CAVES AUSTRALIA

The Journal of the Australian Speleological Federation

Mapping Windjana

Vietnam Expedition 2014

Cliefden Cleanup

No. 199 • DECEMBER 2014

COMING EVENTS

This list covers events of interest to anyone seriously interested in caves and karst. The list is just that: if you want further information the contact details for each event are included in the list for you to contact directly. A more extensive list was published in the last *ESpeleo*. The relevant websites and details of other international and regional events may be listed on the UIS/IUS website http:///www.uis-speleo.org/ or on the ASF website http://www.caves.org. au. For international events, the Chair of International Commission (Nicholas White, nicholaswhite@netspace.net.au) may have extra information. A very busy 2015 is promised with ACKMA at Naracoorte in May, the ASF conference in Exmouth in mid-2015 and the UIS 50th birthday in June.

2015

May 10-15

21st Australasian Conference on Cave and Karst Management, Naracoorte, SA. Details of registration, program, papers, accommodation and associated trips are available on the website, http://ackma.org/. Go to the ACKMA Conference site and for further details contact the organizer Deborah Carden, Email: conference.convenor@ackma.org; Email2: deborah.craven-carden@sa.gov.au. Ph: (08) 8762 3412; Mob: 0409 006 710.

June 15-20

23rd International Karstological School 'Classical Karst' & 50th Anniversary of the formation of the UIS, Postojna, Slovenia. The International Union of Speleology (UIS) celebrates its 50th Anniversary in conjuction with the 23rd International Karstological School, a series of state-of-the-art lectures and field trips conducted annually by the Karst Research Institute in Postojna, Slovenia. The 2015 school will focus on the importance of exploration on cave and karst research. Registration is possible only online and will be open from 15 December 2014 until 15 May 2015 for School and until 1 June 2015 for UIS day. To register for the celebration and/or the school, and for more information, use the website http://iks.zrc-sazu.si/en/

June 21-26

Ningaloo Underground 30th ASF Conference: Exmouth, Western Australia. Escape the southern winter (or the northern hemisphere) to enjoy a packed conference program and explore range, reef and gorges with the benefit of local knowledge (always a plus). Details on facilities, accommodation, papers and the registration form are available on the website http://ningaloo.wasg.org.au. Abstracts for papers are due 31 March 2015.

The following more specialised international meetings are currently planned for 2015. Details of these can be accessed from the Events tab on the UIS website http://test3.brlog.net/.

2-9 March

Karstology in Arid Regions, United Arab Emirates.

11-17 March

Hypogea 2015, International Congress on Artificial Cavities, Italy.

16-19 April

13th conference of Cave Rescue Commission of UIS.

20-25 April

75th Congress of Cuban Speleological Society, Cuba.

30 May-2 June

EuroSpeleo Forum 2015 and XXII Italian National Congress of Speleology, Italy.

15-19 June

33rd Congress of the Brazilian Speleological Society.

20-26 June

KG@B, International Conference on Groundwater in Karst, UK.

13-17 July

NSS Convention, USA.

16-20 September

13th Symposium on Pseudokarst, Czech Republic.

5-9 October

14th Multidisciplinary Conference on Sinkholes and the Engineering and Environmental Impacts of Karst, USA.

19-23 October

National Cave and Karst Management Symposium, USA .

1-4 November

CAVES AUSTRALIA

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ASF

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Cover: Martin Holroyd squeezing in Vuc Moi, Vietnam—not all Vietnamese caves are big. Photo: Alan Jackson

ASF Executive

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WANTED
ARTICLES FOR *CAVES AUSTRALIA!*

Whether caving, cave diving or generally just caving, *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.

EDITORIAL

President's Report

THE START of a new year offers us the opportunity as cavers to think about what contributions we can make as individuals for the greater good of our caving community and the karst environment.

2014 saw many of you come together to support the work of the Save Cliefden Caves Committee. Cliefden is an issue that will continue to remain in focus in 2015.

By working collectively, our voice grows stronger and our ability to communicate our message to stakeholders becomes clearer.

Another great example of teamwork by ASF members is the work being done by volunteers to arrange the upcoming ASF conference in Exmouth in June 2015 and the International Congress of Speleology in Sydney in 2017.

The Exmouth organising team have a great conference planned, with an interesting and informative field day. The pre- and post- caving planning will have something for almost everyone.

Importantly, at Exmouth we will have the ASF AGM and Council meeting. This is the time to have your say and input. Make sure that your club is represented, and if you appoint a proxy that they report back to you and pass on any documents.

The AGM is also your opportunity to nominate yourself for a role on the ASF Executive. Fresh faces and ideas are always welcomed.

If holding an Executive role isn't what you are looking for but you are interested in volunteering, why not offer your services for helping with the preparations for the international congress?

The UIS Executive visited Sydney in October/November and met with ICS Convener Denis Marsh and Jim Crockett. They were impressed with preparations so far by the organising committee.

Many more hands are needed still to make light work of this enormous task, so if you are up for the challenge please contact Denis via denis.marsh@hotmail.com. You don't have to live in NSW to assist; roles can be allocated according to skillset and location.

I look forward to being your President in 2015 and overseeing the journey of the many challenges and opportunities that lie ahead.

Wishing you all a fantastic year of Caving.

—Cheers, John

Windjana 2014

Alan Pryke
SUSS

THE MAGNIFICENT vertical limestone that forms the walls of Windjana Gorge is a magnet for tourism in the western Kimberley, together with the large dry season pools which are lined with sunbathing freshwater crocodiles. For the caver, questions as to the cavernous nature of the landscape are certainly a drawcard.

After acquiring a caving permit from WA National Parks, Broome, Megan and I settled for a week to begin a search for new karst features. Darren Brooks, Exmouth caver extraordinaire, provided us with some information as to what had already been discovered and mapped, and plans were made to tackle a remote part of the plateau away from those areas.

We were lucky to have mild temperatures for most of the week, making the walking more enjoyable. Plans were made to find a point to climb up onto the top of the formidable plateau.

The fortress-like cliffs do not appear to have any breaks, but after a bit of a search we found our way up a steep, rocky pass on to the sharp tower karst. Halfway up, a narrow cave entrance was found, which consisted of a single chamber, nicely decorated with flowstone and stalactites. A tiny hole led on, shiny from usage, probably by small mammals. We named this Abrupt Cave. Fairly easy survey—one leg. The decision was made to survey all caves found.

Finding a route through the maze of pits, spires, cliffs, walls etc. proved challenging, as was the search for any obvious cave entrances. There are plenty of grikes, ramps and potential entrances to keep you busy for some time... and that was only the first hundred metres or so.

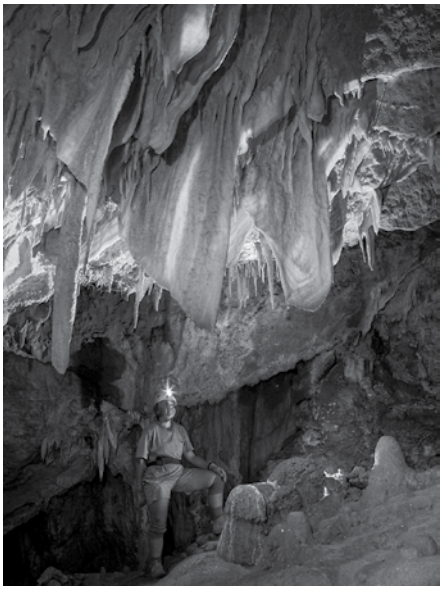
Finally, the spiny landscape broke out into easier walking terrain—or so it seemed. Incredibly spiky spinifex grass now dominated the landscape, forcing us to walk circuitous routes to avoid the wiry metre-high prongs. After a bit of wandering around, a rift was found dropping to blackness. There were no signs of previous entry (eg, a tag), so we climbed down to have a look. A narrow rifting passage led off - dead straight, ending too tight after 40 m or so. A hole in the roof led to a small upper level, again too tight.

ALAN PRYKE MODEL: MEGAN PRYKE

Passage in Expectation Cave, with thin tree roots, Windjana Gorge National Park

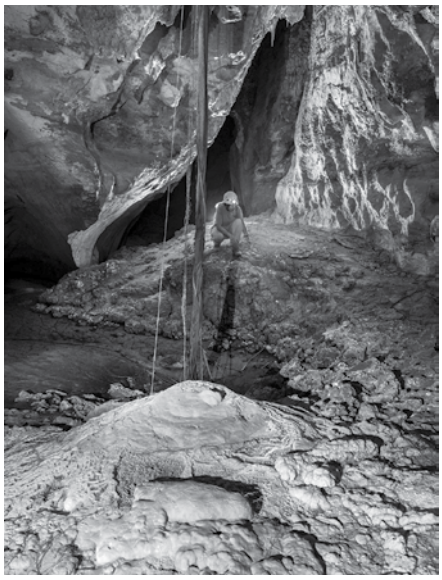
Heading the opposite direction from the entrance led to a steep climb back to the surface, exiting through a hole that looked way too small from the outside. An alphabetical naming regime was conjured up, and this one became Blunder Cave.

Nearby, another hole beckoned amidst the spinifex. This one was also quite tight to enter, but got roomier inside, having a 10 m x 10 m chamber containing strange phreatic sculptures, one of which looked



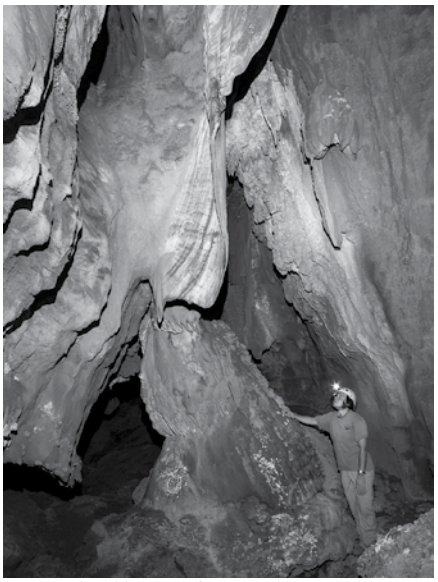
ALAN PRYKE MODEL: MEGAN PRYKE

Beautiful shawls decorate The Oolite Factory, Fanackapan Cave, Windjana Gorge NP



ALAN PRYKE MODEL: MEGAN PRYKE

Tree roots and crystal floor in Fanackapan Cave, Windjana Gorge NP



ALAN PRYKE MODEL: MEGAN PRYKE

Large shawl hanging from pendant, Fanackapan Cave, Windjana Gorge NP

like a cat. A climb to the east contained bats, so we did not enter. The cave turned out to have three entrances, two being too awkward to climb out. There was about 80 m of passage in this one, named Curiosity Cave, after the cat.

We decided to move south towards the more 'griky' karst, and after climbing around and over much spiky vegetable and mineral stuff, we located a cave in two parallel grikes which, after some climbing around, led back to daylight—Arch-Enemy Cave. So much for alphabetical order.

Having only found bits and pieces, we figured that maybe the plateau would only be studded with small caves. Little did we realise what the afternoon would hold for us. A small bunch of low trees attracted our attention, and underneath we found a leafy slope heading into a hidden entrance, similar to our experiences at Bullita. At the bottom of the short rubble slope a crawly cave was entered via a low flattener—just a small single chamber. Disappointment Cave.

Just south of this was a similar bunch of bushes. We found a more promising leafy Bullita-like slope to a side passage, leading to a short pitch. This was more like it. Back to the main slope led us to a large, 50 m walking passage which ended too tight. Halfway along, a side passage led to a small decorated room lined with excellent cave coral. A more positive name for this one—Expectation Cave.

A short distance to the west brought us to another fig tree grotto, complete with a leafy slope to darkness. We excitedly climbed down and explored large walking passage to a T-junction at which both ways led to dead ends. A side passage was explored, but also did not continue. Good cave decoration was found throughout most of the cave. Finding an 'F' name turned out to be a bit more challenging. We thought about coming up with something profound, but ended up with the delightfully silly Fanackapan Cave.

We vowed to return the following morning to map the cave as it was getting late and the return was a bit of a haul. We took a few wrong turns in the grike labyrinth, leading to a bit of step retracing, but soon the climb down was found, late light skewing across the landscape.

Next morning, we returned to the plateau and mapped Fanackapan, ending up with over 100 m of passage. Leaving the cave we continued our search through rugged country, with slots, spinifex and sharp rock trying to thwart us as we moved onward.

A small arch in the limestone attracted us, and we soon arrived below it in a spinifex nightmare. We edged our way along ledges and rocky gaps to avoid the sweet-smelling spines. We spied a rift and dropped down a slope into a strange area of narrow rifts in all directions, like spokes in a wheel. Some were open to the sky, others covered. A survey quickly revealed a low, cobwebbed hole leading to darkness. We surveyed on and soon realised this was getting bigger than expected. Each turn in the maze saw the passages get larger. Most of the time we were in walking passage, with the odd tight bit. It was turning out to be quite a maze, and nicely decorated.

As we surveyed north, the passages became huge, up to 15 m wide and 10 m high. Without mapping, you would quickly get lost in the maze, so stations were left at each junction to make backtracking safe. Soon the passages became low, but a good breeze goaded us on. An awkward, tight squeeze opened into a decent-sized room with a tree root searching the floor for moisture. This looked familiar—we were in Fanackapan Cave. This was good news, as the cave was now much easier to access, albeit with that squeeze. Now to retrieve our gear from the other entrance…

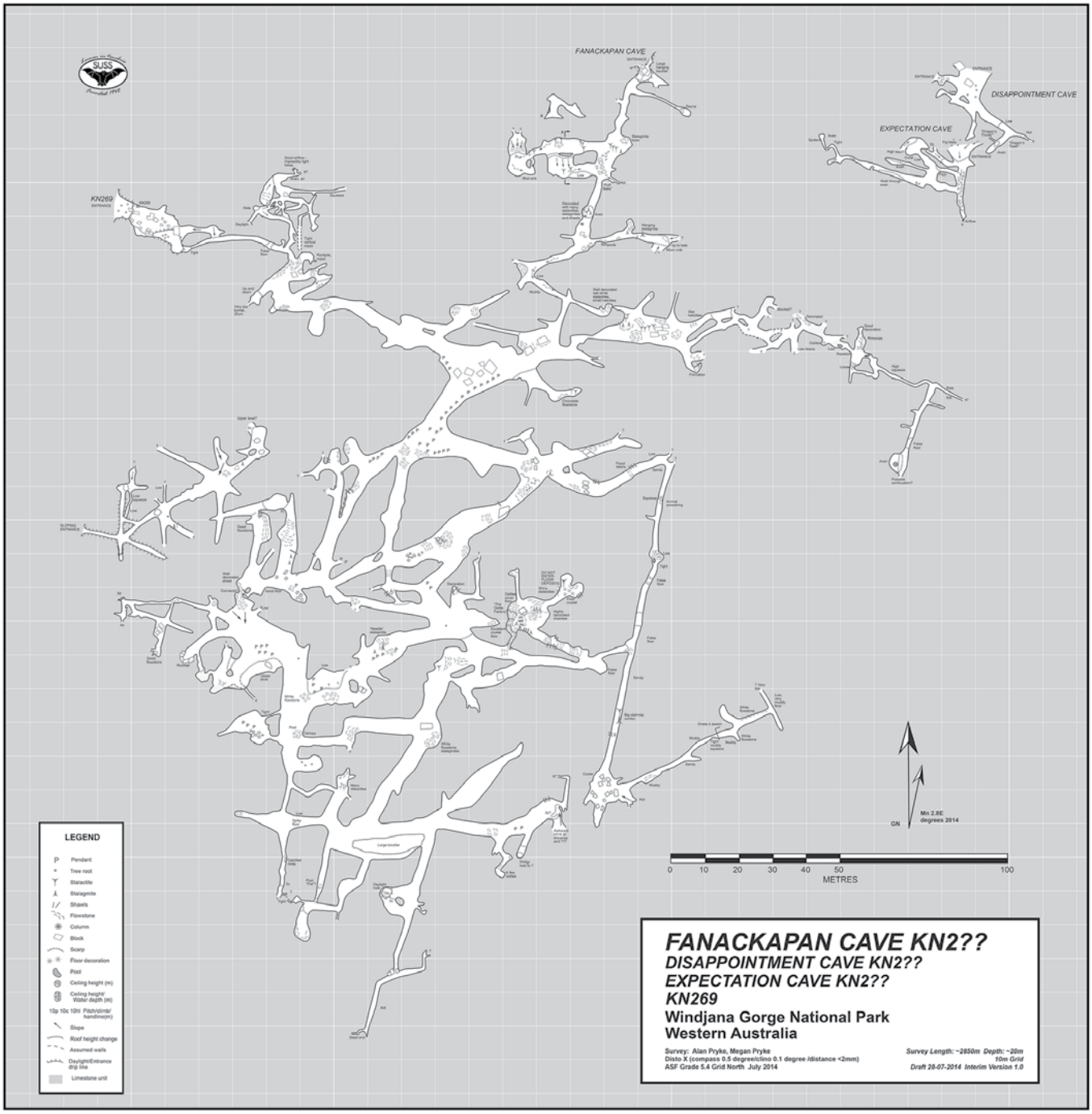
As the survey progressed, we realised that the rest of our trip would probably involve only the mapping of Fanackapan, as well as taking some photos of the cave.

As the days progressed the cave continued to grow. Late in the trip, a beautiful room was discovered, containing a rim pool-covered floor with metres of oolites. We named this Oolite Factory. Most of the floor of the cave had evidence of animals, possibly wallabies, but no evidence of any entry by other cavers. The Oolite Factory was probably saved from being flattened by stumbling wildlife by a low wall which had to be crossed to reach the delicate floor.

Time eventually ran out, and on the final day a tight climb was pushed through to a large open arch, leading out in both directions. We arrived through a small hole part way through. Much to our surprise, we found a tag in a wall of the arch—KN269. It seems likely the hole we arrived from had not been looked at. We agreed that it was likely the cave had probably not been entered.

So ended a fantastic week or so of discovery, ending up with an incomplete map around three kilometres in length. We hope to return to discover more passage in the more unsavoury leads.

We would like to thank WA Parks and Wildlife Senior Operations Manager Dave Woods and the Broome Parks office for issuing the necessary permit, the traditional owners, the Bunuba people, all the staff on the ground at Windjana: Senior Rangers Rod O'Donnell and Erin Davis, and Dillon Andrews for looking after us.


FANACKAPAN CAVE
DISAPPOINTMENT CAVE
EXPECTATION CAVE
KN269
LEGEND
Pendant
Tree root
Stalactite
Stalagmite
Shawls
Flowstone
Column
Block
Scarp
Floor decoration
Pool
Ceiling height (m)
Ceiling height/ Water depth (m)
10p 10c 10hl Pitch/climb/ handline(m)
Slope
Roof height change
Assumed walls
Daylight/Entrance drip line
Limestone unit
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METRES
FANACKAPAN CAVE KN2??
DISAPPOINTMENT CAVE KN2??
EXPECTATION CAVE KN2??
KN269
Windjana Gorge National Park
Western Australia
Survey: Alan Pryke, Megan Pryke
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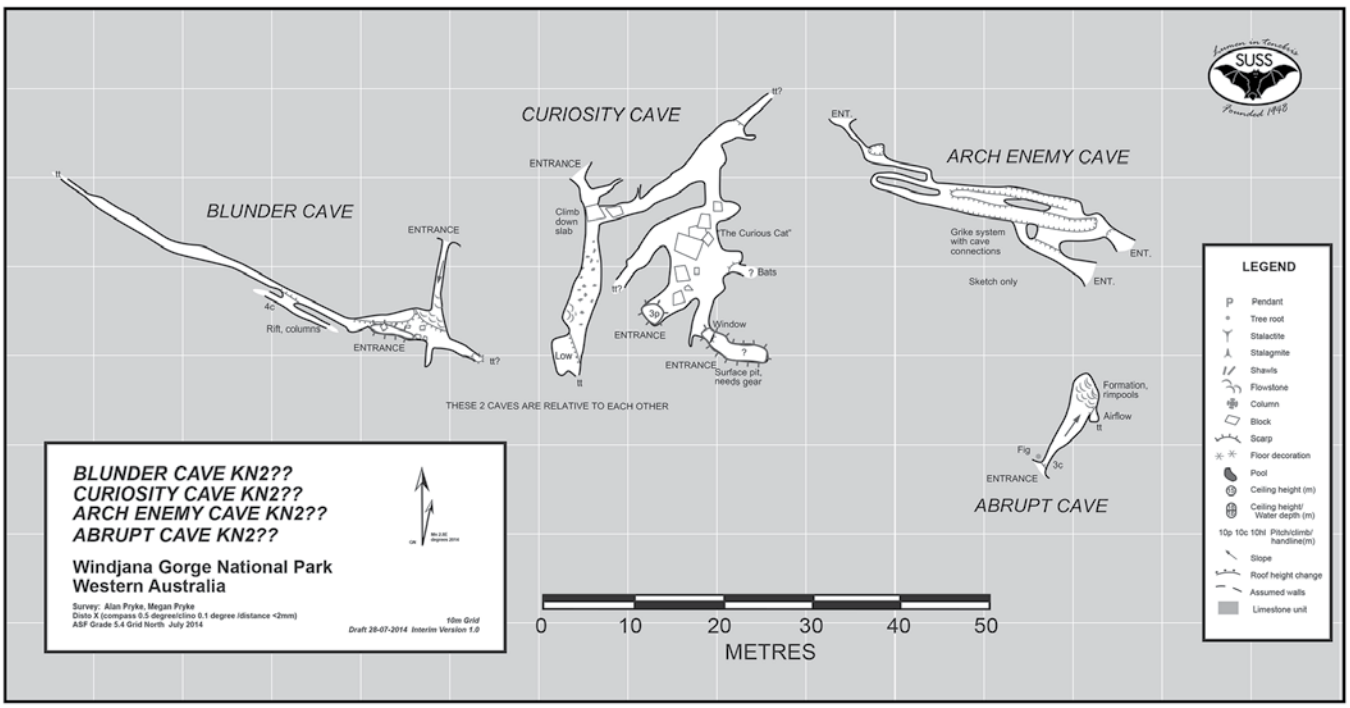
ASF Grade 5.4 Grid North July 2014
Survey Length: ~2850m Depth: ~20m
10m Grid
Draft 28-07-2014 Interim Version 1.0


BLUNDER CAVE
ENTRANCE
4c
Rift, columns
ENTRANCE
tt?
CURIOSITY CAVE
tt?
ENTRANCE
Climb down slab
"The Curious Cat"
? Bats
tt?
3p
ENTRANCE
Window
Low
ENTRANCE
?
Surface pit, needs gear
tt
THESE 2 CAVES ARE RELATIVE TO EACH OTHER
ENT.
ARCH ENEMY CAVE
Grike system with cave connections
ENT.
Sketch only
ENT.
Formation, rimpools
Airflow
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ABRUPT CAVE
LEGEND
Pendant
Tree root
Stalactite
Stalagmite
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10m Grid
Draft 28-07-2014 Interim Version 1.0

Vietnam 2014

Alan Jackson
STC

'We rushed back up the track to find Sweeny kneeling on the ground with Martin's unconscious and bloodied head resting on his lap. Shit! An unconscious patient with head injuries is not what you want one and a half day's walk into the jungle.'

'NAM 2014

A mob of pommy cavers (BCRA), led by the irrepressible Howard and Deb Limbert, have been leading caving expeditions to Vietnam since the early 1990s.

I'm sure all of you have heard of Hang Sơn Đoòng—'the biggest cave in the world'—which has featured in *National Geographic* and innumerable online publications since its exploration in 2009 on a previous BCRA expedition. In March-April 2014 I was lucky enough to tag along for the first four weeks of the most recent six-week expedition, having scored a highly coveted invite thanks to the good work of previous Vietnam expeditioners Trevor Wailes and Andy McKenzie; I knew being nice to those two and pretending I like them would pay dividends in the end.

Aside from Hang Sơn Đoòng, countless other epic caves of grand proportions have been discovered, explored and mapped over the last 30-odd years on Howard and Deb's expeditions.

Many of the early discoveries are now major tourist caves. A thriving tourism industry has been created in the once sleepy rural Quảng Bình province.

The 2014 expedition's aims were to continue the exploration of the massive limestone landscape between the coast and the Laos border. On my first evening Howard excitedly sat me down with topographic maps of the area and showed me the location and extent of the known caves, the total area prospected since 1990 and the remaining extent of the karst area that is yet to be looked at.

Only about 90% of the total area hasn't been looked at, so just a small bit of potential! The main impediments of exploration are that the area is principally devoid of anything other than rough foot tracks, the terrain is insanely steep, jagged and dry (in the dry season), and the Vietnamese bureaucracy is second to none.

ALAN JACKSON

The view from the hotel room—karst country!

Thanks to Howard and Deb's long involvement in the area and assistance from the Hanoi University of Science, much of the karst is now World Heritage listed and enormous economic changes to the area have occurred; Howard and Deb are now minor celebrities in the country and the bureaucratic hurdles are less of a problem than they used to be.

The poor access and nasty terrain, however, have not improved much. Exploration in the past has centred on the road from Quảng Bình to Laos. This road traverses the southern portion of the karst area and provides relatively rapid access to the karst a few kilometres north and south of its alignment.

Despite this, new caves are still being found within very short distances of the road, due to the near-vertical terrain that flanks the road in most spots. These areas can be hit as day trips or short 2-5 day stints in the jungle. More recent expeditions have begun to focus on targets further afield, which require 8+ day forays into the jungle. With no communication, vicious terrain, infrequent water sources and hot, humid weather, stints of this length are rather arduous affairs. But the caves are worth it.

In 2014 fourteen cavers (all of them British apart from myself) participated in the six-week expedition—some there for the whole period, others for between one and four weeks. Local guides spend time in the jungle between expeditions, make a note of any caves they find and report them to Howard and Deb.

A rough itinerary is then drawn up in the six months or so before the expedition sorting out teams, target caves and logistics—guides, porters, permissions etc. Before I flew out of Hobart all I knew was that my name appeared beside a list of areas, cavers and guides, few of which I knew anything about. I'd only ever met and caved with two of this year's crew.

A LEAN START

Things started badly when good old Qantas failed to shift my checked luggage from my domestic flight to my international flight, so I arrived in Saigon with lots of enthusiasm but very little caving gear. They eventually found my bag languishing in Melbourne but due to another short domestic flight, a Sunday and an immediate caving schedule, I was not to be reunited with my bag for more than a week.

I made do by rummaging through the store of semi-retired and left-over kit from previous expeditions and stealing stuff from the others when they weren't looking. After a half day touring the town and getting the low-down, the next day was a warm-up, one-day trip.

Gareth Sewell (Sweeny), Howard Clarke and I were assigned a previous find (Hang Bang) that hadn't been checked in the upstream direction. While the lead didn't go far, it was a nice easy trip to get my bearings and familiarise myself with the terrain, the climate, the vegetation—there are some things you don't touch; the fauna—there are lots of things that want to eat you or send you deaf; and, most importantly, the personalities of Messieurs Sweeny and Clarke—no easy task.

XUONG VALLEY

The next day Adam (Spillane, with whom I'd caved in China 2011), Dave Ramsay and I headed off for a seven-day stint to the Xuong Valley area. I'd been regaled with epic tales of Xuong Valley trips by Andy and Snablet (Peter MacNab)—no water, ten-day-old pork curry-induced dysentery, AK47-toting smugglers and cracking vertical caves.

It took us three days to walk in with five guides/porters. Most of these days weren't too epic, as the dire water situation often meant you had to stop early in the day as the next reliable water spot was too far away to reach that day.

On day two the first of my scavenged shoes started to disintegrate and had to be tied up with string. On day four we checked out two caves. The first was a streamsink which crapped out after 100 m and the second, Hang Nô, was a wet season resurgence that fed the aforementioned streamsink,

ALAN JACKSON

Xuong Valley cliffs

which was nice, big horizontal passage for a couple of hundred metres before getting a bit nasty and tight before sumping. It was a crap day by Vietnam standards, but both were caves that would have been more than welcome finds back home.

On the fifth day we relocated camp and were shown to a 3 m diameter, 50 m deep shaft that takes a lot of water in the wet season—Hang Mây. This kept us busy all day, as it progressively got larger and larger before levelling out at -200 m in massive passage (L-50, R-3, U-40, D-1.5 kind of passage). Moments before turn-around time the cave ended abruptly in a pile of mud-covered boulders and we hurried out, derigging without checking any side leads—approximately 1100 m of survey all up for the day. The other shoe crapped itself on day five and more string was required. Days six and seven were spent dragging our leech-covered bodies back to civilisation.

While we were out in the Xuong a second group had gone in to push Khe Tieng, which was the scene of Trevor Wailes' flood entrapment in 1997. An account of this episode was published in *CA*178 (Wailes 2009). The sump Trevor had reached in 1997 was open and three kilometres of new cave had been surveyed, but the expected connection to the main drain of Khe Ry was not found.

LUGGAGE FOUND, CAVERS LOST

After a brief afternoon of recovery it was time to get ready for the next day's trip. My bag had finally arrived, so I had the luxury of shiny clean gear (all of which actually fitted me) to play with. Having a pair of shoes that weren't held together with bits of string was a nice change. The notes on the trip I was down for said 'large cliffed doline; 100

ALAN JACKSON

Lorry transport returning cavers to Phong Na

ALAN JACKSON

A cave! Hang something!

m deep and 1 km circumference'. It sounded OK. It was earmarked as a five-day trip.

The first day was a disaster. The porters hadn't been worded up and weren't prepared. There were lots of last-minute phone calls to find porters, organise supplies and the like. We were dumped on the side of the road to Laos, stumbled into the bush with too much gear and not enough porters and promptly got lost. We ended up camping for the night within earshot of the road.

The next morning the correct path was found but morale was low amongst the porters and the decision to turn around was made. Transport back to Phong Na was arranged and we sat down with Howard and Mr Kanh to formulate plan B.

A few hours later we were back at the side of the road again with some extra porters and a lot more confidence. Day one's walk was steeply uphill but relatively short to a good water source. Day two was long and hard and ended by putting us beside a cave that had been pushed on an earlier expedition.

At this point we realised we'd just been paralleling the Laos road and had taken three days to get a half day's walk from the road. We westerners like topographic maps and GPS, but the locals do it all by memory. Their memory and knowledge of the myriad jungle routes is phenomenal, but obviously they stuff up occasionally.

That afternoon we were shown our target cave, Thach Sinh Linh Đông, which was hidden amongst a labyrinth of razor-sharp pinnacle karst and, while it wasn't as big as the notes suggested, it was a mightily impressive hole in the ground—about 60 m deep on one side, grading down to about 30 m deep on the other, and about 400 m round the outside. The doline floor had a jungle growing in it. We picked our approach point and headed back to our nearby camp with great anticipation for the next day.

MARTIN HOLROYD

Beyond Xuong team

While we headed off to explore the big hole, another team of locals was heading off to try to find another new cave that had been found in the general vicinity a few years earlier as a backup if our monster cave didn't go—yeah, as if—and another group sussed a better escape route back to the road. Amazingly, despite the presence of massive passage heading off either end of the doline, the cave didn't go any more than a couple of hundred metres in either direction. We were simply astounded. Paul Ibberson said that this cave was almost the same as the Garden of Edam entrance into Hang Sơn Đoòng and that he was expecting it to do something similar. Alas, it was choked at either end. That's caving.

We returned early to camp to find that the other new cave had not been found but that the short escape route was a goer, so we ate well and prepared for an early exit. The next morning we were up and going early and back at the road around lunch time. Unfortunately, we didn't have communication and we weren't expected out till the next day and at a different spot, so we started traipsing down the road trying to hitch rides on passing motorcycles. Some of the guides and porters got lifts and headed back to civilisation to organise a van. As we waited, the lorry carrying the other group, who had been caving down near the Laos border, came past and we tumbled into the back of that with Deb, Sweeny and Adam. They had surveyed several large caves but nothing epic. We had barely got moving again when our minivan arrived and we were presented with the option of bouncing in the back of a lorry getting sunburnt and bruised for 20 km or sitting in an air-conditioned van stocked with cold Coca-Cola and beer. Tough choice.

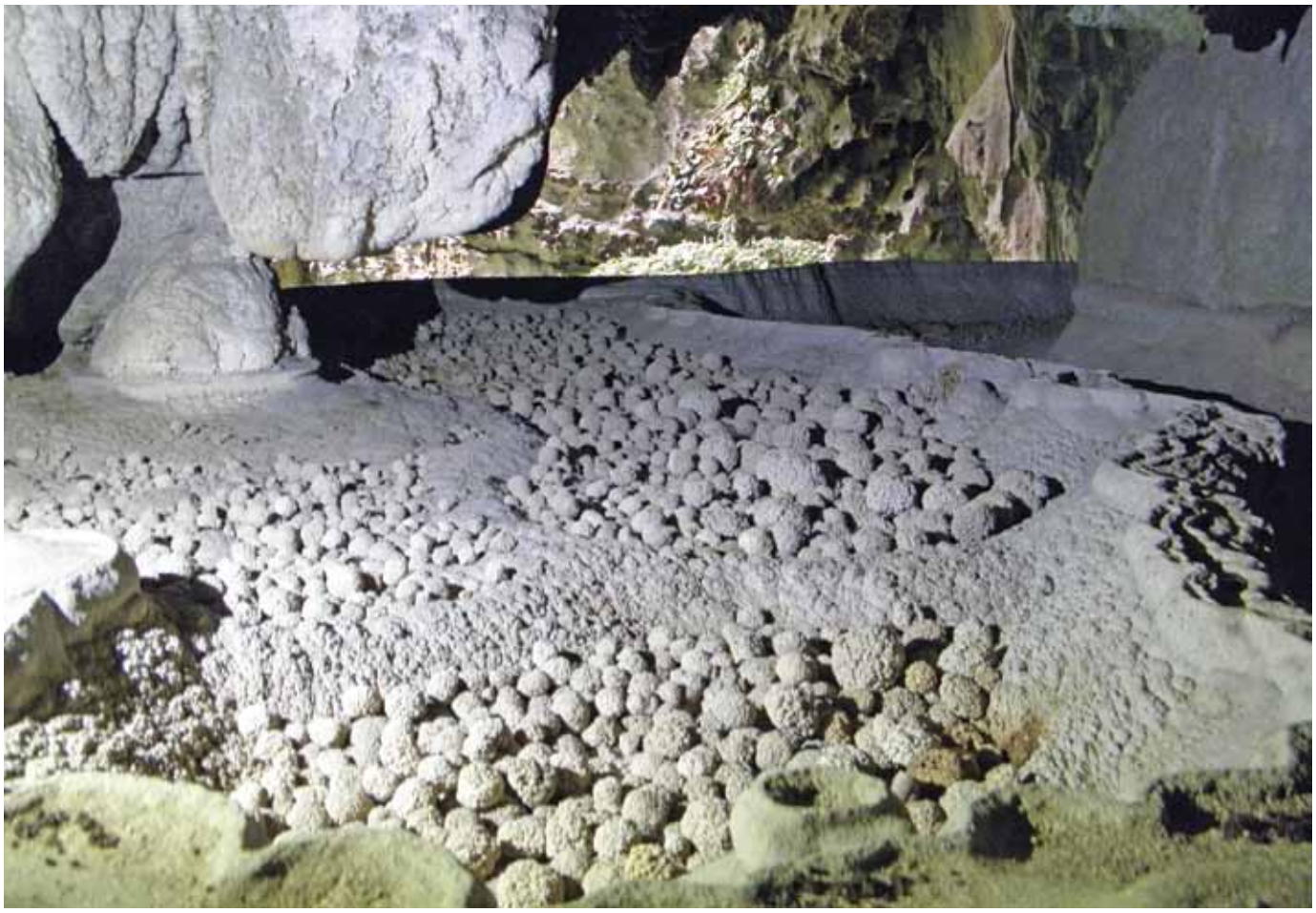
SHAFT BASHING

Two weeks down and this was halfway for me. We had a rest day and welcomed a few new expedition members at the airport. The following day, though, we were back into it, with three independent day trips happening. Sweeny, recent arrival Robbie Burke and I were given a guide, a note sheet which said '70 m shaft at KM17' and dumped on the side of the Laos road supposedly at the 17 km point, which was mysteriously further down the road than we'd started our previous trip, apparently at KM20.

The slog in was a minor epic, mostly

ALAN JACKSON

Beautiful pitches in Vuc Moi



ALAN JACKSON

Cave pearls in Thach Sinh Linh Đông

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Vuc Moi—lovely clean rock

DAVE RAMSAY

Tufa dams on the five-day trip walk out

ALAN JACKSON

Overlooking the Xuong from a large cliff cave entrance

PETER MACNAB

Hang Moi For Real was less than desirable in spots…

PETER MACNAB

…and ended badly

ALAN JACKSON

Martin negotiating Toblerone Crawl in Vuc Moi

ALAN JACKSON

Dinner

ALAN JACKSON

Exploding shoe repair

ALAN JACKSON

The land crab Martin found between his legs

ALAN JACKSON

A previous one-way ticket holder in Thach Sinh Linh Đông

untracked, ludicrously steep in spots and lots of razor karst. Fun. We were all utterly knackered and thoroughly convinced that our guide had no idea where this shaft really was when we suddenly stumbled across it. The gaping maw with a six second drop we had before us instantly quashed any ill feeling or tiredness.

One hundred and twenty metres and three rebelays later we were at the bottom of this brilliant shaft. A massive horizontal passage headed off at the bottom complete with a deep, slowly flowing lake.

Robbie drew the shortest straw and dived in for a recce. He breast-stroked off into the distance and around the corner and returned a few minutes later. The passage, and the swim, was continuing off out of sight in passage of generous dimensions and we could hear the sound of a drop or rapid ahead. With the time it had taken us to get this far—the walk in consumed a lot of time—we decided to leave it at that but leave the cave rigged for a return later in the expedition; Sweeny and I had a 12-day Xuong Valley trip starting the following day.

Incidentally, once the location of this cave was plotted and its general description bandied about the dinner table, it was generally agreed this cave must be the previously explored cave 'Hang Nightmare', which terminated soon after a small cascade in the river passage, and it was placed in the 'Oh well, it was a fun trip; pity it's not new' pile. However, when Deb, who had been present during 'Hang Nightmare' exploration, got round to derigging the cave several weeks after the main expedition finished, it was decided that it was actually a new cave after all, and that there had been a datum mix up which placed the two caves so close together.

They were actually a long way apart, so the 'KM17 Shaft', as the cave is generally referred to, is now firmly back on the 2016 expedition hit list. Hopefully I'll get another turn at it then.

BEYOND THE XUONG

Not knowing at that point that our 120 m shaft was possibly just an old find, I was torn between wanting to go back the next day to push it and embarking on the 12-day Xuong trip written into the schedule.

But twelve days with Sweeny and Snablet, my only chance to cave with Snablet since he was doing the last four weeks of the expedition and I was doing the first four, couldn't be passed up. A fourth caver, Martin Holroyd, was joining us. The weather turned nasty—mid to high thirties and humid—and that, combined with the amount of food and gear we needed for twelve days in the jungle, made for a nasty

ALAN JACKSON

The five-day trip team

walk in. It was slow and hot going; how you can drink six litres of water in a day, only walk ~8 km and still be dehydrated was a foreign concept to me until this trip. After four days of slogging it we camped near a couple of new cave possibilities, but neither did anything interesting.

There was endless and excited talk of 'Hang Moi'. Everything we found proved to be called 'Hang Moi', yet there was always more talk of 'Hang Moi' the next day. We figured 'Moi' must have been an active prospector in this region and had named all the caves after himself.

Eventually the Hang Moi stuff was getting a bit ridiculous, so with the help of a Vietnamese phrase book of Snablet's, we discovered that 'moi' meant 'new'. 'Hang Moi' then became the running joke for the trek.

On day five we did one last walking day to reach our target area. On day six we were led a short distance to our first proper 'Hang Moi'; we ended up calling it Hang Moi For Real. This proved to be a small-dimension cave in a disproportionately large doline. There was lots of swimming and near-ducks, a healthy bat population and almost no vertical element; all the previous Xuong trips had yielded 200-300 m deep shaft systems to base level horizontal caves.

But plotting our position on the map showed we were well and truly beyond the Xuong now. We racked up 600 m of cave for the day. On the following day we were informed that we needed rope because we had a 'Vuc' (shaft) entrance. We amused ourselves by naming this cave Vuc Moi. It was about a 30-minute walk from camp and in slightly different terrain. The cave was of a totally different character to that of the previous day. Small and vertical, much like the stuff I'm used to at home in the Junee-Florentine, it took us two days to bottom this ~250 m deep, 500 m long pothole.

The cave consisted of small pitch after small pitch after small pitch and consumed a lot of time and rope to rig. The only reason we reached the 'bottom' on the second day was because I was sent back to scavenge whatever I could from the previous pitches in order to cobble together enough rope and rigging gear to get down the last few pitches.

At the bottom the cave turned horizontal and there was evidence of backing up during the wet season. Snablet refused to let a small rock blockage halt progress and hammered his way through into more vile, slippery horizontal passage. Eventually, mainly due to time constraints but partly due to a slippery boulder strewn floor with deadly voids and no more rigging gear, the passage was left wide open and beckoning. Next time.

Vuc Moi was abandoned and we spent day nine pushing more horizontal streamsinks closer to camp. One was small and short (100 m) and the other was large and a bit longer (250 m).

We relocated camp to a magnificent limestone cliff a short distance back along the track that afternoon, where I experienced the novelty of stringing my hammock up between two bolts. On day 10 we were guided to another nearby horizontal stream sink (Hang Moi Lan).

The first kilometre of cave was large, dry horizontal passage, although a major conduit during the wet season, which then dropped slightly to a lower level and became smaller and wetter. Lots of swimming and ducks until finally a sump—the kind of sump that would send any cave diver giddy with excitement (at least that's what it did to Martin) but not an easy place to cart tanks

to. It was a nice cave to finish the trip on (1230 m all up), even if I was shivering so badly that keeping book was farcical.

With severely depleted food stores making for light packs, two days were budgeted for the walk out.

The first day saw us take an alternative route back to the Xuong Valley main camp. This route took us through the area I'd visited on the seven-day trip I'd done earlier in the expedition. Once I knew where I was I started recounting to the others the horrors of one particularly nasty steep pass we would have to negotiate. My warnings proved to be justified.

As we descended the nasty col, Snablet and I were halted by panicked and urgent hollering from behind us. It was all in Vietnamese so we stood still hoping for some direction in English; Sweeny and Martin were behind us too. It became apparent we had a real problem when one of the porters from in front of us came hurtling through with the dreaded Darren drum marked 'C – First Aid' and its bearer saying 'Sweeny? Martin?'

We rushed back up the track to find Sweeny kneeling on the ground with Martin's unconscious and bloodied head resting on his lap. Shit! An unconscious patient with head injuries is not what you want one and a half day's walk into the jungle. And Martin is a strapping lad, too; six foot and well built—we wouldn't be carrying the sod anywhere easily.

Thankfully, Martin regained consciousness and was able to sit up and run us through where it hurt; he's a firefighter in the UK and does lots of car accident trauma first aid, which helped.

He had two nasty gashes on the top of his head, but apparently no skull fracture, and a left thumb that looked like it had been pulled off and put back on the wrong way. He had stumbled in a bad spot just before a 2.5 m drop off and landed head down, bum up on a big chunk of razor-sharp limestone. Luckily for his skull he managed to get a hand out to take the brunt of the fall before ploughing into the rock with his head. A depressed skull fracture could easily prove fatal at that distance from proper medical help.

Thanks to a well-stocked first aid kit and a bit of Boy Scout nous we got Martin bandaged up like a front rower, divided his gear amongst all the others and nursed him down the rest of the steep descent to our planned camp site.

Early that evening, during the shift change between the horrible daytime biting creatures and the nasty night-time biting creatures, we removed our earlier efforts and had a proper clean and inspection of the wounds. We gave Martin a very fashionable haircut, drowned him in iodine again and packaged him back up in a much more professional manner. His hand was now extremely swollen and looked by far the worse injury.

PETER MACNAB

Fixing up Martin after his stage dive attempt

At least he could walk.

Day 12 dawned and we made an early start to escape the heat. We did in one day what had taken us three to get in and we all enjoyed a few cold ones from the Paradise Cave show cave markets. The tourists didn't quite know what to make of this mob of stinky, filthy, bloodstained vagrants who had stumbled into their midst.

Back at Sơn Trạch, Chrissy, Ian Watson's wife, who is a nurse, inspected Martin's injuries and confirmed our suspicions—head not so bad but hand really bad. We took to Martin's head with a shaver to make his haircut a little more socially acceptable. We decided to take him to nearby Dong Hoi hospital while dropping me off at the airport the following morning .

THE WASH-UP

All that was left for me was to pack my bags and deal with the fact that my visa expiry problem, which had remained persistently unresolved since I arrived, was still unresolved. It was dealt with by saying, 'Here's US$50; that should sort any problems out' and adjourning to a big session at the bar.

While the hangover was no help at all, the $50 turned the immigration official's serious frown into a 'no worries' expression and I made it out of the country without a stint in prison.

It turned out that Martin had fractured his thumb in a few places and required surgery with pins and months of rehab. His head wounds, while spectacular bleeders, were superficial. It was the end of his expedition, though, and he headed home early to explain himself to his wife and child.

The remaining two weeks of expedition didn't turn up anything startling by Vietnam standards, but it was productive nonetheless. The post-expedition summary claimed 17 km of cave explored and surveyed. Considering the high speed surveying we were doing, I reckon that could be extrapolated into about 30 km if I'd been surveying it by my normal but not over-the-top anal surveying methods at home and at least 50 km if there'd been any Yanks on the team.

Not a bad little expedition. At times I nearly cried; I frequently ranted at voracious invertebrate wildlife and cursed the weather, vegetation and terrain, but that was all months ago now and I simply can't wait to get back there in 2016.

A HUGE THANK YOU TO:

Trev and Andy for getting me there;

Howard and Deb for their unrelenting enthusiasm, diligence and expedition organising;

All the other cavers for putting up with my uncouth Antipodean behaviour;

Trusty guides Mr Phong, Mr Linh, Mr Kanh and the others whose names I've forgotten or with whom I didn't have the pleasure of trekking;

All the poor young lads of Quảng Bình province who get to drag our food and ropes around the countryside for us and then cook up spectacular, although a little predictable after twelve days, fare in two pots on an open fire;

And the University of Hanoi for sorting out visas (most of the time), permissions and interpreting.

REFERENCE

Wailes, T. 2009. 'Khe Tien, East of Ban Ban, Vietnam 1997'. *Caves Australia* **178:** 7-11

Cliefden Struggle Continues

Ian Curtis
OSS

IN THE last *Caves Australia* (No. 198) I wrote of the alarm that has been caused by the NSW state government's proposals to build a new dam on the Belubula River and our fear that this will inundate much of the Cliefden cave system.

I outlined what will be lost if the proposed dam is built—decorated caves, a hot spring, tufa dams, bat habitat and maternity sites, Fossil Hill, a scientific research site, cultural sites both indigenous and early colonial, valuable agricultural land—and the steps initiated to fight this proposal.

The Save Cliefden Caves Committee (SCCC), formed in July by OSS in conjunction with the NSW Speleological Council to organise the defence, has proven unwieldy, and split into two: a Sydney group, working through the Nature Conservation Council, and a local group headed by OSS and supported by the NSWSC and ASF.

So, what's been happening since August?

OSS has incorporated and its web page is up and working.

A Save Cliefden Caves Appeal has been launched through the ASF Karst Conservation Fund; money is needed to fund scientific projects and may be needed for a legal challenge.

The mapping program led by Phil Maynard (SUSS) and Bruce Howlett (OSS) has begun and several major caves (Taplow Maze and Main Cliefden among them) have already been remapped. The last mapping of Taplow Maze, 3 km long, took five years. This time it has taken a week and a weekend.

Dr Robert Zlot, funded by the ASF Karst Conservation Fund, has been to the area and demonstrated his Zebedee 3D laser mapping machine. The ABC 7.30 NSW Report on the caves, organised by the SCCC, demonstrated this machine in action.

As much of the footage was from the air, it gave to the viewing audience an idea of the rugged beauty and valuable agricultural land to be lost as well as showing several chambers in Main Cliefden. The program engendered much local interest and has led to contact with environmental and scientific groups.

A National Parks and Wildlife Service Karst Assessment Report on the value of karst outside National Parks, obtained through an FOI request, shows that Cliefden has been accorded the highest international ranking of any limestone area outside the NSW Parks estate.

OSS presented our submission to the NSW State Water Corporation about our concerns at the building of the dam and the loss of the caves. We were granted a two-hour interview with the appraisal team. As this team has to submit recommendations to the Minister by the end of the year, we had been preparing for this since the announcement was first made. The team emphasised repeatedly to us that the Needles was only one of thirteen sites being examined and that several engineering, environmental and social criteria have to be met.

OSS held a meeting with NSW NPWS and presented a submission to them as well. Their OEH karst report on the value of Cliefden was central to our discussions. We made them aware of our submission to the NSW State Water Corporation and updated them on new scientific investigations under way and planned at Cliefden. NPWS was due to be consulted by State Water in relation to the Needles Dam proposal.

The Central West Environment Council (CWEC) in consultation with OSS called a public meeting in Orange and speakers from several bodies, including the Nature Conservation Council, the Inland Rivers Network, the Save Cliefden Caves Association and OSS, spoke at that meeting. A show of hands declared overwhelmingly that the audience (well over 100 people on a Tuesday night) were opposed to the building of a dam and were supportive of efforts to save the caves. Several newspaper articles have resulted from that meeting.

Meetings have been arranged between OSS representatives and state politicians and decision-makers. Questions have been asked of the Minister in the NSW Legislative Council and answers have been received in writing. Two scientific studies are under way: a bat study and a geomorphology study. Other new research is planned for early in the new year.

BAT STUDY

There has been no recent bat study west of the mountains, although it is known that several caves at Cliefden are home to bat populations. A study by Dr Meredith Brainwood is seeking to determine the number and species of bats present. A pilot study has commenced with anabat detectors being placed outside a number of caves and along the river corridor.

Preliminary analysis of results has revealed an unexpectedly high number of calls. Six species of bats have been noted. Two are listed as threatened under the *Threatened Species Conservation Act 1995*. The next stage in the study, a look at maternity sites, will commence shortly.

GEOMORPHOLOGY STUDY

This is a research project on the geomorphology and hydrology of the caves and karst. It is looking at the relationships between the caves and the surface landforms —a study of the source of water that dissolved the caves. Did it come from shallow percolation through the soil picking up carbonic acid and draining down to dissolve passages, or was it forced up from below, either through geothermal warming or artesian pressure picking up deep-sourced acid juvenile CO_2-sourced carbonic acid or sulphuric acid from oxidised pyrites?

There have been several important studies at Cliefden over the past few years. In the next *Caves Australia* I'll give a brief outline of them.

State Water's recommendation report for the preferred dam site (thirteen possibilities) is due in before the end of the year. The NSW state election is in March 2015. Politicians and the media, local and metropolitan, are aware of the values of these caves and of local dissent.

The next stage in the process is that the government will endorse a site and a detailed environmental assessment will begin. It is estimated that this may take up to two years. We have to maintain the rage and keep this issue on the agenda of all decision makers.

Donations to the ASF Karst Conservation Fund's Save Cliefden Caves Appeal are vital to fund new research initiatives and to further the campaign. Remember, all donations over $2 are tax deductible. Donations directed to the appeal should make reference to Cliefden Caves.

Thanks to everyone for their support. This is a struggle OSS and the ASF must win.

Cliefden Doline Restoration

Ian Curtis
OSS

THE AGM in February 2006 saw OSS cleaning out the Cliefden caving hut. The hut had become, over the years, the place where cavers, visiting and local, brought stuff that was no longer wanted but not quite at the throwing-to-the-tip stage.

A trailer had been brought over from Orange and dead stoves—six of them—were loaded into it to take to the Orange recycler. Two had been brought down from the shed near the ruins of Bruce Dunhill's old house. While up there rummaging through old domestic rubbish, attention turned to the nearby rubbish tip, in a doline, which, the oldest members recollected, had a cave in it 'full of dead sheep'.

An old UNSWSS map was remembered, too, and we had visited the cave even earlier, in the 1970s. A quick trip to the doline revealed much more recent domestic rubbish, piled high in a doline maybe 30 metres by 10 metres. That day, planning began for the doline cleanout—a task that was to take several years.

December that year saw the commencement of the cleanup; first, glass and cans for the Orange recycler. We couldn't easily get at the hole because of the assorted rubbish around the perimeter, so the plan was to clear the surrounds first.

Between Friday and Sunday Denis and I walked around and around the rubbish pile, collecting aluminium cans and throwing, catching, then dropping bottles into wheelie bins and crushing them there with a sledgehammer. By the end of the weekend both of us could catch, either hand, a longneck thrown from anywhere in the hole to the other in the trailer perched as close to the hole as we could safely manoeuvre.

Eight hundred kilograms of glass were smashed (the recyclers didn't want full bottles); 29 kg of flattened cans; 2 kg of brass and 2 kg of copper. Our weekend earned us $71.50. The glass, offloaded from the trailer with a forklift, brought us $16—2¢ a kilo. This was going to take some time and we hadn't even made a dent in the rubbish pile!

IAN CURTIS

The rubbish-filled doline

Several trips to the doline had revealed the composition of the rubbish. The centre of the large doline was filled with early agricultural stuff—rusty 5- and 44-gallon drums, wire, corrugated iron, old lawnmowers.

On top were many blue chlorine containers, scattered haphazardly. Bottles, mainly longnecks, were chucked on top and were scattered all around the edges and many had slumped into the hole.

On the sides, too, were old fridges and washing machines, piles of fibro and old bricks. Nearby were two dumped cars. At one end of the doline was recent domestic rubbish, loaded in agricultural bags. Beneath, unknown metres deep, were the results of earlier burnings: much ash and half-burnt and melted refuse.

January 2007 saw the OSS scavengers at the Mt Gambier ASF Conference. A trip to Circuit Sinkhole (L-136D) there saw us casting a professional eye over the 40 m deep doline previously used as a rubbish dump, cleaned out in 2005. Using excavators, 500 tonnes of waste fill and 70 tonnes of scrap metal had been removed in that cleanout.

Our doline wasn't on that scale, but would we need an excavator? We thought so, but didn't have the kind of money to hire one. Should we approach the ASF for a grant? That might take too long. We kept going as we were in the meantime and tried to earn enough from the recycling to pay for what we might need. A visit to Glen Dhu Cave at Timor while at the NSW Speleo Council Meeting there in May showed how a property rubbish tip, though much smaller than ours, could be cleaned by enthusiastic volunteers.

Resource Recovery Day #2 that July saw us looking for stuff that could be turned into money. We hammered tins, collected bottles and picked through all the forsaken bits of broken and burnt machinery.

Washing machines were disassembled, cans collected and hungry boards of rusty corrugated iron were found for the trailer. A fire was lit to burn off wooden droppers entangled in rolls of wire. With storm clouds gathering overhead, rays of sunlight slanting in from the west, flames leaping through burning coils of wire and smoke billowing up into the air, the place brought to mind those images of Dante's *Inferno*. Late that afternoon, hauling out a rusty old 44-gallon drum near the trailer, it was there: the drop. Collection paused.

A torch revealed about a 3m drop and a rift which continued under the wire. Analysis of the hole suggested that wire was protecting a long deep chasm from all the years of rubbish dumped on top. Entry was discussed, but all agreed it would be best to leave entering till next visit as there was

IAN CURTIS

'The Pit' unearthed

too much loose debris around the intended entry point

Flattening and throwing continued until we were forced to stop by darkness and a very full trailer. We crawled home in the dark, cursing Denis for not having fixed the Land Cruiser heater, broken for so many years.

After ringing around the nearby towns the next morning to compare metal prices, the lot was taken to the Orange Recyclers where we received the princely payment of $190.65.

We debated approaching Denis's son to borrow his 3-tonne truck to remove the mountains of domestic rubbish, the money probably being enough for petrol and tip fees. Getting it on the truck? We'd discuss with Anthony whether he could help with the scoop on his tractor.

How could we generate more money? Scrounging near home provided the answer.

In the local Mullion Creek Forest I had come upon several dumped and stripped cars. A Suzuki shell, crowbarred onto a groaning trailer, piled with bonnets, gearboxes and old car doors saw another $50.50 in the account.

Denis's son would lend us the truck, though it had to be at his place unloaded and filled with petrol by 6am on Monday morning. Anthony, ever helpful, was OK with the farm tractor. Friday night, towing an empty 7 x 5 trailer (with incompatible electric connections), saw us sneaking out of town down the back roads and across to Cliefden. Anthony was lined up for the next morning, early.

The tractor made the difference. Drum flattening? No problem. Until then we had been cutting out the tops and bottoms and then using a sledgehammer. Effective, but pretty slow. That morning we lined up every drum we could find in two parallel lines two metres apart and Anthony reversed the tractor. Hey presto! Flat drums. Anthony then got his scoop, drove into the rubbish and started filling the truck. It was effortlessly filled and Denis and I slowly headed for the Blayney tip, the nearest, about 20 km distant. Bruce was left to sort out more bottles and cut the tops out of the remaining rusty 44-gallon drums.

On our return after lunch the truck was loaded again and the trailer loaded with drums filled with full bottles. The Blayney tip was only interested in unbroken bottles. We sneaked into the tip as it was closing at 4.30 p.m.

It was taking an hour for us to drive there and half an hour to unload. On returning, Anthony expeditiously filled the truck for the third time, and on dark we nursed it down the hill to the hut. The following morning we drove the Land Cruiser up to the tip and loaded and attached the trailer, driving it to the tip just before lunch.

Back to the cottage. Lunch. Hut cleanup. Packing. Back to the tip. This time we were loading the truck with metal to take back to the Orange Recyclers. Hammering of tins. Throwing of steel. The truck filled to overflowing and still much, much more left. Only Denis and I were left now. Heavy fridges and washing machines and more metal were loaded into the trailer. By 5pm I had had enough. Leaving Swampy to tie down, I went back to the entrance hole we peered into last July. It was time to enter. The surrounds were cleared and the ladder dropped down the expected 3 metres into the void. It wasn't long enough. We manufactured the needed extra metre and descended.

There was rubbish everywhere. The cave dropped to the north, away from the tip, with possibilities of a dig. There was a passage to the west leading to where the tractor had been working.

Denis thought he could probably fit when rubbish had been cleared away. Near the ladder was another possibility: rubbish above the ladder suggested a second entrance, choked, which had been the dumping hole in the past.

Examination of the debris revealed beer bottles dating from 1953 to 1969. There was no obvious graffiti.

We took photos and exited, finding the tag CL95. The tractor had started to sink in the debris as it excavated, suggesting a possible unknown second entrance at the far end of the doline. As well, removal of wire and tin in the centre of the doline, not connected to the tagged entrance, showed a drop underneath the wire. Almost certainly, that area of the doline had never been examined.

At about 6 o'clock, on dusk, we crawled the truck and trailer back home to Orange. Tip closed. Recycler closed.

As Denis's sons needed the truck for work in the morning, we unhitched the trailer and dumped the truck steel in my back yard to take to the recycler in the trailer over several trips.

The day? Nine cubic metres of rubbish were removed from the hole and two trailer loads of bottles. Blayney tip fees were $175.50 and we had put $75 worth of diesel in the truck. The recycler paid us $167.30 for the metal. We weren't far behind.

Back to the Forest. Two weeks later Denis and I returned there and loaded up the trailer with more metal—$67.90. Nearly there!

By this time Denis and I were becom-

IAN CURTIS

Lining up drums for crushing by the tractor

ing known as Steptoe and Son. We knew the price of all metals at the recyclers and the recyclers, too. Dave used to shudder when we delivered our rusty trailer loads, frequently observing that what we brought in should really all be going to the tip. I privately agreed with him, promising myself never to buy any speleo gear with 'made in China' stamped on it, just in case I'd ever seen it in a previous life.

That December we had our first setback. We arrived with the trailer to load up some steel and discovered new garbage had been dumped in the hole. An agitated visit to Anthony informed us that one of the other houses on the property must have used the tip, not knowing it was being cleaned. He would sort it out. End of problem.

Every Cliefden trip now was ending with something being cleaned out of the doline/hole and an attempt made to find something of value to take back to the recycler. As Denis and I have no garbage service where we live, each trip entailed collecting rubbish in wheelie bins and depositing the rubbish into someone's— a friend's or a relative's—bin in town. Visitors, too, were all pressed into service. We kept whittling away at the hole.

What to do with the bricks and concrete? Anthony said he would like them to go into a washout in Copper Mine Creek. The wet weather was eroding the banks and undercutting the tree roots. A tip working bee in August 2008 saw us relocating three trailer loads of bricks into Anthony's gully.

Our major breakthrough came early in 2009. Anthony told us he had an excavator coming on to the property to do some work for him and asked OSS if we could use it. We certainly could, but we were concerned about the cost, explaining to Anthony that we only had just over $300 and we feared that the machine would cost much more than that for what would probably be at least a day's work.

He said he would talk to the operator and where would we like the rubbish if he agreed? We wanted it near the hole but away from the doline.

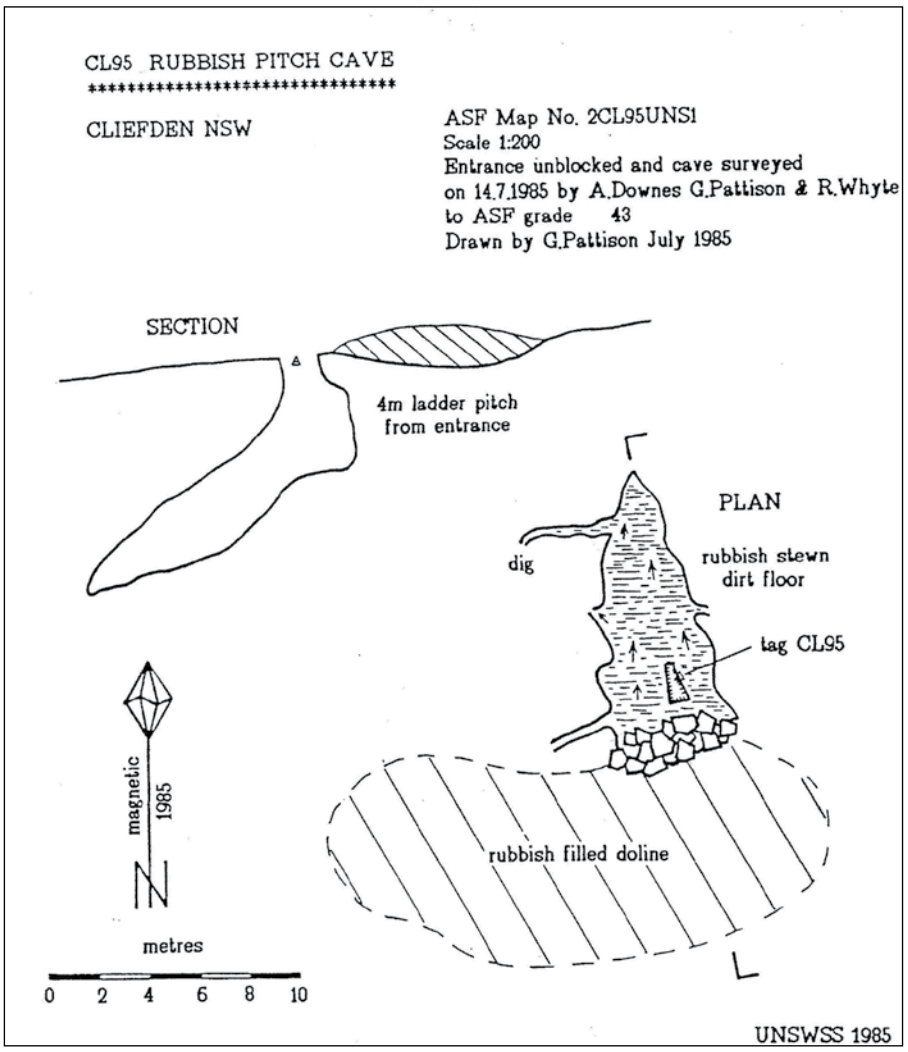
Our March trip revealed a completely cleaned-out hole. We marvelled at the impressive hill of rubbish which had appeared nearby, though scatterings of glass and rubbish had been pushed into what were now two cave entrances.

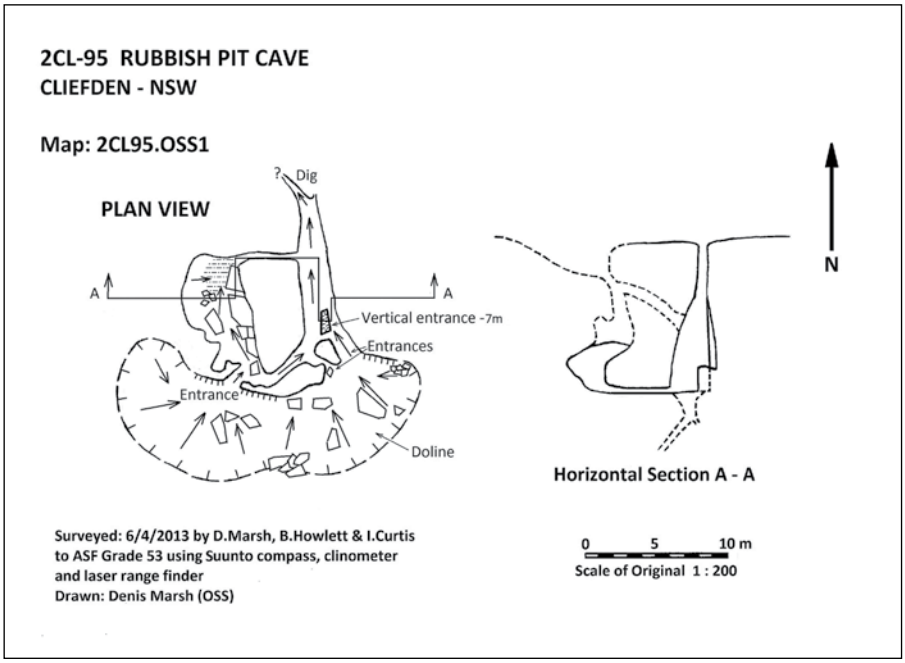
The holes were explored and willing members quickly filled up six wheelie bins of bottles. Even better, though, the excavator cost had been $300, the work having taken little more than an hour at the end of a day's work.

Small mop-up trips at the end of caving days became a regular feature of our subsequent Cliefden visits, and in December 2010 mapping and sketching of the doline began.

Strangely, in 2011 and 2012, no cleaning or mapping trips took place, but in April 2013 a day was spent finishing the map and removing as much of the rubbish fallen down the hole as we could fit into a trailer in a day's work.

The hole had been cleared and the exercise had paid for itself. Even more importantly, we had broken a cycle of behaviour on karst which had persisted for several generations.





Jenolan Caves: The complete guide

Book review by Andy Spate

ISBN 9780987588906

LINDA—your dad has done you proud![1] Mark Hallinan has produced a wonderful guide to the Jenolan Caves.

This book ranks with *Beneath the Surface: A natural history of Australian caves* (Brian Finlayson and Elery Hamilton-Smith, 2003, (eds.), University of New South Wales Press) as one of the two 'best'"books on Australian caves. *Jenolan Caves* wins hands down on a tourism-orientated rather than scientific approach. Each has its place. However, the science in Hallinan's book is remarkably well done.

This profusely illustrated guide to the world-famous Jenolan Caves is a remarkable book on many fronts. Conceived as a project to fill a gap year, it clearly grew into a much grander concept.

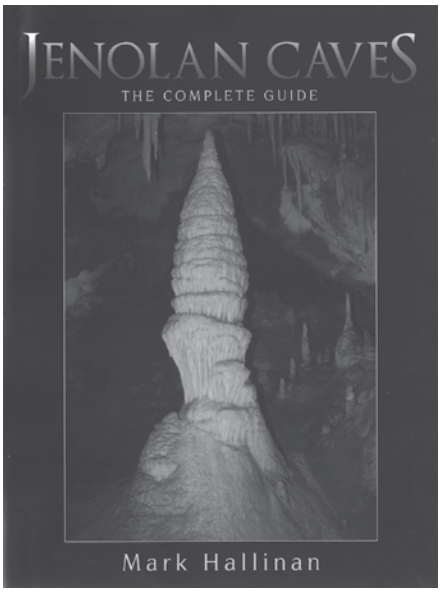
Its 268 pages include early 20th century coloured maps of the Jenolan Caves (by Oliver Trickett, 1925, front endpaper) and the Blue Mountains (Oliver Trickett, 1909, rear endpaper); seven major chapters; several appendices, about 130 comprehensive endnotes and a fine index. The latter often seems to be lacking in many modern books.

The book is unashamedly a guidebook rather than a scientific treatise. However, the scientific aspects are described and illustrated in simple terms with excellent diagrams.

When I say profusely illustrated, I mean it. Almost every page has an excellent photograph, map, diagram or other illustration either on or opposite. Many are in colour except, of course, historical black and whites, of which there are many. It is printed in China on very high quality paper.

The chapters are as follows:

Chapter 1. Introducing Jenolan Caves;
Chapter 2. Hidden in the Mountains;
Chapter 3. Caves – Rock, Water and Time;
Chapter 4. Cave Formations – Speleothems;
Chapter 5. Experiencing the Caves over Time;



Chapter 6. The Show Caves of Jenolan; and
Chapter 7. The Jenolan Surrounds.

The chapter contents are self-explanatory except perhaps for Chapters 2, 5 and 7. Chapter 2 deals with matters of geography (location, access, geology, climate, vegetation, etc.). Chapter 5 encompasses man's involvement from 45,000 years ago through to 1788 and beyond to 2010. Chapter 7 looks at the extinct megafauna, plant communities, vertebrates and invertebrates found at Jenolan.

The appendices cover the Gundungurra dreamtime story, cave chemistry and dating of Jenolan Caves—an eclectic collection!. There are suggestions for further reading and both a prologue and a postscript.

Mark Hallinan's book covers the entire Jenolan scene. It is the most comprehensive book on any Australian cave system yet published but it is largely confined to the show caves with only a few lines devoted to a few of the 'wild' caves used for adventure tours. This may well be a deliberate approach.

The discussions on geology and the development of speleothems are more than adequate but there are only a few pages on the development on the cave system, perhaps because it is too complex and there has been no real synthesis of this for Jenolan as yet.

I have three minor quibbles.

First, the book gives the impression that there are "nursery" (maternity) caves for the Eastern bent-wing bat *(Miniopterus schreibersii oceanensis*) at Jenolan. If one or more are at Jenolan, they have not yet been identified. One cave in the southern limestone may be a so-called staging cave used by bats en route to a maternity cave; a cave off the Devils Coachhouse may be another.

My second quibble is about the strange capitalisations in Appendix 2: Cave Chemistry, for example '… Water, Carbon Dioxide and solid Calcium Carbonate.'

Third, there could well have been mention of the various forest bats as well as the two cave-dependent species.

These personal nitpickings aside, the book is to be thoroughly recommended to those interested in Jenolan Caves and indeed to the wider community interested in caves and other natural phenomena in Australia and elsewhere.

In addition, it will be of interest to those interested in matters historical, ranging from 45,000 years ago to the present. It is available in a remarkable variety of formats ranging from the handsome hard cover version (RRP $64.95) to a CD (RRP $24.95) and as an ebook from Amazon, Apple and Google. There is also a 36-page souvenir picture book of the most stunning sights of caves: *Jenolan Caves—The Best of the Best* (RRP $19.95). They are available from Critical Concepts Press, PO Box 8166, Woolloongabba, QLD 4102; from selected bookshops; at Jenolan, obviously; and at sales@jenolancavescompleteguide.com.au

Published by Critical Concepts Pty Ltd, Brisbane, 2013, 268 pp, images, diagrams, endpapers. See jenolancavescompleteguide.com.au for more details.

1. Mark has dedicated his book to his daughter, Linda, in the following words: 'in recognition of the fact that each of us are only guardians of this planet until it is our turn to hand over to those who come after us. My generation is proud of the efforts of those who looked after Jenolan Caves before us. I only hope that your generation will be just as proud'.

Messy Politics

Nicholas White

FEDERAL environmental politics has become very messy. The Federal Coalition Government is in denial of impacts changing climate might have on Australia.

It wishes to assign all its hard-fought environmental controls to the States through bilateral agreements but constrain their ability to manage by monetary and taxing controls.

The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) was a landmark act which provided protection for endangered species and ecosystems.

Both NSW and WA have strong parallel legislation and use it, but other States are inconsistent in using it.

In WA the Aquatic Root Mat Communities on the Leeuwin Naturaliste Ridge are listed under the EPBC Act.

In NSW the objections to the development of a limestone mine at Timor rested largely on the presence of the White Box-Yellow Box-Blakely's Red Gum grassy woodland, which was listed as an Endangered Ecological Community at State and Federal level.

This mine would have affected the water aquifer and the objection also depended on protection of stygofauna in the water.

Protection of such communities depends on vigilance. The determination on the Newcastle Hunter Valley Speleological Society objections allowed the mine to proceed subject to stringent conditions provided to protect the recognised biological values.

As background to this, the Australian Constitution does not directly permit the Commonwealth to legislate in respect of sites other than those that fall within its own jurisdiction.

However, where Australia enters into international agreements, the Commonwealth can legislate to protect sites of certain categories.

Australia is a signatory to a number of important International conventions, including the Convention concerning the Protection of the World Cultural and Natural Heritage, the Ramsar Convention and the Convention on Biological Diversity, among others. The Australian Heritage Commission was established in 1975 after an inquiry into the condition of the National Estate. This Commission was responsible for the Register of the National Estate. Its ambit covered responsibility for natural, cultural and historic places in Australia.

These Federal initiatives followed from the inquiry and established the commonality of Australia's heritage in that what was important extended beyond State borders.

It was landmark legislation that provided for environmental protection and management.

But by 1996 there was criticism that the process of listing places under the National Estate had created duplication of effort in some areas, and had left complete gaps in others, causing confusion and unnecessary conflict.

A review of Commonwealth/State roles and responsibilities for the environment conducted by the Council of Australian Governments (COAG), and reform of Commonwealth environment and heritage legislation occurred.

This resulted in replacing the National Estate legislation with National Heritage Legislation focused on places important nationally and with the enactment of the *Environmental Protection and Biodiversity Act 1999.*

The EPBC Act was founded on a 1997 COAG agreement by the Commonwealth with the individual States.

However, it is reasonably clear that the Commonwealth has jurisdiction over matters of areas with national and international values.

Of concern to us is the abrogation of administration of such jurisdiction to the States where there is a very patchy, to say the least, interest or action in making sure that matters are managed adequately and properly. The other major deficiency with the EPBC Act is that despite the first object of the Act being:

"to provide for the protection of the environment, especially those aspects of the environment that are matters of national environmental significance;"

the Act has been interpreted as only providing responsibilities for protection of the biological estate.

The National Heritage legislation provides for places important nationally. It is time that the caving community decided what was nationally important and focused on having such places recognised.

The present Federal Government has tried to reduce the 'green' tape and bureaucracy of environmental regulation by divesting responsibility for environmental controls to the States.

It attempted to do this with a bill to amend the EPBC Act to provide bilateral agreements with each State to provide for State assessment of the EPBC Act provisions.

This was described as a 'one stop shop' which would reduce the complexity of development approval processes.

The Senate rejected this legislation in October 2014, as it would have left the States making decisions about matters without reference to the Commonwealth.

Environmental matters do not stop at State borders and a uniform approach given the different laws in each of the states would have led, not to uniform and consistent decision making, but to arbitrary decisions based on local factors.

States do not put matters of national interest before their own sponsored projects. Both Federal and State governments have reduced staffing levels in Departments of Environment and in Parks Services.

Is this the way of working smarter with smaller staff numbers, or will it lead to a failure to perform the responsibilities the Departments are legislatively responsible for?

A study of the Victorian Auditor-General's Report for the Departments of Primary Industries (DPI) and Sustainability and Environment (DSE) in 2012 revealed severe shortcomings in the ability to answer whether they were discharging their statutory requirements under the legislation they operated under.

This is a serious indictment when the departments manage land, parks, and forests and are responsible for protecting a healthy environment and effectively managing natural resources.

The Departments did not know at a central level whether their programs were effective in protecting biodiversity or endangered species.

Could the same apply in other States or Federally? Is this just poor governance or symptomatic of Australian culture?

Would increased budgets to protect caves, natural areas and endangered species change the outcomes over time or are more accountable bureaucracies the answer?

The Queensland Government has made changes to its mining laws. These have the effect of reducing the ability to object to lease applications on environmental grounds. This is a rejection of rights established in the High Court determination on Mt Etna that provided for standing to objectors, even though the right was not affordable.

A case of relevance to ASF is that of Melody Rocks, on Kings Plain Station, north-west of Cooktown on the Cape York Peninsula.

This is a tower karst area with a permanent spring. A number of bat species have been recorded from the caves, including several listed as endangered under the EPBC Act.

There is an application for mining the limestone.

The changed mining laws would restrict objections in the public interest by individuals or the ASF.

Our initial objection to the mining elicited a good response from the Queensland Minister for the Environment; however, the Federal Minister for the Environment, the Hon. Greg Hunt MP, failed to acknowledge the objection asking that EPBC Act processes be invoked to protect the endangered bats.

We are in a period of budget stringency. One of the lessons from the give and take of left and right politics is that persistence can and will bring rewards. We want them to be our rewards in favour of good environmental objectives and not the latest bandwagon of developers wanting Federal support.

An example of this is the Cliefden Dam proposal, which is a nonsense when the water uses in the catchment are already beyond sustainable limits.

The communities have sufficient water; however, there is insufficient natural rainwater or groundwater for increased mineral extraction, treatment or piping ore slurry.

The values of the Cliefden landscape, the fossils in the Ordovician host rocks, the caves and their contents and associated biota, together with a legacy of Indigenous and historical use of the area should preclude the construction of a dam which would flood the caves.

CONCLUSION

It is important that in the current political climate we should remain alert, if not alarmed.

We need to put forward more karst and cave sites for National Heritage listing and to remain vigilant at local, State and Federal levels to fight inappropriate developments and insist on better management by authorities.

The EPBC Act provides for the protection of biota. More study and research of the invertebrates and the bats that inhabit and are dependent on caves should be undertaken.

Only the caving community can undertake and foster this. The ASF Karst Conservation Fund provides the capacity for us to raise funds and spend them on the protection of the cave and karst environments of Australia.

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