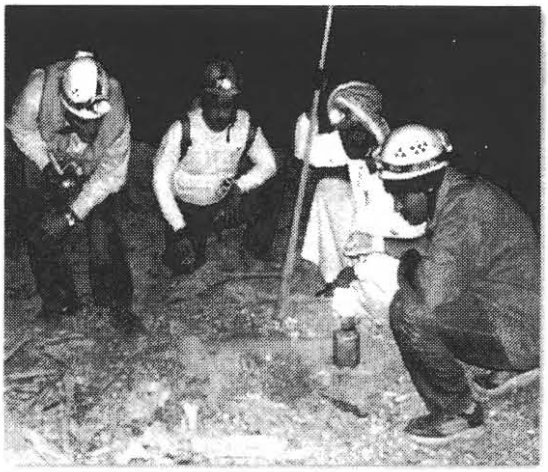
Dribbles and Dirt

The passage we were in had a semi-circular arched ceiling and smooth walls 16 m apart. It felt like we were walking in a man-made tunnel. The floor was dusty dirt which had been blown or washed into the

On the slopes of Jebel Hibashi: no cave and no lorry.

cave during ages. Here and there we saw holes dug presumably by treasure hunters. Obviously the floor was at least a meter thick, but comparing the ceiling arch to the shape of several Icelandic lava tubes where you can see the original floor, I would guess that this Saudi lava tube may hold several meters of dirt, deposited during more than a million years. If pollen is present in this sediment, much could be learned from it about past flora and weather on the Arabian Peninsula. What archaeological treasures lie buried here is anyone's guess.

On close inspection, the side walls revealed runny lava "dribbles" and small lava stalactites. Here and there were found lumpy lava stalagmites, up to 30 cm high. But the most interesting formation of all was a lava channel on the inclined floor of a side passage, with "banks" alongside the deep groove running down the centre of the channel.



Our driver Ashak joined us on the first exploration of the cave and made his own unique contribution to speleo haute couture.

Burnt Cave

A few steps further, the floor suddenly turned to ash. Bones and even rocks lying on this light-grey surface were charred on the bottom but not on top. The burnt area covered a large part of the cave and appears to be a layer of guano that caught fire and smouldered for a long time. Some parts of the ceiling in this area are covered with a shiny, sticky, black "tar" caused by this fire, here and there dotted with tan-coloured stalactites of an equally sticky substance. We had seen several small wood fires on the floors of various passages in this cave, perhaps used for lighting purposes and it may have been one of these that set the guano on fire... but how long ago?

An interesting feature of this cave is a very large, well-shaped dome with the usual high heap of large chunks of breakdown beneath it. We placed a hygrometer and mini-max thermometer in this area and got 48% humidity and a pleasant temperature range of 22-24 degrees Celsius.

The Murdered Maiden

The next day, the three geologists mapped a large part of the cave while I went around taking photos. They got the worst end of this arrangement because three people stir up a lot more dust than one and all of them returned to Jeddah with bad coughs and burning throats. But by being off on my own, I missed the most exciting find of the whole trip. Deep inside the cave, Abdulrahman found a large rock upon which someone had placed two parts of a human skull. Because the cave has had vandal visitors in recent times (thanks to that wildly exaggerated newspaper article) and because the skull parts were no longer in situ, it was decided to remove them from the cave for handing over to the proper authorities. We have already had enough experience with skulls and artifacts vanishing because we left them where we found them.

Carrying our tons of gear up the long slope to the surface was not exactly fun, but the cave had given us shelter and warmth, a fact we were reminded of the moment we were blasted by the cold wind whistling across the stark stretches of Harrat Buqum.

We in the Land Cruisers had only one flat on the way back – a miracle, considering that our tires were paper-thin. The truck fared worse, we learned later. Apparently most of its six tires fell to pieces on the way back after that beating in the lava field and it took the driver days to reach Jeddah.

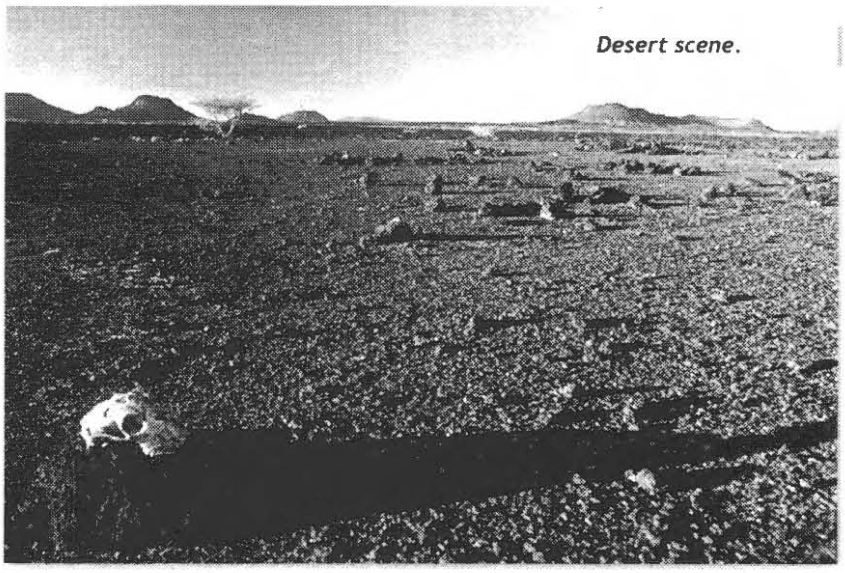
Upon our arrival home, we sent pictures of the skull to various knowledgeable people by email. "It is a human skull," they assured us, "and the teeth indicate it was a young woman 12 to 18 years old ... and didn't you notice that the brainpan has been sliced off?" So it seems this skull tells us a story of foul play. Perhaps carbon dating will tell us just when it took place.

We found neither wolves nor biting bugs nor poisonous fumes nor grass nor seventeen-kilometre passages in Hibashi Cave, but we did find enough other things to start a few legends of our own.

Postscript: Rare Minerals from Hibashi Cave

In 2003 Paolo Forti, former President of the IUS (International Union of Speleology) visited several of Saudi Arabia's limestone caves at the invitation of the Saudi Geological Survey (SGS). Although the primary purpose of the visit was to assist the SGS in evaluating these underground caverns for possible tourist development, Prof Forti was also interested in

Desert scene.



Minerals recorded from Hibashi Cave, Saudi Arabia

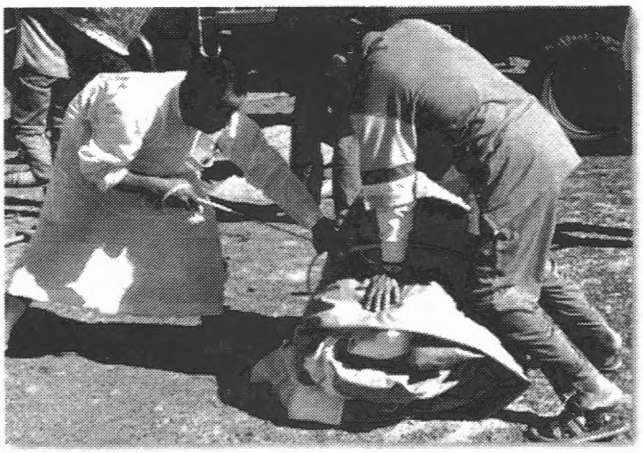
MINERAL	FORMULA	CHARACTERISTICS
1. Anhydrite	$CaSO_4$	Orthorhombic – milky-white small earthy subspherical grains.
2. Aphthitalite	$(K, Na)_3Na(SO_4)_2$	Trigonal – honey yellow to dark brown subspherical grains and/or vitreous fragment mixed with 6 and/or 4. A rare, natural soluble sulphate originally discovered in 1835 at Mt Vesuvius.
3. Arnhemite	$(K,Na)_4Mg_2(P_2O_7) \times 5H_2O$	Hexagonal – soft uncemented white dull material mixed with 13 and 16.
4. Arcanite	$K_2(SO_4)$	Orthorhombic – emi-transparent to lemon yellow vitreous crust, mixed with 9, 13, 15 & 16 or plastic microcrystalline honey yellow small aggregates mixed with 2 & 6.
5. Archerite	$(K, NH_4)H_2PO_4$	Tetragonal – pale gray glassy lustre coralloids mixed with 15 and 16.
6. Biphosphammite	$(NH_4, K) H_2 (PO_4)$	Tetragonal – honey yellow to transparent subspherical grains and/or vitreous crusts or plastic microcrystalline honey yellow to dark brown and black masses with rare thin elongated prismatical crystals. Often mixed with 2, 4, 6 & 18.
7. Calcite	$CaCO_3$	Trigonal – very rare as insulated crystals or aggregates of elongated crystals.
8. Carbonate-hydroxylapatite	$Ca_5(PO_4,CO_3)_3(OH)$	Hexagonal – honey yellow vitreous semi-transparent hard material.
9. Chlorapatite	$Ca_5(PO_4)_3Cl$	Monoclinic – cream white microcrystalline hard material with rare aggregates of small dumpy fibrous prismatic crystals.
10. Halite	NaCl	Cubic – Rare semi-transparent pale blue coralloid grains strictly associated with 9 and 14.
11. Hydroxylapatite	$Ca_5(PO_4)_3(OH)$	Hexagonal – within bone porous to compact fragments partially transformed into 19.
12. Nitre	KNO_3	Orthorhombic – similar and always strictly mixed to 6.
13. Opal-C	$SiO_2 \times nH_2O$	Tetragonal – semi-transparent to pale yellow vitreous globular or coralloid crusts, mixed with 15, 16 and 17.
14. Palygorskite	$(Mg,Al)_2Si_4O_{10}(OH)\cdot 4H_2O$	Monoclinic/Orthorhombic – soft tuft of snow white thin bending fibrous crystals.
15. Pyrocoproite	$(K,Na)_2Mg(P_2O_7)$	Monoclinic – semitransparent to pale grey vitreous globular saccaroidal crusts or pale green elongated pseudo-fibres. Often mixed with 16.
16. Pyrophosphite	$K_2Ca(P_2O_7)$	Monoclinic – colourless to snow-white vitreous saccaroidal crusts. Quite always mixed with 15.
17. Quartz	SiO_2	Trigonal – crust or insulated grains without the characteristic prismatic habit often associated to 13, 15 and 16.
18. Urea	$CO(NH_2)_2$	Tetragonal – small colourless to pale yellow transparent prismatic tabular crystals or radial aggregates.
19. Whitlockite	$Ca_9(Mg,Fe)(PO_4)_6[PO_3(OH)]$	Trigonal – milky white spongy material or small vitreous pinkish crystals over bone fragments.

ARCANITE: First recognised in 1845, its most likely source is bat urine, found in dry bat guano on the floor and forming a thin black coating on parts of the ceiling. Previously recognised in only 5 caves around the world, all in Africa.

PALYGORSKITE: A rare clay, dark, spongy and slimy, rather like wet leather or fungus, also recognised in 3 limestone caves of Saudi Arabia (Surprise, Friendly & B31 Caves). This is the first record of this mineral from a natural cave.

WHITLOCKITE: A rare clay, dark, spongy and slimy, rather like wet leather or fungus, also recorded in 3 limestone caves of Saudi Arabia (Surprise, Friendly & B31 Caves). This is the first record of this mineral from a natural cave.

GLAUBERITE: Was also recorded for the first time in limestone caves in B31, located on the Summan Plateau 250km north of Riyadh.



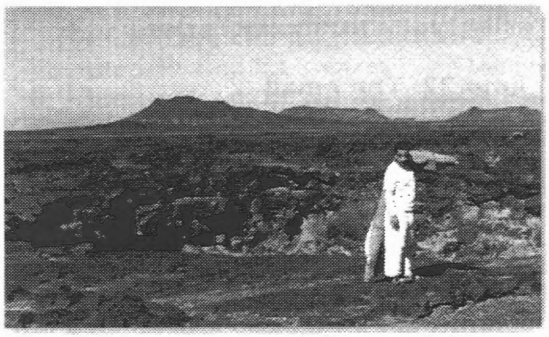
A local tent... definitely not for backpacking!

Much of the gear was wrapped up in a tarp to form a gigantic bundle which was carried to the surface, but not without a few moans and groans.

investigating what kind of secondary minerals might be found in Saudi Arabia's caves.

The following minerals collected from Hibashi Cave were identified using stereoscopic microscope, X-ray powder diffractometer, Gandolfi camera and electron scanning microscope and microprobe.

Some of these minerals have formed from heat from fires burning on the components of bat urine "stalactites" and on dry guano. Hibashi Cave has been placed on the list of the ten most important lava caves in the world in terms of the mineral content of speleothems, thereby being eligible for world-wide recognition as one of the most significant geological sites on the planet. Prof Forti believes that lava caves will prove to be richer in rare minerals than limestone caves.



Acknowledgment and further information

Thanks to John Pint for permission to reproduce this article, first published electronically on www.saudicaves.com. The postscript on cave minerals was edited by permission from the same source. Further information on the Desert Caves Project conducted in conjunction with the Saudi Geological Survey, is available from this excellent website. Also highly recommended is John Pint's recent book published by the Saudi Geological Survey, "Desert Caves of Saudi Arabia" (see Australian Caver 160, p. 25).

NEWS from CPSC

U.S. Consumer Product Safety Commission
Office of Information and Public Affairs
Washington, DC 20207

FOR IMMEDIATE RELEASE
September 21, 2004
Release #04-219
Worldwide Carabiner Recall
Sept 4004

Firm's Hotline: (800) 997-HELI
CPSC Consumer Hotline: (800) 638-2772
CPSC Media Contact: (301) 504-7908

CPSC, Wild Country Ltd. Announce Recall of Helium Carabiners

WASHINGTON, D.C. - The U.S. Consumer Product Safety Commission announces the following recall in voluntary cooperation with the firm below. Consumers should stop using recalled products immediately unless otherwise instructed.

Name of product: Wild Country-brand Helium carabiners used in rock climbing

Units: About 1,000

Manufacturer: DMM Engineering, of Gwynedd, U.K.

Supplier: Wild Country Ltd., of Tideswell, Derbyshire, U.K.

Importer: Excalibur Distribution, of Sandy, Utah

Hazard: The carabiner gate may come open under a heavy load, which will significantly reduce the strength of the carabiner. The carabiner could break if the climber falls, posing a risk of serious injury or death to the climber.

Incidents/Injuries: None reported

Description: These are Wild Country brand carabiners sold under the following model names: Helium Dyneema, Helium DYN QD 5 X 13, Helium Clean Wire, and Oxygen-Helium. They are marked with batch codes AAA, AAB, AAC, AAD, AAE, and AAF. "Wild Country" and the model name are written on the carabiners.

Sold at: Recreational sports stores nationwide from April 2004 through July 2004 for between $11 and $25.

Manufactured in: United Kingdom

Remedy: Consumer should call the firm for instructions on returning these carabiners. The firm will reimburse shipping expenses and send the consumer a replacement.

Consumer Contact: Call Wild Country toll free at (800) 997- HELI between 9 a.m. and 5 p.m. MT Monday through Friday or visit the firm's Web site at www.wildcountry.co.uk

Are you a budding Mr or Ms Squiggle?

Caves Australia is in need of a freehand cartoon artist to draw the odd graphic. If you can help with the odd cartoon style graphic, please contact the Production Manager:

Joe Sydney
[redacted]

14 Days in Abkhazia

Al continues the saga of exploration in the world's deepest cave from the last chapter in Australian Caver # 161

Al Warild

For months I'd been hearing rumors of this year's forthcoming expedition(s) to Voronia. The Russians and Ukrainians had fallen out. Nobody would tell me why, just that it didn't look good for this year's explorations. Then the news that the Russians were going in July before the Ukrainians... and the Ukrainians didn't know about it. Some cavers I knew suddenly bailed from one trip because the Ukrainians have a better chance of success – and "ethical reasons". Intrigue, scandal & gossip. It all sounded way too messy, and that's before you even consider getting into the country, or going caving.

June 22: The email

Out of the blue I get an email from Jenya in Moscow. "Do you want to come on our expedition to Voronia?" I thought about all the intrigue, scandal and gossip. I gave it a great deal of careful thought. Ten seconds later I replied "Yes, I'll try and get there". I had just under three weeks to get organised. Air tickets, new passport, Russian visa, time off work. Did I REALLY want to go anyway? Perhaps such situations are best avoided.

I picked up my tickets and visa on Monday 12th and left Tuesday 13th.

1. Thursday July 15 Moscow > Sochi (Russia) > Gatiadi (Abkhazia)

"It's amazing something so old can still fly" says Chich as we get off the decrepit Tupolov in Adler airport on Russia's Black Sea coast. This is Russia's only coastal resort area unless you're happy swimming with polar bears. Sort of like Brisvegas Russian style: plenty of bare tummies, sunburn, Hawaiian shirts, beer-guts & Muscovites on holiday everywhere.

The Russians with me (Sklyar, Chich & Igor) haggle for a taxi and we're off to Abkhazia. As a foreigner, I don't get far and they dump me at a cafe by the main road to await my special ride across the border while they continue to just before the first checkpoint. Very few people drive across this border. The queues are enormous. But walking with the correct passport is easy. No matter how often or who I ask, the answer never makes sense. Ex-USSR citizens (except Georgians or anyone with even a Georgian sounding name) can just walk across with a flash of their passport. Foreigners like me are allowed in each country and the countries are on good terms with each other but the border is still officially closed to me. The fat man who I know nothing about, have never seen before and will remember nothing about afterwards arrives, and for a price, we're across in a few minutes. I'm delivered to Vatec's house – our base in Abkhazia.

2. Gatiadi > Orto-Balagan

We wait around for Klim the one rebel Ukrainian, to arrive, then load up the truck and start the five hour

grind along 40 km of unmaintained road and mountain trails to the roadhead at 2000 m. Then a further 200 m climb with our gear in the mist and we have our tents up by nightfall.

Things have gone really well so far. Most of the expedition left Moscow by train on the 8th for the two day trip south and so have been up here for four days or so. Base camp is set up, the cave is rigged to -1200 m, and a lot of the loads are already a long way down the cave. On the negative side, there are plenty more loads still to get down there: four sets of minimal diving gear for the sump, equipment to establish camps at -500 m, -1200 m, -1400 m, and the bivvie beyond the sump, plus push rope and tackle.

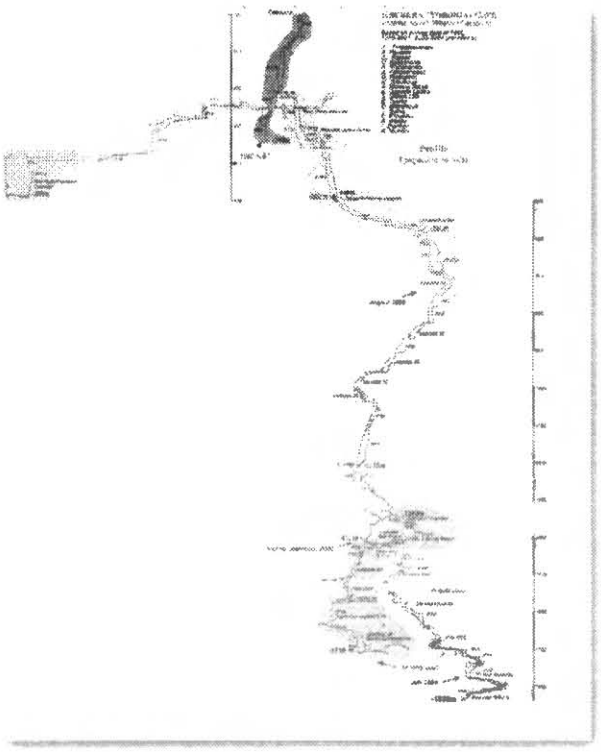
3. Acclimatization

Most of us new arrivals do a load carry to -500 just to get started. On the way we bump into Sasha, who last August took a 30 m fall just above -500 m camp. Less than a year later he's back into it, although does admit to being a bit nervous crossing rebelays. Hmmm, must be pretty nervous then, there have to be 100+ rebelays in this cave. Several of the group thank him for the sacrifice he made so that we could get the entrance zone squeezes blasted out... Even with quite a bit of recent rain and a lot more snow that last year, Voronia to -500 is surprisingly dry but no warmer than last year – still generally 3 degrees and less in the entrance series above – 500 m.

4. Caucasus weather

An overnight storm followed by a morning storm puts an end to anything too useful happening from the surface, but at least the guys on the inside manage to get to "Sandy Beach" camp at -1400 m before the water rises too much.

From the log: *"At odd moments they invented a new flood-prevention method: to wrap a head in a sleeping–bag. One doesn't hear the rumble of a waterfall, thus doesn't feel afraid."*



5. Serious discussions

4 to 6 of us are about to start down to push beyond the sump, but first the serious discussion: it looks like we'll get past the sump with time to explore further. How far should we go? Some say we stop at the head of last year's final pitch and cede any new discoveries to the Ukrainians due to arrive in August. Others say "stuff it, if we're there with time & energy & gear to continue, we continue". In the end we decide to go for it – Good! I can hardly believe we even had such a discussion.

But the news from below is not good. I think they must still have their heads in their sleeping bags. We wait another day for the tide to drop.

6. Chich, Al, Ilia & Skylar to -1200

Not so bad to -500, but double packing from there to -1200 is slow and tough, especially with the water still high. The plan is for the Sandy Beach inhabitants to come up and give us a hand, but all we meet are a few of the 'workers' heading for the surface. Eventually we meet them a pitch above -1200 camp. Mukhin chucks us all in the tent to dry out a bit and warm up while he gets us some chai and food (wow a whole year and no gretchka!). Not enough sleeping bags at Sandy Beach so Victor and I stay - two bags each, what luxury. Even more luxurious is that most of the sacks disappear down the cave without us.

7. Further down

Victor and I get the last three remaining packs to the beach, then ferry gear two more pitches to the sump. The first group through is Ilia and Mukhin who will stay and push and Shoom and Max who are experienced cave divers and help with the sump, then set up the bivvie. Ilia and Mukhin are nervous and take ages to get ready. Shoom is set to go before we even get there – but has to get all that hardware back off to help the others. They set up the bivvie a fair way short of Denis' recommendation at the foot of 'Everest' (Everest Base Camp?), about four metres from the foot of the waterfall, instead of two pitches further down in the dry. Shoom and Max are more than happy to come back. Skylar and I go back up due to lack of beds on the beach. Another luxury night, but no. Denis and three others arrive from the surface, so suddenly we're six in a tent built for three, and only four sleeping bags. That night we all slept on our left side, then our right side, then our...but at least we were warm.

8. More of that Caucasian weather

The 9 am phone call and it's another morning storm above so we bolt without breakfast because we know that floods take around four hours to get down this far. Perhaps the storm started earlier than we thought. The water is already brown and there's lots of it. The Apron pitch is especially interesting "will the flood pulse hit now?" We arrive well, wet, but well. Ilia and Mukhin are due back today. We have no working phone to Everest base so we just have to rely on pre-arranged meetings. They have very little food and Ilia has to fly home on the 24th – and that's tomorrow.

Denis and I get our gear together and go through the sump. It's a short seven metres (later measured to be 3.5 m long) and very free-diveable – not that you could begrudge anybody a small scuba rig down here, unless you had to carry it! We meet Ilia on his way up. They'd rigged two more drops to about -1720 m, then derigged because they didn't know if Denis and I would get there. We don't waste the afternoon getting cold, but re-rig to last year's end and take photos on the way up and get back late. Not that this is a problem because we have to wait until midday tomorrow for our 'order' of karabiners to arrive from the surface.

Everest base is miserable with an unhealthy misty breeze and the constant crash of the waterfall. We spend ages under the space blanket trying to get warm before we can eat, then it's into the iso-thermic hammocks (iso = same, thermic = temperature, ah, I see, a hammock that keeps you at the same temperature as the surroundings – I guess 3 degrees isn't freezing...). Denis is not too badly off even though he gives me the best hammock. His carbide lamp under the hammock's chimney hole provides him with some heat. My LED light provides no such comfort. I find two bits of foam padding that keep me alive, but it's still a long night.

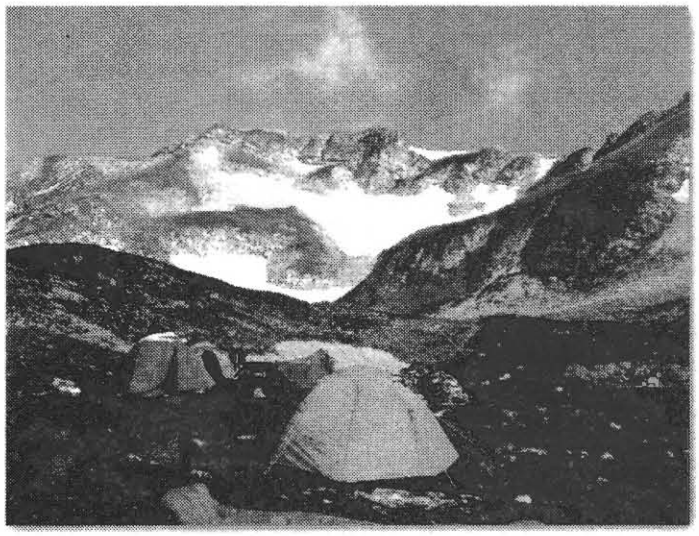
From the log: "Provalov: *One can live in this camp if he doesn't pay too much attention to the wind, water-dust and the waterfall which is roaring three meters from the hammocks.*"

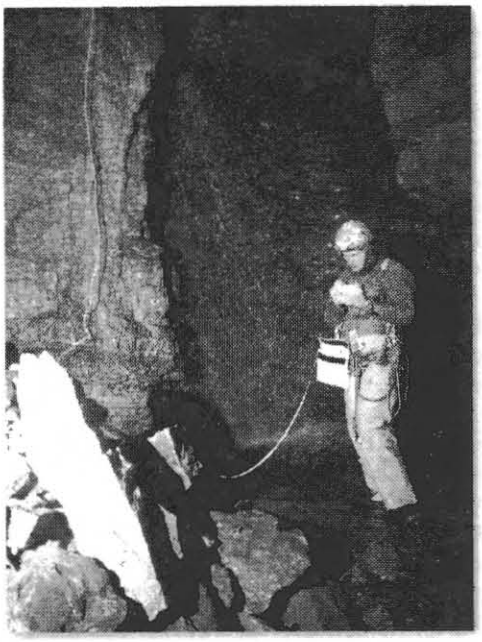
9. THE DAY

Victor and Skylar arrive with the supplies and after all the effort, all the two-forward-one-back steps, we at last have two people able to just go for it. We pack every bit of rope and hardware we have and feeling refreshed after at least four hours of cold-interrupted sleep, get on our way. Our dry suits are on the other side of a really tight squeeze. I couldn't pass it with mine on last night. The Russian suits have a lot of bulk in the lower chest region. As we get redressed on the teetering boulders, Denis inadvertently steps on my suit foot and sure enough it makes a tiny hole and I get a wet foot/leg for the day.

I go rope boy. Ilia and Mukhin's pitches are shockers (lucky boys!). We survived the first one over a teetering pile of blocks suspended

Base camp. Voronia is just out of the frame on the hill in the middle distance.





World's deepest! Denis at -1825m and starting the long survey out.

above the water. It'll need a lot of work before any future load carrying trips. I give the second one an extra bolt and just after removing some excess slack the rebelay I'm hanging off pops. I never have liked sheet bends for rigging knots. But I (obviously) did a good job above and the whole lot holds. A quick bolt and it's dry and safe.

Our first drop is good sized (38 m) and really wet so we cop a fair bit on the head – another pitch that will need 'something' for future trips. We both give quick homage to the inventor of the drysuit. At the bottom is the disillusion: our world closes down to a blank wall with a tiny crawl under – surely the world's deepest cave couldn't end like this! It doesn't. The crawl is short and there are a couple of small steps, then a 10 m pitch to a crawl and a three metre pit full of water. We've been stirring the water by walking in it so have no idea how deep it is and even with the dry suits, neither of us is willing to jump in and check – have to leave something for the next expedition.

I forget to take photos of the sump and we content ourselves taking a few history photos as we begin the survey out. As usual, the Suuntos are in their normal in-cave condition. That is, they look like the inside of one of those Caucasian thunderstorms, but Denis manages as best he can and takes constant altimeter readings. We survey until the small hours, then derig and get to camp by 3 am where once again we spend ages under the space blanket with two stoves. This time we're tired enough to sleep or perhaps it's the stove each of us leaves running under our hammock?

From the log: "Provalov: *At present we can maintain that the second siphon is located below -1800m. But as far as I'm concerned, it is even lower. However I may be mistaken because of the fatigue and the excitement after the trail-blazing trip. Precise figures will be known after the elaborating of the topo-materials.*"

10. Last chance for a swim

Shoomi and Max arrive promptly at midday (they could've slept in!) We demolish Everest base and pack it through the sump. Only one breath on the way back. That's a lot of crap for a single breath. I bolt back to the beach and call in the heavy lift team to help with the gear, then dive into the tent to try and get warm for the first time in a couple of days.

From the log: "*This trip took them 18 hours and as a result they came up to their hammocks merely on all fours. The next morning Shoomeyko and Dzaganiya [Max] stopped their friends' torments by shaking Provalov and Alan out of the cold sleeping bags and then struck the hammocks camp.*"

We end up with eight people and twelve sacks (!hombre!), plus four more for the camp. Once again there isn't room at the best camp in the cave. Four start up from -1200 with 12 sacks. Only 200 m, but probably the least pleasant part of the entire cave with some truly noxious angled rifts. Fortunately Denis and I are cactus with cold and fatigue so we can't help. We just have to lay about drinking hot chai and eating for the rest of the day.

11. Long drag out

The microbes have taken over my body. There's nothing better I'd rather do than lay in this sleeping bag all day. But it's July 26th and we leave the country on the 30th and there's a lot of cave to derig. We stuff the gear into four non-lethal-weight sacks and start the long slow-motion haul out. On the way up I meet four workers coming down. We have a conversation which mostly involves hand signals and shows of fingers to indicate 1830, but at least it's a break along the way. Eventually I make it to -500 and find my lighter is too wet to get the gas stove started – another disadvantage of LED lights. So it's as much cold water as I can swallow, a bar of chocolate and I'm so cold that I have to get on my way again.

Denis arrives when I'm already on the rope and I can't be bothered changing over and coming back. He sets up a 'shop' with two stoves raging in the camp tent and offers people food and drink. They can have whatever they want, but can't come inside because they may not want to leave again.

I get to the surface at around 1 am and as I stagger down the hill, Sergey, the NTV Moscow cameraman comes running up to get some action shots of the victims emerging. This also means that the generator is running, the lights are on and I can get some chai and food without too much trouble.

12. Dead day

Still stuffed from the trip out. Got up about 9 and people were still emerging from the cave.

13. Bad luck

There is still gear at -500 and the ropes are still rigged to -1000 m. Denis & Klim do the -1000 derig & take some photos on the way back. A couple of others go to -700 (the Petit Dru) to collect a load of karabiners and stop just above the spot where you have to lay in the stream and crawl for a while.

Another five of us go to -500 m to collect sacks and help Shuvalov & Larrissa demolish camp and carry it all out, Fatik, the 'beginner' Abkhazian caver is with us. Imagine being a caver in one of the best cave countries on earth when there are only two cavers in the country – poor guy probably hasn't been in a cave since last year when he hauled gear out from -500 m.

I get out early enough to lay in the sun for a few hours. Denis & Klim are out last around midnight. Time to go home.

14. Vamos a la playa

I think my cold is getting better but still only manage three trips down the mountain with loads, while the healthier two-legged burros do four. At least it's a beautiful day for my last day (ever?) on the Arabika. That's the trouble with Abkhazia, you have to treat every trip like it's the last time you'll ever see the place.

We get down in time to meet the local press and TV station reporters. The local folk singer sings a song he wrote specially for us, we eat chocolates and

drink champagne instead of going to the restaurant. Eventually we get there and the night ends as the vodka bottles begin to look empty.

From the log: *"And Dima Utrobin who doesn't drink alcohol beverages for some secret reasons will be responsible for the saving of the drowned men. According to the father's order Katya Moohina is also a teetotaller. I hope she'll help Dima take us out from the sea."*

Friday 30. Escape from Russia

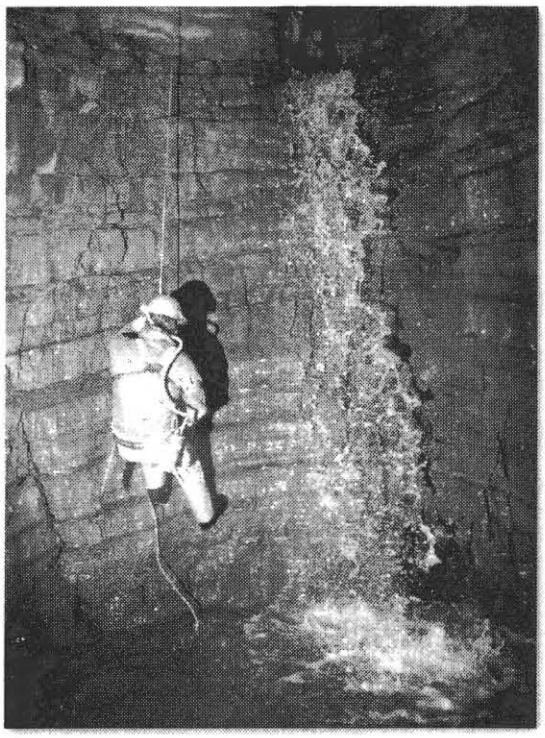
NOW Denis tells me. Our border man has changed jobs and I'm his last customer. "I hope everything will be alright" he says.

The fat man who I still can't remember shows on time at 9.45 and Denis & Klim come along for the ride. The middle of the day is slow and a couple of jam ups help build up the tension. Then at the Russian Passport control the tough blonde woman asks for passports (eeek!) I can't speak - I'm Russian until I open my mouth. But Denis knows the game "Al'uha, you've forgotten your passport - don't worry". The blonde bruiser looks at me, then Denis' passport, then Denis, then the passport, then hands most of them back. We wait. Our man comes back with the passport and we drive off past the final barrier. I breathe again. Klim's international passport only had to be stamped. All this extra adrenaline and for only $50 extra! We discuss how our French and Spanish friends will pass next week. "They can still wade across the river at night" says Klim, "but they might kill them"

Sponsors: BAON, CAMP, Leatherman, Suunto, Optimus, Vertical World (Russia), KONG.

Postscript: A few days later the 50 strong Ukrainian expedition arrived for a month. No news emerged for several weeks, then, as usual, the action hit at the very end with a press release. ■

Denis about to show why drysuits are such a good idea at the bottom of Voronia.



EVEN DEEPER!

26 October 2004

Source:

Victor Komarov, SpeleoInfoCentre & Commission for International Relations, Russian Union of Cavers and Alexander Klimchouk, Alexander Klimchouk is president of Ukrainian Speleological Association.

On Saturday 23 October, members of Ukrainian Speleological Association expedition surfaced from Krubera (Voronya) Cave (West Caucasus, Arabika) stating that the -2000 mt barrier may have been broken! Expedition leader Yuri Kasyan also said that the expedition explored the "collector" section of the cave beginning approximately 50 m upper of the end sump (-1823 m) which was found in August and that "It is possible to say that this section may reach the approximate cave depth of -2050 m".

The official details, results and data will be published in the next issue of "Svet" ("The Light") Magazine after the expedition and future issue of Caves Australia.

Voronia is relentlessly technical: carrying gear at -250.

"PRESS RELEASE FROM THE ARABIKA 2004 CAVING EXPEDITION" (28-8-2004) NEW WORLD DEPTH RECORD

The Arabika 2004 expedition to the Arabika Massif, Western Caucasus, Republic of Abkhazia is drawing to a close. The expedition was organised by the Ukrainian Speleological Association under the direction of Alexander Klimchuk and Nikolai Solovei with the participation of cavers from Britain, France, Spain, Ukraine and the patronage of the NATIONAL GEOGRAPHIC of the USA.

The principal objective of the expedition was the exploration of caves in the Orto-Balagan valley centred on Krubera-Voronia Cave.

With regard to the information that has been circulating since July regarding the new depth of this cave, the following must be clarified:

The new post siphon branch found in 2003 was explored and mapped from the -1440 m sump (S1) to a new sump situated at -1770 m (S2). Last July an expedition composed of Moscow cavers without the permission of the Ukrainian Speleological Association erroneously claimed a depth of 1830 m (S2). This depth was estimated by altimeter and based on a sketch drawn in 2003 that gave the limit of exploration as -1680 m; the survey data has revealed a 51 m error in this section so that the real depth reached last year was -1629 m, and the total error in the estimate published in July is 60 m.

This expedition dived S2 where the Ukrainian diver G. Samokin reached a depth of 10 m and distance of 17 m to establish a depth of this branch at -1780 m. In the same post-siphon branch beside the bivouac at -1737 m a new, independent passage gave access to a large fossil collector. At 3:00 am on the 25-8-2004 the push group composed of:

G. Samokhin - (Ukraine)
D. Kurta - (Ukraine)
D. Fedotof - (Ukraine)
Yu. Timosheuskaja - (Ukraine)
B. Tourte - (France)
S. García Dils - (Spain)

established a new world record with a depth of -1823 m at a sump at the end of the passage. This new passage throws up more questions and promising leads for future explorations.

The expedition would like to thank the patronage of the Federación Española de Espeleología and the collaboration of all of our friends who in one way or another were involved in the expedition.

Considering some of the egos involved, I have to wonder what the 'true' depth of Voronia is. Perhaps we can offer to re-survey it for them.

To be continued...

Geoindicators for Karst Monitoring and

There has been immense change since I started caving in Australia some 40+ years ago.

Nick White, ASF Vice-President and National Chair, ASF Conservation Commission

One of the most important changes came about through the changed recognition of environmental values. Public attitudes to the environment and pressure from caving groups have resulted in at least parts of most cave areas represented in parks and reserves and hopefully better karst management. This has had its positive and its negative aspects. We all know of the curtailing of access and the freedoms that went with that but we seldom reflect on the positive side that protection provides. The ASF and its members have subscribed to a "Code of Ethics and Conservation" for many years and more recently to a "Minimum Impact Caving Code". These codes have been adopted by managers, in many parts of Australia, as required Codes for recreation caving purposes in an endeavour to reduce human impact.

However, managers have been reactive rather than being ahead of the game in adopting best management practice. There are so many different cave management jurisdictions across Australia that it is difficult to characterise them, but to me they reflect the individual corporate cultures of each jurisdiction. To generalise, protected cave areas are understaffed, underskilled and underfunded. What is the reason for this? Is it adequate and are we satisfied with the status quo or do we want something more? Is there a management plan of which we can be proud? Do the plans serve your interests as users? Do the plans serve long-term interests? What part does or should ASF and its Members play in better long-term management of karst areas? How is accountability provided for in plans or by the agencies?

I watch the Annual Reports of Parks Victoria but am not enlightened as to objectives met or failed. I look at the Auditor General's Reports of Land Management Agencies in Victoria and do not find critical observations reflecting on the good or bad of managed karst areas. Is this the same in the other States? The same can be said of State of the Environment reporting which is bland in the extreme in Australia and its States. What monitoring and reporting is required in karst areas or in protected karst areas? Is there a requirement to monitor change? How and why are caves allocated to particular management classes or uses? What do we mean by best practice management? How do we know if it is being achieved? With questions such as these in my mind, I seized the opportunity to attend and represent ASF at an International Workshop, at Geoscience Australia, on Geoindicators held in November 2003 in Canberra. This was one of the two International Workshops held by the International Union of Geological Sciences (IUGS) in 2003.

Geoindicators is an approach developed to identify rapid changes in the natural environment. The term and the methodology was developed by a Working Group of the International Union of Geological Societies (IUGS) to access common geological processes occurring at or near the Earth's surface that may undergo significant change in magnitude, frequency, trend, or rates, over periods of 100 years or less. Geoindicators measure both catastrophic events and those that are more gradual but evident within a human lifespan. Some Geoindicators can provide a record of natural events through time.

The Geoindicators concept and methodology was developed as a framework for assessing changes involving geological processes into environmental reporting. The concept has been adopted as a legislative requirement for Parks Service reporting in Canada and USA. It is also in the process of being adopted similarly in the European Union with Lithuania leading the way with its use of a Geoindicators framework of reporting for its extensive gypsum karst areas.

It should be noted and stressed that this is an earth sciences methodology and quite distinct from the biological methodologies developed for measuring changes in biodiversity or endangering processes. Approaches from the geological and biological sciences should be complementary and not mutually exclusive but the biological perspective should not dominate environmental problems and issues.

What are Geoindicators?

Geoindicators are measures of geological processes and phenomena, which can be used to reflect environmental changes occurring during a human life span. They can be used to assess catastrophic events free of human influence as well as those natural processes where the rate of change has been altered by human influence. The measures used are standard procedures from the geological sciences. Many are simple but others are more complex requiring sophisticated laboratory procedures.

What Can Geoindicators Be Used For?

Broadly, they can be used to answer questions such as: What is happening in the environment?
Why is it happening?
Why is it significant?
What are we doing about it and should we do anything?

Geoindicators can be used to define baseline conditions and trends so that human-induced and natural stresses can be better understood.

Reporting

The use and application of geoindicator methodology are just beginning to be applied to karst environments however there is a large body of karst literature which provides a basis of understanding to build on.

What Indicators Have Been Adopted?

The 27 Geoindicators are:

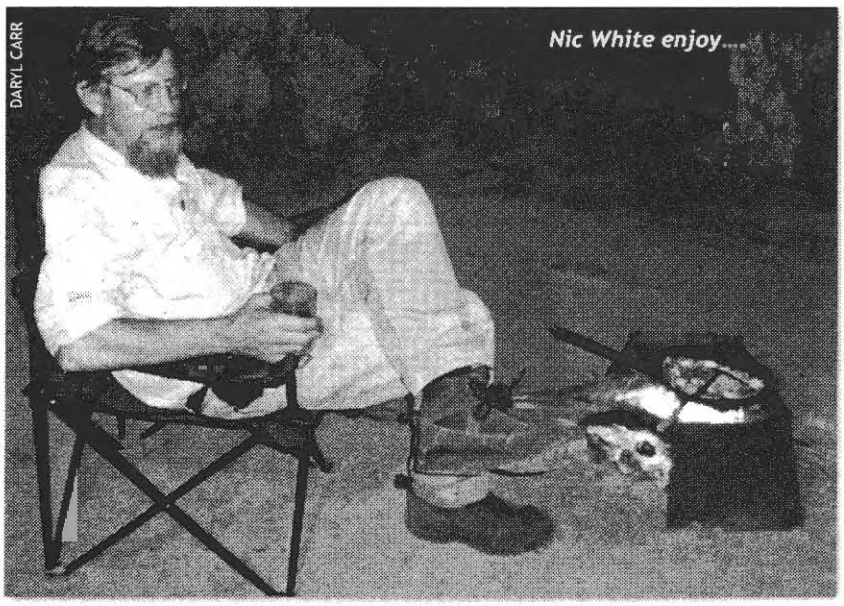
Coral chemistry and growth patterns
Desert surface crusts and fissures
Dune formation and reactivation
Dust storm magnitude, duration, and frequency
Frozen ground activity
Glacier fluctuations
Groundwater quality
Groundwater chemistry in the unsaturated zone
Groundwater level
Karst activity
Lake levels and salinity
Relative sea level
Sediment sequence and composition
Seismicity
Shoreline position
Slope failure
Soil and sediment erosion
Soil quality
Streamflow
Stream channel morphology
Stream sediment storage and load
Subsurface temperature regime
Surface displacement
Surface water quality
Volcanic unrest
Wetlands extent, structure, hydrology
Wind erosion

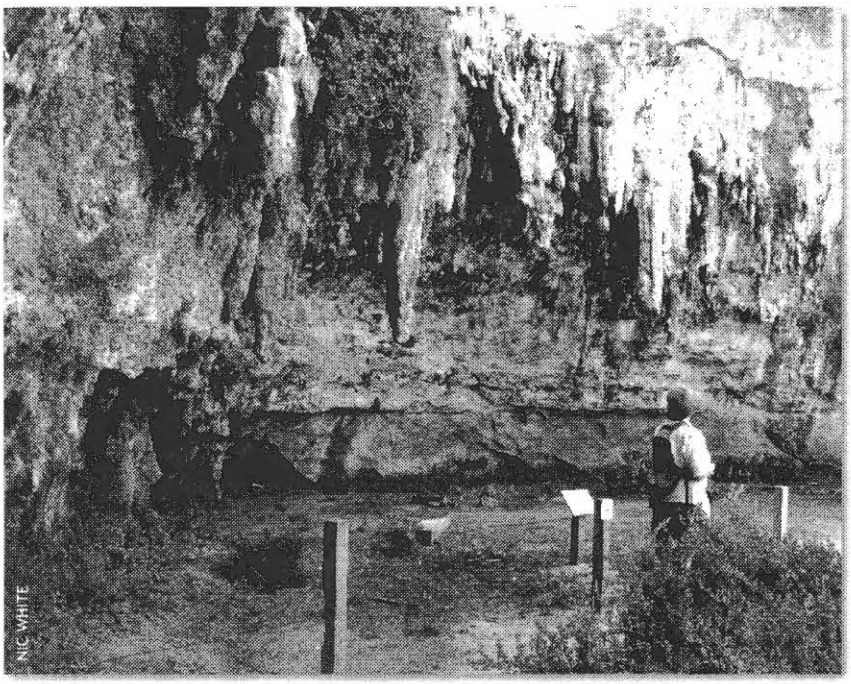
Obviously, the most important ones for karst in Australia are Groundwater quality, Groundwater chemistry in the unsaturated zone, Groundwater level and Karst activity. A number of the other indicators may be relevant in relation to particular caves, cave areas or cave contents.

What Should Be Monitored?

This is a scientific judgement, but a framework would start with a geographical place and build from a description of its setting to the geological processes that formed it, and then to those processes operating currently either due to natural processes or from anthropocentric changes. Some changes are gradual and some hit thresholds beyond which modifications will not influence significant environmental changes. Parameters to measure will only be evident after careful examination. For karst areas it might be that water balances and flows are critical for establishing baseline measurements allowing an ongoing monitoring process. Show caves might need a monitoring regime measuring cave air characteristics (carbon dioxide or radon concentrations), dust fallout characteristics or structural parameters to ensure visitor and staff safety. Studies may be needed on a short-term basis to address management needs or on a longer-term basis to monitor changes. Many cave management regimes have programs in place for just these purposes. However, just because continuous monitoring can be undertaken such measurements should be part of a deliberate program that analyses the results. Where there is evidence of instability a number of managers have glued glass slides across cracks to detect signs of movement, which is a particularly unobtrusive monitoring method. Managers have also been very reactive in the area of public risk from natural geological processes, particularly in relation to the stability/instability of cliffs. They have used geotechnical consultants to report on the condition of cliffs and in some cases have installed warning signs and in others they have fenced off areas to protect the public from rockfall. Such monitoring is a response to a naturally occurring geological process rather than part of a total framework for these natural processes.

Changes caused by visitors at the individual cave level have been central to the development of our Code of Ethics and Conservation and the Minimum Impact Caving Code. Increasingly we are now involved in restricting our impact by track marking but equally cave restoration projects are being undertaken by caving groups. How do we know what changes are significant and when to stop? Most cave cleanup exercises are for aesthetic reasons but equally the floor we walk on is the substrate for cave biota to live on. There are few objective measures easy to apply in a consistent way. There are no methods in use for taking a "snapshot" and certainly not one for comparative purposes between caves or cave areas. Measures which could be used to monitor visitor induced change, are photography and area measurements of trampling, spread of mud,





Loch Ard Gorge alcove in cliffs 2003, Pt Campbell NP Vic.

or graffiti. Spate and Hamilton-Smith, in two related papers in 1992 and 1993, detail many of the physical effects of caving and the consequential effects on biota and habitat in caves. Their interests were in what were the impacts of cave use rather than how to measure or quantify usage. Incidentally, amongst the conclusions in the papers was a suggestion that the Federation draw up a "Low Impact Caving Code". This suggestion led to the development of the Minimum Impact Caving Code by Rauleigh Webb.

On a broader scale, the Perth Basin has a karst aquifer from which Perth derives its water supply. This aquifer is subject to overuse and pollution. Measures which monitor these factors are critical in understanding the limits to usage of this aquifer. Just north of Perth at Yanchep, the caves of the National Park and surrounds have biota for which water table levels are critical. Rapid urban development poses a threat to some caves but also to water flows, which supply aquatic cave communities. The Lower South-East Region of South Australia has an extensive karst aquifer subject to overuse and to agricultural and industrial pollution. High nitrate levels have been and are the subject of health concerns in the Region. Lowering of the watertable may accelerate natural subsidence and collapse. In the Lower South East and along the Victorian coast there are areas where excessive clearing and grazing have caused soil erosion and stripping exposing the limestone cap rock. Accelerated changes such as these are a reflection of human interactions with karst. Many of these problems are addressed through planning measures but I am not aware of any comprehensive overview in Australia. Similarly, forestry activities on karst have in the past had little respect for karst features and pavements let alone the question of soil movement effects on karst streams.

Conclusions

The term "geoindicators" is a bit gimmicky and does not ring the same bells as "bioindicators"; however, it will find its place in environmental reporting and assessment. In terms of Park and Reserve management, perhaps what is more applicable would be "geological aspects of land-use management and cave management". From a caver perspective, a methodology, which could be used to comparatively assess cave disturbance, would be valuable. Too often cavers photograph undesirable damage to a cave but do not have a mechanism to collect or systematise our findings. From a management perspective too much of the geological heritage is implicit and taken for granted rather than a component subject to change and deserving of study, assessment and reporting.

Where to from here? It is important that managers of public lands frame their management around the geological setting and as a consequence monitor and assess changes occurring as a result of geological processes. From the individual cave perspective, I believe there is an opportunity to explore the geoindicator methodology and come up with ways of assessing in an objective and comprehensive manner the changes which we as cavers do to the caves we visit. ASF should take a direct part in initiating this and I would be interested in hearing from cavers willing to participate in this.

Further Reading

Berger, A.R. & W.Jlams, *Geoindicators: Assessing rapid environmental changes in earth systems* Ed A.R. Berger and W.J. Iams A.A.Balkema, Rotterdam 1966.

www.geoindicator.org

Spate, A.P. and Hamilton-Smith, E., (1992) Do cavers have an impact? *Australian Caver,* 131:12-19

Spate, A.P. and Hamilton-Smith, E., (1993) Caver's impacts — some theoretical and applied considerations, *Cave Management in Australasia* 9, pp 20-30.

What's happening in your state?

Has your state or club recently organized a social or caving event? Caves Australia readers are eager to know about happenings in all states. Send details of your states event to the Editor or Production Manager.

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