

CAVES

The Journal of the Australian Speleological Federation Inc.

AUSTRALIA



**EXPLORING ELK RIVER
COVID CAVING, VIETNAM 2020 • THE WONDERS OF CAVING
EXIT CAVE DIVE**

No. 213 • SEPTEMBER 2020

COMING EVENTS

WITH THE advent of the COVID-19 pandemic there is little point in publishing a detailed forward programme of speleological events. Things are being cancelled and postponed across the board and if you have your eye on any particular event then it is recommended that you investigate closely if it is still scheduled (and if you can safely travel there and back). Information on UIS-sanctioned events can be viewed at <http://tinyurl.com/y7rgb8ah>

Don't forget that 2021 will be the International Year of Caves and Karst. You can find more information about what's going on and what you can do to help the cause at <http://iyck2021.org/>

EDITORIAL

2020 continues to drag, particularly for everyone in lockdown in Victoria and cavers in NSW who are free to do almost anything EXCEPT caving.

Traditionally I'd argue that not being able to head out and go caving in Victoria isn't really much of a loss but Peter Freeman sets that view aside with part one of his account of the exploration of Elk River Cave at Buchan in this issue. What really stands out for me with the Elk River story is not the feats of exploration put in by the various people over the progressive phases (all worthy and impressive, certainly) but the dedication and tenacity shown by Peter to systematically document and map it all. So many good bouts of hard exploration fail to be properly drawn and written up but the full account of Elk River Cave, *The Discovery and Exploration of The Murrindal Potholes Eastern Master Cave* and its accompanying map atlas, from which this and next issue's condensed accounts are drawn, is a nearly 100-page masterpiece in cave exploration documentation and Peter should be immensely proud of his efforts. A benchmark has been set. I encourage you to contact Peter and ask for a copy of the full work, but obviously not until you've finished reading about it in *Caves Australia!*

To balance Peter's good work there's a solid whack of self-deprecating nonsense on the 2020 British expedition to Vietnam. It's important to have a laugh while the world around you descends into chaos.

I hope to be talking about the joy of the end of the second wave in Australia and opening borders, a semi-functioning United States and some warmer weather come the December issue.

— Alan Jackson

President's Report

CAVING, along with rest of everything in Australia, is facing some interesting times during 2020 that may continue well into 2021.

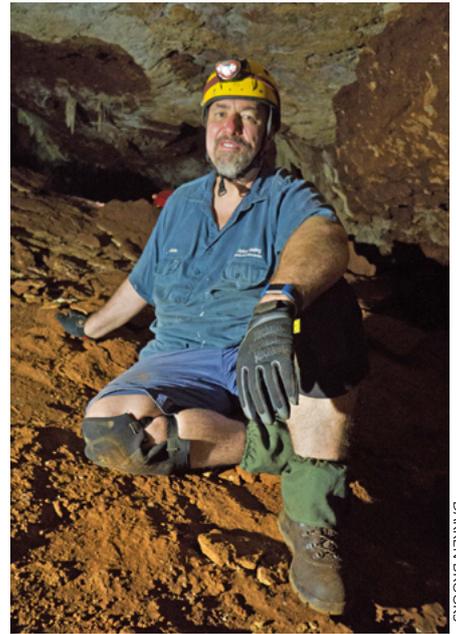
Depending on where you reside, you may not be able to get out and enjoy caving or even having a face-to-face meeting of your club, but in some locations it is almost business as usual.

Please always follow the advice or instructions of your state jurisdiction regarding COVID-19 so that we can get underground quicker.

Next year has been nominated by the UIS as the International Year of Cave and Karst. The ASF is providing grants of up to \$250 dollar for dollar, one grant per club, to assist with marketing or promotion of your club. Please see *Espeleo* 2020 issue 4 for more details and take up the offer to promote caving in your area.

The ASF Executive has been busy working on the Strategic Plan but have been concentrating on the formulation of the Business Plan aspect that will be sent to clubs in the future.

The upcoming annual Council meeting will be held on line using a video meeting via Webex. More information will be sent to your club about protocols and testing your



DARREN BROOKS

computer closer to the meeting.

A new ASF President will be elected at this meeting as my third term comes to an end and as per the constitution I am ineligible to stand again. Please use the nomination form attached to the agenda and submit your nomination.

Stay safe and well

— John Cugley

Call for Information – Muller Range, PNG 1973

Van Watson and Paul Caffyn are writing a book on the 1973 caving expedition to the Muller Range, Papua New Guinea. They would like to contact anyone involved with the expedition, including: Jerry Atkinson, Tony Dowling, Jane Dyson, Andrew Pavey, Mark Rogerson, Rosemary Nicholls, Peter Shaw, Alex Pozenoff and Andy & Judy Pybus. If you know the whereabouts of any of these people please let us know at asf.caves.info@gmail.com and we'll put you in touch with Van.

CAVES AUSTRALIA

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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.

The Exploration of Elk River

Part 1

Peter Freeman
VSA

IN JUNE 2017 the epic underwater explorations in Elk River Cave, at Buchan in Victoria, halted after lasting for eleven years.

For the foreseeable future matters will rest here, and so, as the promoter of the first diving project and a participant in most of the cave visits for ten years, I'll tell you the story.

The most exciting roles have been for cave divers, to whose ranks I don't belong, and so most events — all those that occurred underwater or beyond the sumps — are related second-hand.

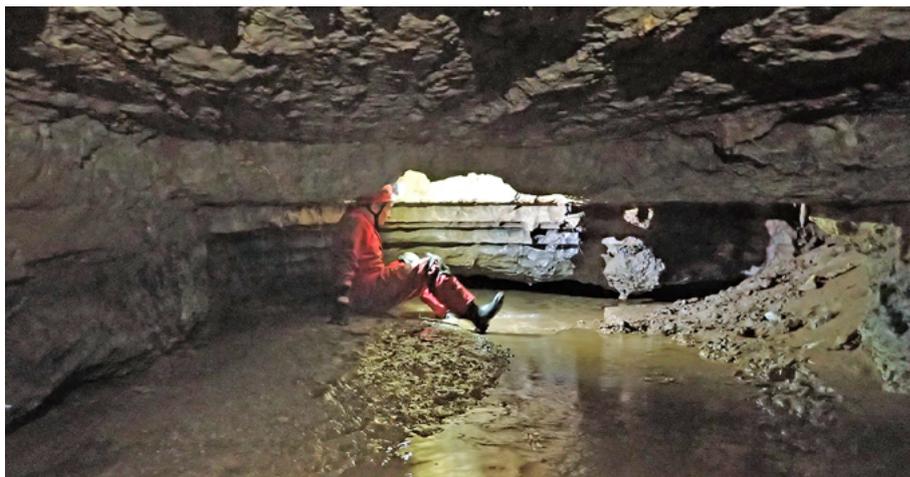
Nevertheless, this cave was an important part of my speleo career, as it was for several others regularly involved, and despite never having actually seen the parts that lie beyond either of the original sumps, I feel that I know it well. One of my roles has been the progressive compilation of the map, which required me to carefully listen to the divers' accounts and descriptions. Not only to listen, but also, via the map, to provide them with feedback that might direct their activities.

PROLOGUE

Buchan has always been the main destination for Victorian cavers. Close to the town is the 3 km-long Buchan Caves system, shown commercially to the public. It was discovered by excavation around the turn of the twentieth century by the father of caving there, Frank Moon.

Less well known is that Moon explored extensively in the area that eventually became the Murrindal Potholes Reserve, a few kilometres to the north and at a higher elevation. Amongst his many finds up there was the cave that is now numbered M14 ('M' for Murrindal) and which the 1970s cavers named 'Baby Berger'.

Although impressed by the magnificent 40 m main pitch, as everyone is, Moon noted it as 'another duffer' — meaning that it didn't lead into an extensive system such as he had opened up near the Buchan township.



Elk 1: The Original Streamway



The Elk Antler

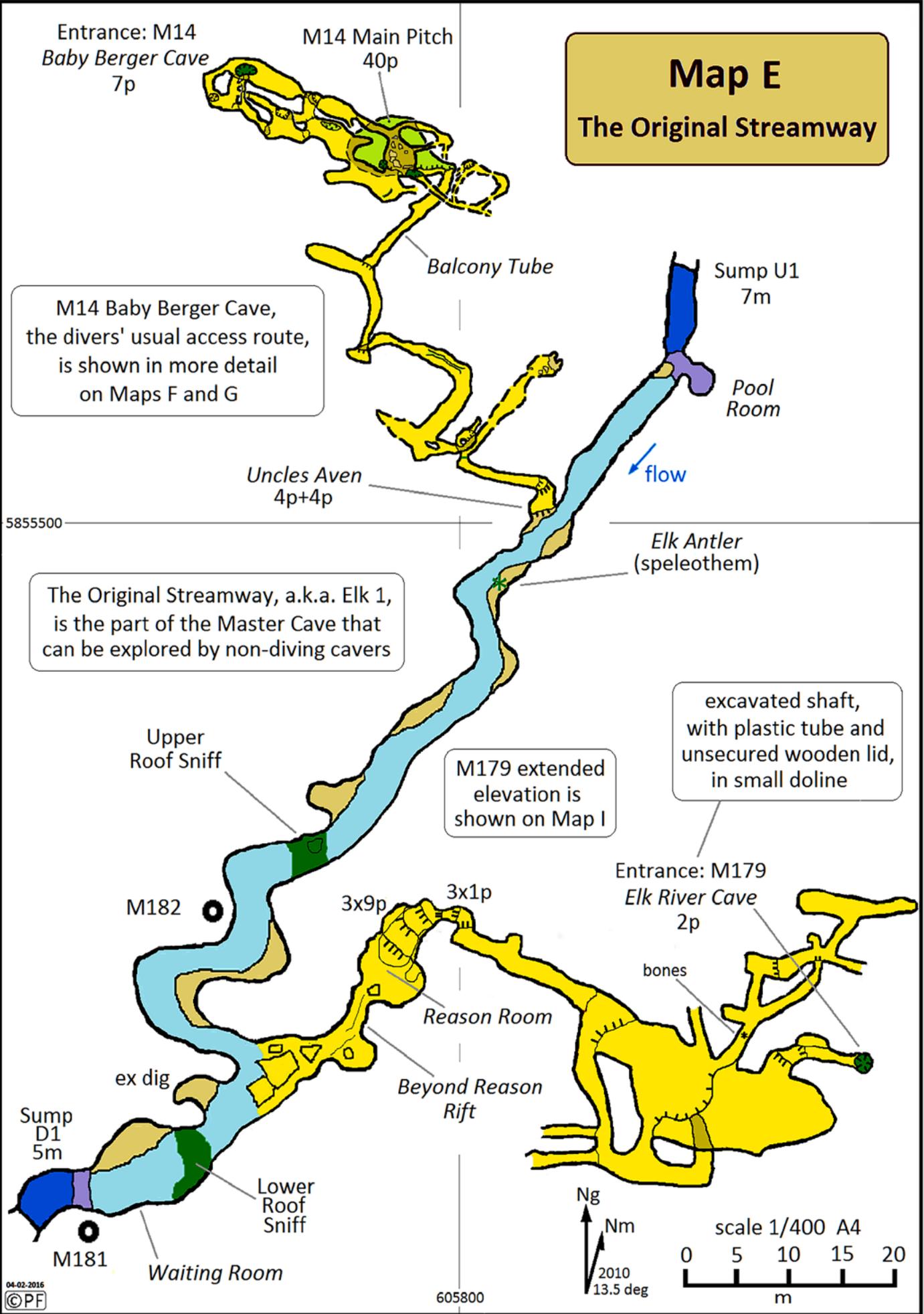
However, an extensive system that drains the eastern part of Murrindal did exist. Its connection was open and it was in Baby Berger. For the next century, as hundreds of cavers visited this favourite pothole, descending and ascending the big shaft, they unwittingly passed by that connection, just metres away. A few came close, and at least one literally left footprints on the Balcony. However, unbelievable as it seems now, the narrow onward lead was too uninviting to tempt anyone further.

My Australian caving career, following long after a previous one in the UK, began in 2004. I soon became very familiar with the Buchan/Murrindal area and all of its worthwhile caves and potholes. In my mind was always the question 'Where is the main system? The one that takes the water away from this high karst area? The Master Cave?' I was not the first to wonder, but no-one knew the answer.

I first saw the inside of M14 on 21 August 2005, quite easily reaching the



Map E
The Original Streamway

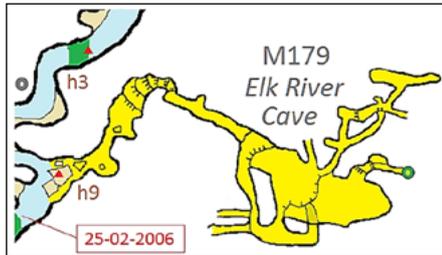


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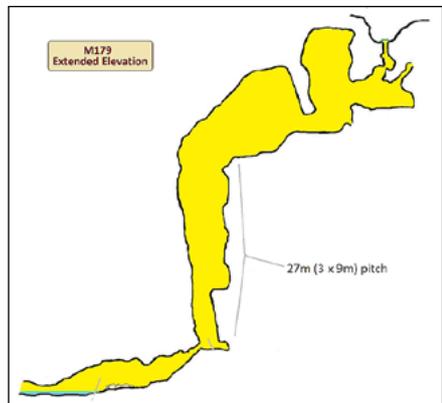
bottom of the cave - or so we, and everyone else then, believed. I eventually scored a total of 39 visits over thirteen years, which is probably a record.

THE DISCOVERY

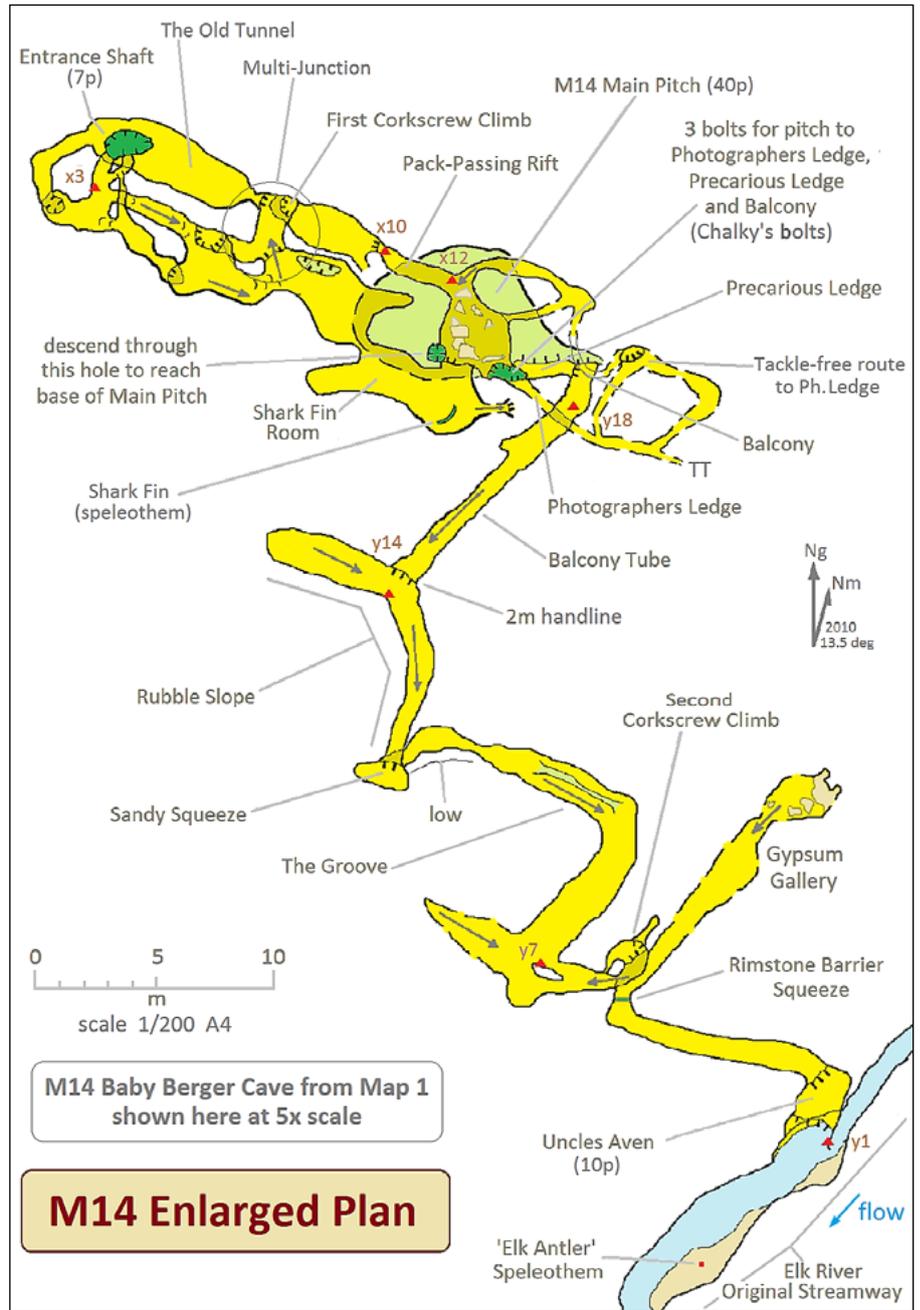
The Murrindal Potholes Reserve had no 'great' caves, but it did have an amazing quantity of lesser ones, mainly vertical. These provided good sport and practice for novice cavers. Since the 1960s it had yielded many surprises; through persistent searching and often by excavation, the VSA found pothole after pothole. However, although the known geology and hydrology appeared to allow explorable caves to penetrate at least 120 m below the surface, even the best ones sputtered to an end at around half of that depth. Also, there was virtually no flowing water and relatively few horizontal extensions. So no cave records are to be expected here.



Kim and John Van Dyk had relocated from Melbourne to live in Buchan so that they could concentrate on their passion: finding and exploring new caves. They were the core of a tiny and cosy local caving club called the Victorian Limestone Caving Team. By 2000 most of the best new finds were VLCT's. On 27 January 2006 they began to dig open another draughting chink in the reserve's grassy karst surface. By 25 February it was wide enough for them to squeeze in.



On that first descent it seemed good, almost too good, but still they expected it to soon end in the usual way. Just as it should have done that, at 60 m depth, Kim stepped around a corner and all but walked into a gently flowing underground river. When her companions caught up she was quietly sitting on its bank. Within a couple more



visits they had found the full 138 m extent of the then-accessible streamway and one tantalising upwards branch.

The explorers on that first descent — Eric Munro, Laurie Brown and Kim — took the initial letters of their own first names and the new pothole became ELK River Cave. Finding a curious tripod-shaped speleothem and naming it 'The Elk Antler' later made this name more appropriate - and acceptable.

THE BABY BERGER CONNECTION

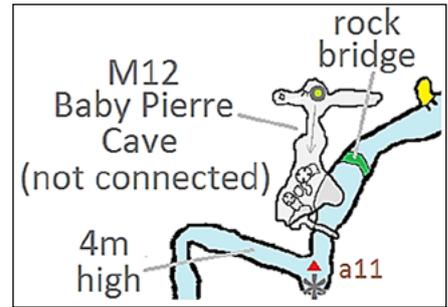
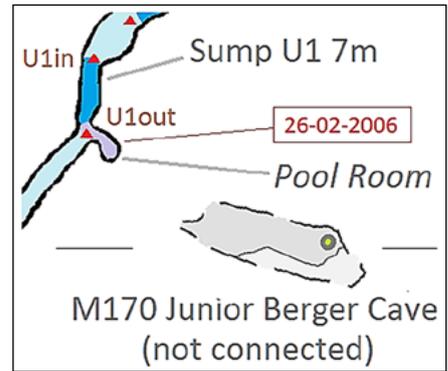
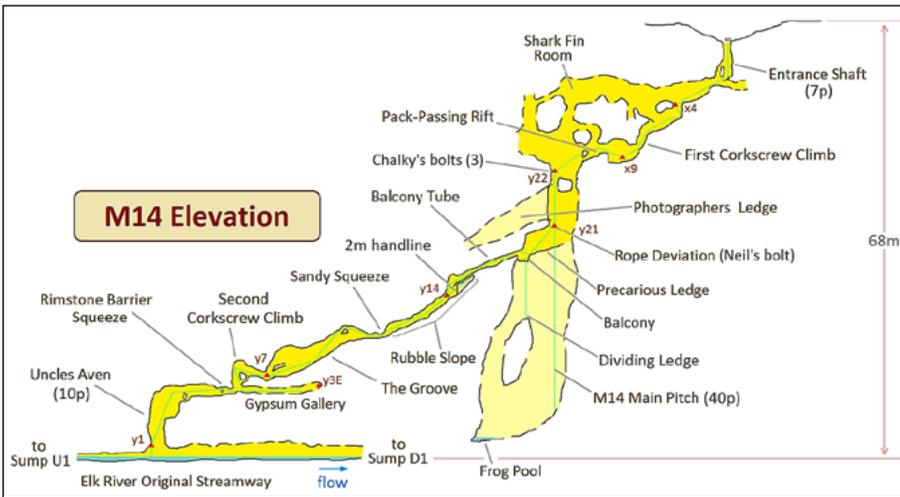
Those early Elk River explorations have been recounted in VLCT's own writings. I take up the story here with my first visit, which occurred in September 2006.

This VLCT visit, to which I had unexpectedly been invited, had two important aims. The first one would be an investigation of the downstream sump by Stewart

Germon. What the sump held in store for the diver was much more challenging than he could have expected: Stewart had done only a limited amount of cave diving, using an open water style back-mount rig, not a sump diver's side-mount. And so by the time Kim and I joined the others near the lower roof sniff he was returning from a brave but unsuccessful effort.

Laurie Brown, Josh Van Dyk and I set off in the already-explored upstream direction. We negotiated a roof sniff, passed by the intriguing Elk Antler and then beneath an aven before taking a quick look at the upstream sump. Backtracking twenty metres returned us to the base of the aven, which had adopted Eric Munro's nickname 'Uncle' since he had been the first to climb it. With Josh going first, we handlined up Uncles Aven. Proceeding farther up the cave, we reached the Rubble Slope, the far-point of

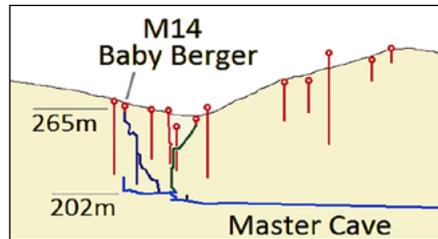




previous exploration. Laurie pointed out to Josh a difficult climb that was suspected to be close to the neighbouring Baby Berger Cave.

Josh achieved the tricky climb and entered Balcony Tube for the very first time. He soon disappeared out of earshot, so Laurie, with difficulty and with me providing him foothold support, made it into the bottom end of the Tube. It was still almost impossible to discern anything that Josh shouted down to us so we had to await his return. He told us that he'd stood on a 'balcony', where he'd seen some footprints, overlooking M14's main pitch. And so the desired connection had been made.

to a small alcove set neatly into the great shaft's wall. Seeing only a tiny aperture at the back of the alcove, he thought 'That can't be it.' Finding no other way, we exited from the cave and drove to Josh's home to ask for directions. He explained that it really was in the alcove that Eric had reached, so on the following day Laurie, Eric and I went back in. Laurie slithered down the Balcony Tube first. At the 2 m drop onto the Rubble Slope he clipped a short ladder to his handline and climbed down. Eric and I followed and we were soon at the streamway. Mission accomplished.



THE ELK RIVER CAVE DIVING PROJECT BEGINS

The Van Dyks, by early 2007, had declared that their exploration had gone as far as it could. I led another couple of visits, pushing hard at various points to bypass the sumps, but finally had to accept that I too had gone as far as I would go in this cave. From this time I was an observer and a helper.

Recruitment of dry support participants (equipment porters) was something I could do for the divers, as well as documenting and mapping their progress. The cave's surveyed length at this time was about 530 m, and the depth 65 m: not too bad for Buchan!

Naturally I was desperate to know what lay beyond the two terminal sumps, and so for some time I pondered how we might remove them. I also pondered where else we might gain access, but drew a blank after thoroughly checking out all the open caves and other karst features nearby. Obviously the problem would need to be addressed by

diving, but I felt no inclination to take up cave diving at this late stage in my life!

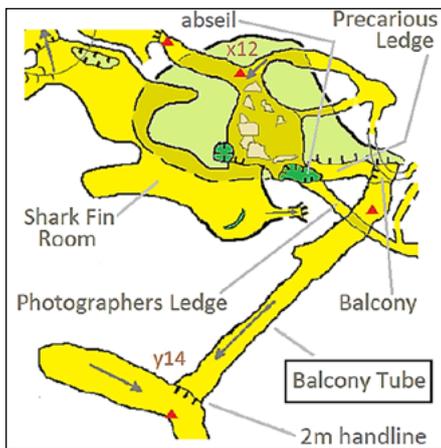
Fate took a hand when Agnes Milowka appeared at VSA in mid-2007. Agnes was a cave diver who, surprisingly, had done no dry caving. However, her competence was obvious from the first time she caved with us in Wilson Cave at Buchan. Before long Agnes was joining Tom Aberdeen and me in 'draining' trips in Melbourne, helping me dig and explore at Bats Ridge and Drik Drik and caving with us at Wee Jasper and Bungonia. The last two locations required vertical skills, so Agnes received her first SRT lesson on a rope rigged from the roof beams of my backyard pergola.

Fortune smiled again when Ag brought her cave-diving friend James Arundale to a VSA pre-meeting dinner later in that year. I changed seats to talk to Jim and in our first couple of minutes we discovered much background in common: both of us were from Yorkshire, UK, we had both done most of our UK caving in the Dales and we were both ex-members of the Leeds-based caving club, ULSA.

It was time to introduce Jim and Ag to Elk River. Although they could not have realised it at this time, they were about to become the first underwater explorers in Victorian caving's most epic adventure.

SUMP ASSESSMENTS

In January 2008 I (and two helpers) took them into Elk River for a look at the sumps. We entered via M14 Baby Berger, using a ladder in the 8 m surface shaft, though it is free-climbable if necessary. A 9 mm rope down the big pitch used two natural anchors, each a few metres distant from the pitch-head. The rope went past



The next thing of course, four weeks later, was to try to get into Elk River from the M14 entrance, and the job and privilege fell to Eric, Laurie and me. We knew that we must partially descend the Baby Berger main pitch, but then what? I stopped at the Photographers Ledge, 7 m down, with Laurie, and we checked in the various side passages off there. No luck. Next I abseiled further, straight down the pitch, casting around for holes in the walls as I dangled on the rope. But still no luck, so I came back up. Eric then arrived at our ledge and descended past us. After only another couple of metres, instead of continuing down he shuffled sideways along a precarious ledge

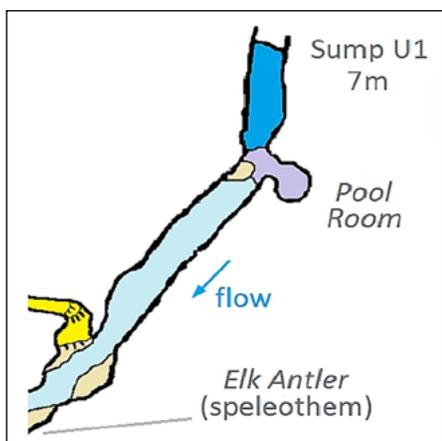
the Photographers Ledge, through a rope protector at a severe overhang, along the Precarious Ledge and on to the Balcony before continuing down the Balcony Tube as a handline. With relatively little gear to carry, we were soon abseiling down Uncles Aven into the streamway. Later a ladder installed here would avoid taking any SRT kit past the main pitch.

Over my several previous visits into the streamway, allowing close observation of the passage and its two near-sumps or 'roof sniffs', I'd concluded that the sumps at each end should be relatively short. This conclusion was based on the facts that (a) the streamway in this section of the cave runs at a low gradient, much of it seemingly on a floor of chert, and (b) the roof sniffs themselves are perched only by dams made of secondary calcite — 'rimstone'. These roof sniffs, each quite short, are in the lengthy process of building up their dams to become sumps, so the two actual sumps would likely be similar in form.

At the downstream end of the passage Jim inserted himself tentatively into the sump in his dry gear and came to the same conclusion as me: a short sump. Next, we all went upstream to the other sump, and again Jim considered it worth coming back to. He and Agnes were quite intrigued, just as I had hoped they would be.

THE FIRST DIVE

Agnes Milowka, Jim's usual diving companion in Australia, left Australia soon afterwards for an extended cave diving adventure in Florida, USA. She made a major impact in that important cave-diving environment and for one of her landmark achievements she was, much later and posthumously, awarded the NSS Cave Diving Section's 2011 Exploration Award.



So now, in March 2008, Jim was a solo diver. He had decided that, for the initial examination, a single side-mounted 40 cu.ft. tank and a wetsuit would be sufficient to gain an understanding of the sumps.

Jim and I went down the cave on the



CATHERINE HEWLEY

Looking straight down Uncles Aven at the divers gearing up



AGNES MILOWKA

The Master Cave contains some beautiful speleothems



CATHERINE HEWLEY

Negotiating the Lower Roof Sniff



THE EXPLORATION OF ELK RIVER PART I

Friday afternoon to rig the pitches and carry the majority of the gear as far as possible, resulting in the cave being completely rigged and all the dive gear resting on a large ledge that is halfway down Uncles Aven. Since I had installed a ladder at the aven our practice came to be removing the harness etc. while standing on the Balcony and then hanging the complete kits off the rope anchor, ready for use on the return. When this disrobing and removal of protection is explained to newcomers — standing on the muddy floor of a small alcove, less than one metre square, tucked into the side of a huge shaft, with a 30 m drop at your elbow — it sounds rather alarming, but you do get used to it.

Our dry support crew arrived from Melbourne on Saturday morning and we were ready to descend by around 11:00. Jim was toggled up first when we changed near the Potholes Reserve gate, so he went ahead with an agreement to meet at the streamway. This would give him a pack-free run and a head start to don his diving gear. However, when I dropped down the surface shaft Jim was sitting quietly at the bottom — he'd had a problem finding the main pitch. This is understandable; though not extensive, Baby Berger initially seems complex. I set him on to the right path and then went back to assist the other two with pack-lowering down the entrance.

Soon we were on the ledge above Jim. He was almost ready, so the rest of us slipped into our wetsuits as quickly as possible before descending the remaining five metres to the stream and distributing Jim's few diving extras between us.

Downstream was first on the agenda of course. At the sump Jim passed the end of the dive line to me, since no fixed tie-off was handy, and he dropped into the water. With excellent visibility, he planned to move quickly to stay ahead of the silt. After around 3 m in a pleasant 75 cm high passage, the floor began to rise and a low constriction was reached. Squirring into this, a point was reached where the passage height had reduced to around 30 cm. Tantalisingly, the shimmering of an air surface was glimpsed just beyond the restriction before clouds of silt enveloped the diver and visibility was reduced to zero. Jim had just enough time to notice that the roof of the restriction had a row of small nodular stalactites on it. Stalactites only grow in air and these were underwater, meaning they had been drowned. This confirmed our theory that the passage had formed with airspace before downstream rimstone build-up had created the sump.

Jim locked his reel off and returned to base to report progress to me and discuss

options. Three more dives were then made, each one clearing some of the rubble and pushing slightly farther than before. On the fourth entry the helmet and lights were removed - considered to be not useful and their bulk restricting progress. At the far point 5 m in, with his head on one side, the gravel/mud floor slumping in behind him and the single regulator complaining about the quantity of stones in the water, Jim decided that more equipment was needed to assure a reasonable safety margin, so a retreat was made.

SUMP U1 IS PASSED

Once back at base, Jim declared that he had enough air and testosterone remaining for an examination of the other sump and we all made our way back upstream. Dropping into this sump, it was obvious that it was going to be short and relatively roomy. After only 4 m Jim surfaced into a reasonable-sized passage. Two distinct tugs on the line indicated to me that airspace had been reached and I quickly gave the single tug back to acknowledge. A brief examination of the passage then revealed another sump around ten metres farther upstream. The sump just passed became known as sump U1 (U for upstream) and the airspace was later designated as Jim's Room. The new challenge would be sump U2.

Having plenty of air, Jim dived back through to explain the situation before the new sump was tackled. This one proved to be quite small at its start and required some excavation before entry could be made. Once in, it quickly opened up to be nearly 2 m square, in crystal clear water. An intermittent shimmering air surface proved unusable, but it showed that the sump had hardly any depth. After 12 m the end of the line was reached but the sump could be seen to continue, a little smaller. Mindful of the single kit and the awkward entry into the sump, a zero-visibility return was made and some more digging was done to ease the start for the next trip.

And so our first dive trip was over, except for the long haul out. The difficult part of the M14 return from Elk River is, always, getting packs up the Balcony Tube, but we were not too heavily burdened on this occasion and surfaced around 19:00 after eight hours underground.

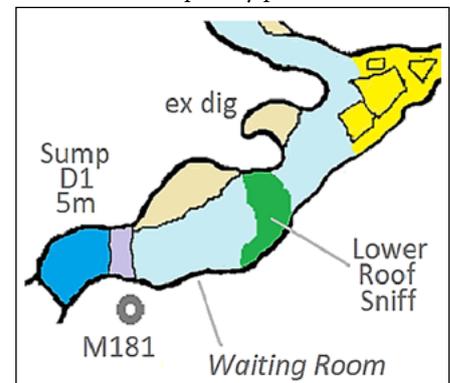
We regarded this visit as highly successful. The first upstream sump had been passed and the second was going, so more than 30 m had been added to the cave's length; and the downstream sump was confirmed as a possibility to pass, with air space visible. We began to plan a return to Elk River with more resources, in order to tackle those new end-points.

SUMP D1 IS PASSED

The follow-up visit, after a hiatus of eight months, had two major objectives: firstly to see whether, with the benefit of two tanks, the downstream sump could be dug through and, secondly, to continue exploration of the second upstream sump.

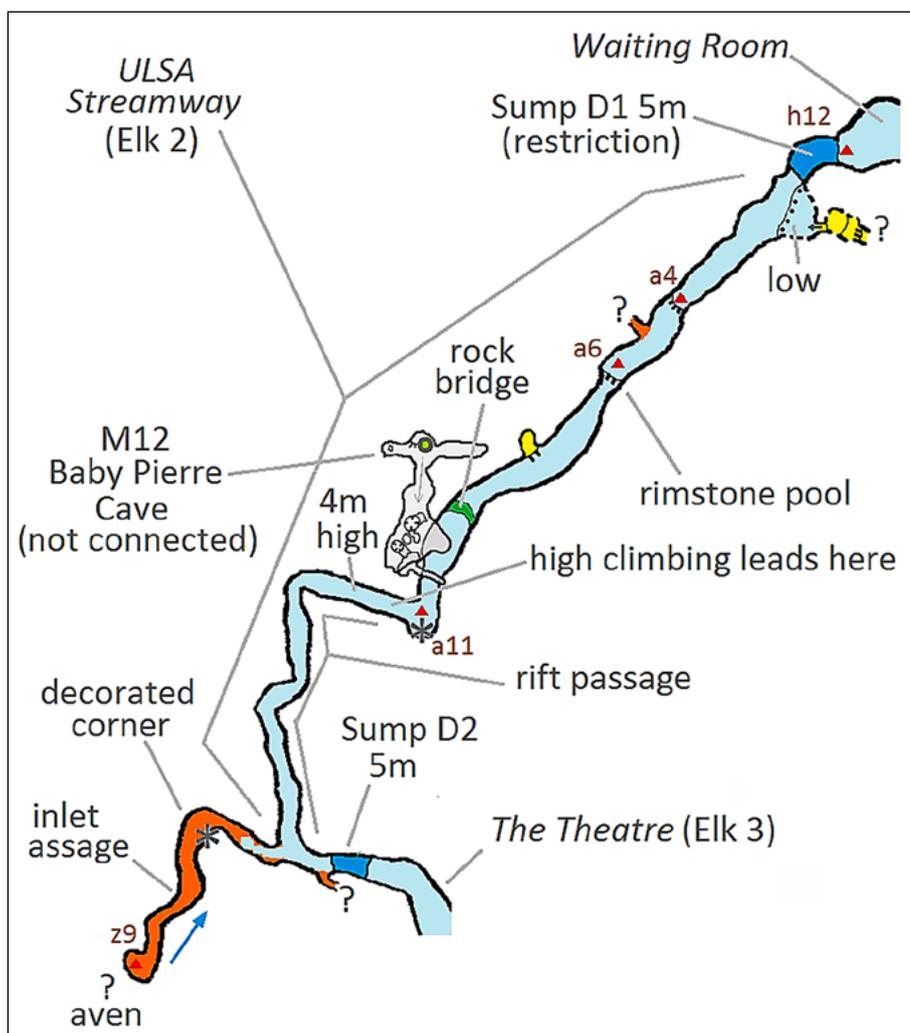
Jim and I arrived in Buchan on Friday evening and we immediately began our preparatory entry to Baby Berger M14. Four cave packs and two dive tanks were moved through the cave's upper reaches to the pitch head and the pitch was rigged. The following day Jim and I, with one helper only coming as far as the big shaft, headed down the pitch, stationing one of us at the Photographers Ledge and one at the Balcony, ready for gear lowering. This was our first time moving multiple packs over this section of the cave and it was an awkward process. As the Elk projects matured we became slicker at it, but it was still always dreaded.

Before long we were donning wetsuits at the streamway and Jim put his dual side-mount dive gear on. We were soon through the two roof sniffs. We intended to leave a permanent dive line through the sump, so it was securely tied off upstream of the lower sniff since there are no suitable attachments at the actual sump entry point.



Once in the sump it was obvious to Jim that the way through was to follow the right-hand wall and, in the rapidly diminishing visibility, the beckoning air surface didn't look far away. Comfortable and confident with two tanks, progress was made by scooping the floor out by hand and pushing it up to the other side. In this way the reel could be moved forward in stages, despite the disconcerting feeling of gravel slumping in behind his legs. After several minutes an outstretched hand could just feel a vertical rise in the roof. Encouraged by this, digging continued until one eye surfaced and saw a large airspace continuing out of sight. After more frantic digging most of the diver's head emerged, followed shortly afterwards by the rest of his body.

Although this first dive was expected to be just a quick reconnaissance, two tugs



on the line gave me the surprising news that airspace had been reached. Jim had emerged, to his relief and delight, into a small rimstone pool, and a continuation of the open stream passage stretched invitingly away into the distance. He jettisoned his gear and skipped off down a noticeably larger streamway. After several chambers and a couple of very nice calcite waterfalls a large circular room with a big pool was reached, with one obvious inlet and, in all probability, another sump. Conscious of leaving me alone for quite some time and with the prospect of a nasty dive out, Jim decided not to linger and he paced out the distance back to his gear.

The dive out was not pleasant, taking two attempts and some serious digging and squeezing. We were not sure who was the most relieved: me, to have the nerve-racking solo wait over or Jim, to finally get back to airspace on the right side of the sump.

The second objective, that of the upstream sumps, was also tackled. I fed line out to the diver as he went through since he now had no reel — it had been sacrificed downstream of sump D1. For this dive, with a known way through, we had prepared better, so Jim opened up his pack at the far side, took a UHF radio out of the

watertight jar, and called me. The radio worked perfectly through the sump, and having reliable and clear communications instead of tugs on the dive line provided much-improved confidence. However, with no reel a dive into the second sump here was considered inadvisable, so Jim simply tied off to a large rock on the floor so that we could leave a permanent line in place ready for the next trip, and dived back through to me. We tied the near end of the line to a previously-placed silt screw at the sump pool and set off back down the canal to the base of Uncles Aven.

The exit from the cave was laborious, even though we left some gear inside for next time. The Balcony Tube, being body-sized and at an angle of around 20 degrees, is horrendous to carry through in the upwards direction. Our helper was waiting for us at the top of the main pitch.

So ended our second Elk River diving trip. Again, more successful than we had dared to hope. We now had over 150 m of extensions. It left us with many new plans in our heads and itching to get back.

The final trip that included just Jim and myself was in December. The plan was to dive on two consecutive days, thus making more efficient usage of the inevitable

onerous haulage of gear. The objectives were to try and enlarge the downstream sump in order to make it easier and hence safer to pass, to start a survey of the new passage, to take some photographs and to check out any obvious leads.

Chalky Thomas and I, only one week earlier, had left the pitch rigged in anticipation of this upcoming dive trip, and that allowed Jim and me a quick trip down on this Thursday afternoon. A little over two hours therefore saw the diver through the downstream sump and our UHF radio contact established.

The dive through again required 'interesting' squeezing and some clearing, as the channel previously cleared had filled in and levelled out. This completed, Jim attempted to communicate back to me again using the UHF radio.

I was waiting just downstream of the lower roof sniff but upstream of the sump pool, in the low, wet and cold compartment known as the Waiting Room. I'd already noticed that my radio had ceased working, undoubtedly due to water ingress. Therefore I received no call from Jim. He correctly interpreted my silence as merely a technology failure and set off downstream, checking out various leads, re-pacing the distance and taking photographs. These later revealed to me what I was missing: beautiful rimstone cascades, many other decorations, and an arching rock bridge spanning the whole passage width about halfway to sump D2.

I particularly remember this trip (the last one with Jim as the only diver) for my most anxious underground wait. While Jim was beyond the sump I turned out my light and lay on my side, alone in the cold and sloppy mud of the small chamber. The waterfall over the rimstone barrier was only a metre from my head, the sound of its steady trickling and splashing only emphasising the coldness. My UHF radio, whose performance had so delighted me when we'd successfully tested it through the upstream sump four weeks earlier, was dead. I couldn't sit up: the roof was only 60 cm above. The time that Jim was gone, actually 90 minutes, seemed like hours, and my over-active imagination roamed over all the mishaps that might have befallen my missing friend. I even began to plan what words and apologies I could possibly offer to Jim's wife at his funeral!

At the downstream side of the sump, finally returning to his dive base, Jim discovered that a burst-disk was leaking on one of his tanks and a high-pressure hose was torn. A tense dive out ensued. I was immensely relieved when I heard some clanking, and then bubbling noises, from

THE EXPLORATION OF ELK RIVER PART 1

inside the sump, followed by the approach of a faint orange glow. When he stood up in the sump pool, dropped the regulator from his mouth and removed his face mask, he smiled widely, his expression of happiness I'm sure concealing great relief and some weariness.

Back together, it was decided that, having no spares to alleviate the equipment problems, further activity and the following day's diving must be cancelled. A leisurely trip out saw us back on the surface after seven hours underground. We retrieved equipment and de-rigged on Friday.

A major advance had not been made on this visit but the curtailment of our activities was due only to technical failures and much had been learned. The nature of the sump-pool perching had been fully assessed, fairly good photographs had been secured, the second downstream sump had been revisited and side passages had been noted. We were continuing to gain familiarity with the cave and confidence in our methods. We felt that the stage was being set for future performances.

THE MASTER CAVE IS CONFIRMED

Although we were keen to continue the exploration, we were, for various reasons, unable to resume diving until August 2009. Jim had returned to the UK for many weeks to attend to family issues and I took time away for caving in the Northern Terri-

tory and in the USA. Fortunately, when we finally re-assembled the dive team had expanded 100 per cent by regaining Agnes Milowka. Ag had returned from the USA having made her major discoveries in Florida and being keen to do the same in Australia. Chalky and I had installed three glue-in bolts on the main pitch.

New supporter Neil Wilson had recently joined the VSA and had expressed an interest in helping, so he and I had rigged the cave and transported some gear right down to the streamway on the Friday evening. This made Saturday morning's transit quite rapid. The previous trip's clearing in sump D1 proved to be successful, so it was with relative ease that first Agnes and then Jim passed it and left the non-divers to exit the cave. No more long, cold, nervous waits — at least not inside the cave.

Once through, Ag discovered that the waterproof housing on her camera had failed, so the photography was cancelled. A proper survey of Elk 2 was begun, but it quickly became apparent that the clinometer had also suffered water ingress and even the electronic distometer didn't like the damp after about 50 m, so the survey was limited to measured compass bearings but estimated distances. At the far end of Elk 2 (the airspace between Sumps D1 and D2), after completing the surveying, the above-water inlet on the right (previously noticed) was followed for around

40 m past some nice calcite decoration to an ascending rift that Jim believed could go farther with determination (later attempts to ascend here were not successful).

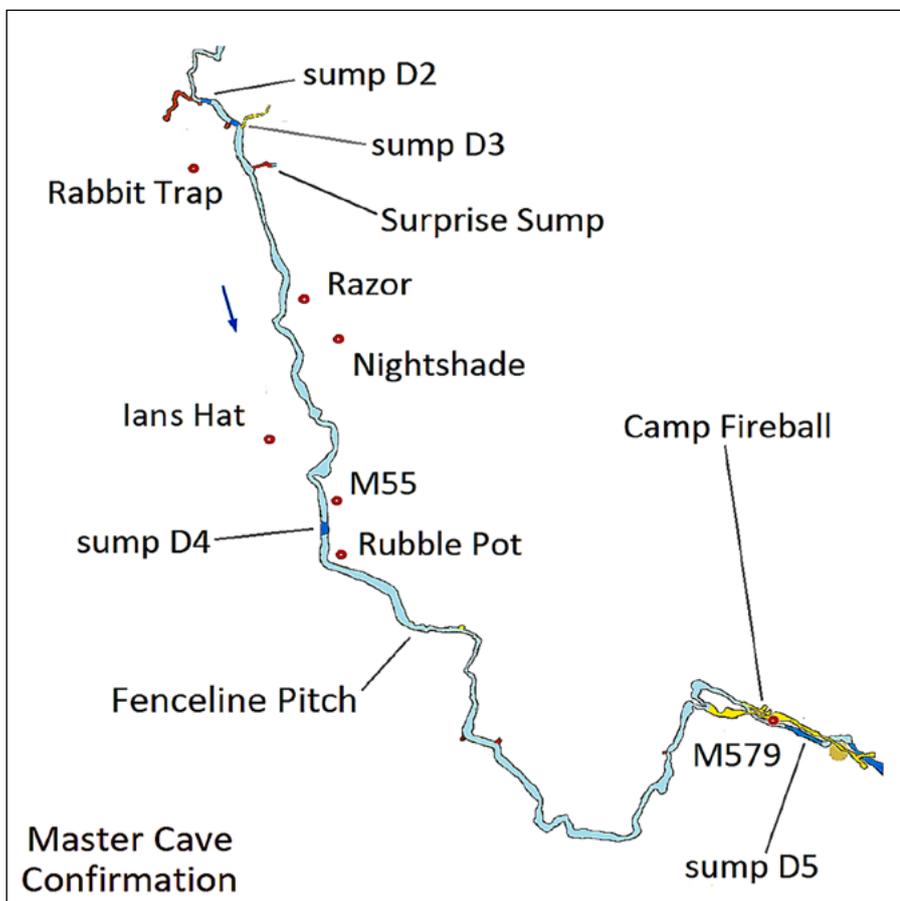
Back at the pool, and underwater, the straight-ahead direction was probed first but found to be too tight. Feeling around to the left side then revealed the proper way into the sump. Two tanks were therefore retrieved from sump D1's exit and Jim dived. As the visibility had been destroyed during fumbling, nothing was seen until emerging from the sump after five metres into a beautiful balcony pool perched above a two metre rimstone waterfall. A large passage continued on around a corner. The line was tied off and Jim dived back to split the gear with Ag.

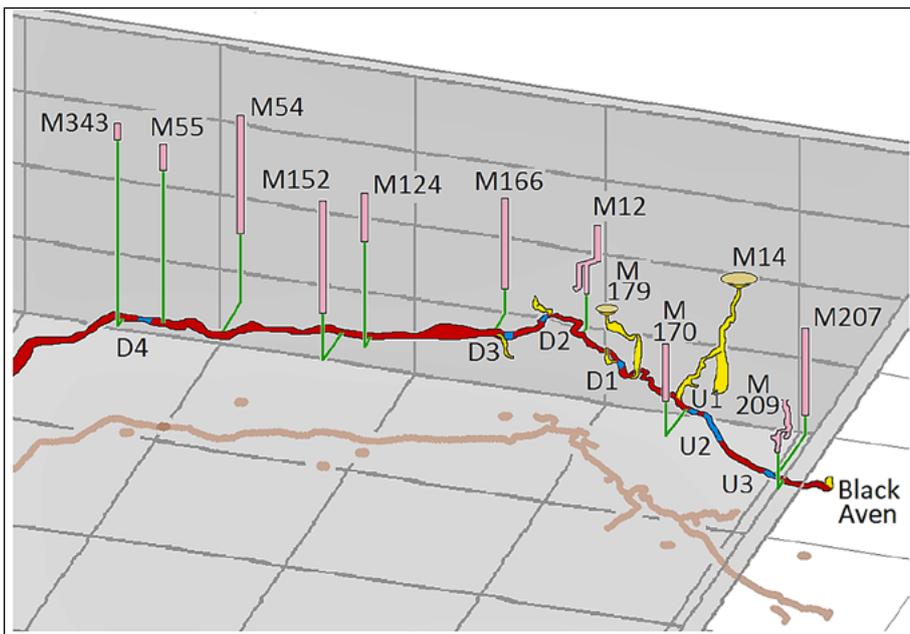
Once both divers were through, the waterfall was down-climbed and the large passage followed for around thirty metres to another very attractive crystal-clear turquoise sump with an obvious roomy passage underwater. Ag strapped on the twin gear and disappeared into the sump. After only a few minutes she returned after another short dive to airspace. The gear was split again and both dived through Sump 3 and again left the gear behind.

Elk 4 started off as a lowish bedding plane with a couple of ducks but quickly developed into a lovely passage, the stream here being noticeably larger. As the route was followed downstream, a rift passage was encountered with deep mud overlaid by water that made walking strenuous. Breakdown areas then led to another sump after around 300 m, so their steps were retraced to collect the gear.

This time Jim dived with single kit as everything suggested that Sump 4 would be another short dive. This proved to be true and, once Agnes was also through, the gear was ditched and the pair headed off into Elk 5. Here the cave has a much bigger feel. Jim recalls that at this stage the words 'master cave' kept running around in his head. After several climbs and some large chambers they came across a drop of around 3 m. Initially no easy route down was seen, and so finishing the day's exploration was discussed. However, Ag then free-climbed it and after an absence of only a couple of minutes she returned with the words 'You'd better come and see this'. After first proving that it was possible to re-climb the drop, they set off. This time the passage changed again, into a tall narrow rift. After passing more climbs and a large dry inlet (the 'Escalator') that could be seen to continue, they finally came to a slanting rift pitch around 10 m deep, which dictated the end of exploration for the day.

Rough pacing out on the return journey





gave an estimate between 550 and 600 m for Elk 5, around 300 m for Elk 4 and 30 m for Elk 3. This coupled with the already known 120 m for Elk 2 gave a total extension of around one kilometre. They assumed this would place them off the Potholes Reserve, but of course they didn't know in which direction they had travelled. In fact they had passed under the reserve boundary as they descended the 3 m free-climb, resulting in that drop later being named the Fenceline Pitch. It's interesting to note that Jim and Ag's distance estimates were remarkably good, not showing the caver's usual over-estimations.

The walk and swim back to Elk 1, followed by a long slog of hauling gear back to the start of the Balcony Tube, resulted in an overall trip time of nearly thirteen hours. It was two very tired people that wandered into Homeleigh well after midnight and began to recount their story to an incredulous Neil, Lynne Amore and me. I admit that their amazing tale of discovery had me seriously wondering for a time whether they were pulling our legs, but the level of detail soon convinced me. Jim and Ag had realised the importance of their find even as it was in progress. Agnes later wrote: 'In all aspects the cave is simply wonderful. We followed the stream, and dived through sump after sump gasping... "Wow," and "Oooh my," and "Oh, isn't this just incredible?" As the cave unfolded before us it was hard to believe what we were seeing'. We all stayed up until 04:30, simultaneously celebrating and seriously debriefing.

The following day was our 'de-rig and retrieval' descent. All four of us participated and we had the gear out in four hours. As always, dragging each item up the Balcony Tube was tedious, to put it mildly. As we drove away from Buchan to head home

the whole team was elated: it had been a historic weekend, since we now knew for certain that we were in the Master Cave.

THE NEW SURVEY IS BEGUN

All of us being keen to continue what had now become our 'project', we were back after only three weeks, our aims being to survey the new passages and, hopefully, find more. As usual, the non-diving support crew, this time myself accompanied by Miles Pierce and Chalky, had the task of rigging the cave on the Friday night, allowing Jim and Ag a quick run through the cave on Saturday morning. Chalky and I helped with the carry as far as D1.

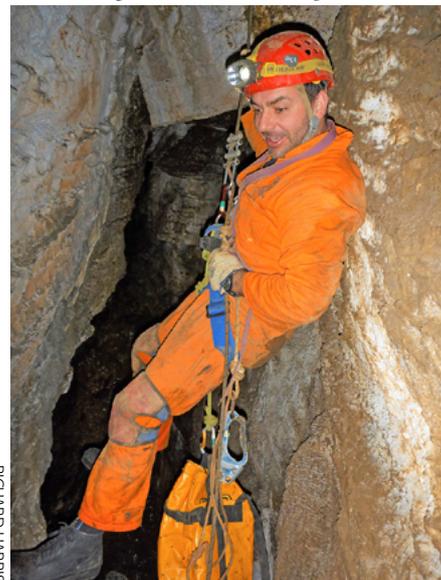
The now familiar route to Elk 2 passed without incident for Jim and Ag. More photos were taken in Elk 3, where an advanced base and gear-dump was set up. The new survey was begun from the line tie-off at Sump D2's entrance and continued in Elk 4. In Elk 5 the survey quality was dropped to distance and bearing only, aiming only to determine quickly where this important cave was going. A later, proper survey replaced this data. The idea of rigging a rope on the 3 m climb was thwarted by the lack of natural belays in decent rock, but Ag and Jim pressed on.

Shortly after the climb, at the start of the 'pretty section', the batteries in the disto gave up the ghost, and, with time pressing, surveying was abandoned in preference for photography. Alas, soon after this the second camera battery also died and this was taken as a sign to push on to the known end. On reaching the top of the 10 m rift pitch the pair had more trouble finding suitable belays, with two obvious 'well-jammed' chockstones proving to actually be quite mobile by repositioning themselves halfway down the pitch. The rope idea was



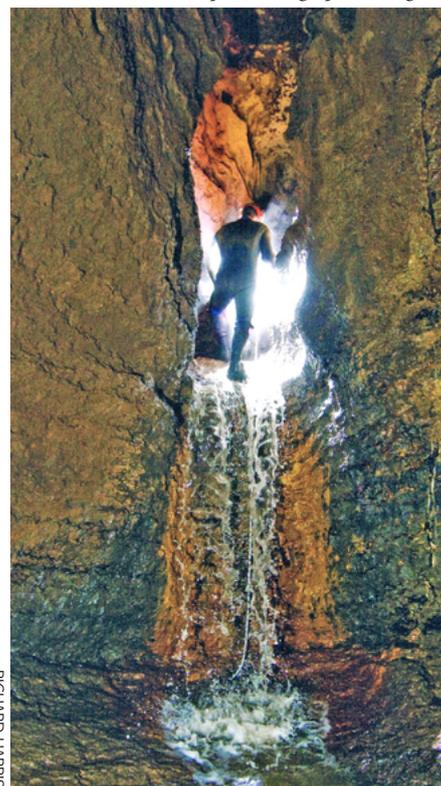
KENSMITH

Agnes Milowka near Sump D3



RICHARD HARRIS

Jim Arundale abseils past Photographers Ledge



RICHARD HARRIS

Fenceline Pitch



THE EXPLORATION OF ELK RIVER PART 1

abandoned and Jim free-climbed down.

Ten metres horizontally from the base of that pitch the passage became out-of-depth in water and the roof lowered, but through a gap near water level the cave could be seen to continue. Ag therefore followed down the climb and the duck was passed to a smallish chamber with out-of-depth water and no obvious way on. As all the diving gear had been left at the previous sump around 600 m away, it was not possible to locate the underwater continuation of the cave passage.

Determined to find a sump bypass, Jim climbed back up the pitch and traversed over the top to an area that Ag had examined during the previous trip (this area later became the site of Camp Fireball). The connection between the upper and lower levels was proved by Jim accidentally dropping rocks on Ag as she also made her way out of the deep water area. Unfortunately no high-level way on was found, so this marked the far point of exploration on this trip.

It was decided to re-examine the Escalator inlet on their return journey. They had been stopped on the previous trip by some fragile mud formations, but they believed that they could bypass them by cutting steps around the edge.

This was tried, and it proved reasonably successful, with Ag performing some interesting acrobatic manoeuvres on a loose climb. The passage continued to rise gently with a slippery muddy floor, finally ending after about 70 m in a muddy crawl that might go farther. Burnt timber (charcoal) was seen below a tight ascending rift, tantalising evidence of a connection to the surface. They also noted that there is a lower level to this area, which was not examined at this time as the way down was steep and coated in frictionless mud. These lower levels were later proved to connect to the stream passage below, but the holes here have never been descended.

The weary, but satisfied, explorers began their long exit. Once again, at Homeleigh, we, the support crew and surface helper Lynne, waited many anxious hours for news. Jim and Ag finally let us breathe again by parking outside Homeleigh at

02:15. That made fifteen hours in the cave, ten of which were spent beyond the sumps.

That the divers had gained little new length was of no importance. They had returned with photographs, survey data and an improved understanding of the nature and layout of the cave.

Once again, naturally, we stayed up late. Despite their tiredness, Jim and Agnes needed the wind-down time. We spent two hours discussing the trip, debriefing and making notes while all the experiences were fresh. On the following day, the divers woke to find that their support team had already descended the cave and retrieved the gear that had been left inside (at the Rubble Slope).

Although not all of the cave had been surveyed at this time, later survey additions and plotting of the data would show that the explored cave length had reached 1800 m. The depth, from the M14 entrance to sump D5 water level, was 105 m, making it the deepest cave in Victoria.

SUMP D5 IS PASSED

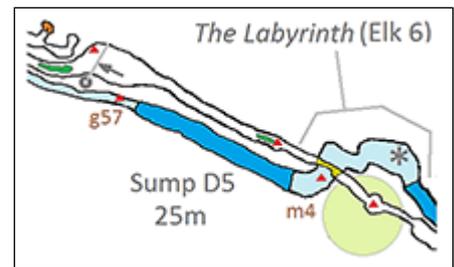
Only two weeks later we were at Elk River once more. Neil was again helping in support and as we travelled down through the Baby Berger access passages as a complete dive-plus-support group, Neil installed a redirect bolt between Photographers Ledge and the Precarious Ledge. This redirect allowed us to dispense with the long rope protector that had formerly been required here. After the support team bade the divers farewell and good-luck at D1, an efficient carry was made by the diving duo, through to the end of Elk 5. They had paused only briefly, to place a bolt and a handline at the 3 m Fenceline Pitch.

The principal objective on this trip was to examine the sump at the end of Elk 5. To avoid carrying too much gear, Ag and Jim had decided to take one tank each to the start of the sump, where Ag would dive on those twin three-litre tanks. In addition, they positioned a spare tank at the exit of Sump 4 to provide each with some redundancy (and, as Jim later wrote, in order to secure his escape in the event that Ag got too 'enthusiastic').

At the start of sump D5 Ag kitted up with the three-litre tanks and dropped quickly out of sight, the sump obviously going much deeper than the previous ones. She was only gone for around ten minutes before returning to report an easy 25 m dive followed by around 15 m of passage and another sump. The gear was split and both dived to Elk 6 in zero visibility.

In an attempt to stay ahead of the silt, Jim immediately took the remaining line and, on single kit, floated into Sump D6. The way directly ahead seemed to continue in an awkward-looking tight rift, so the obvious deeper route under the right hand wall was followed.

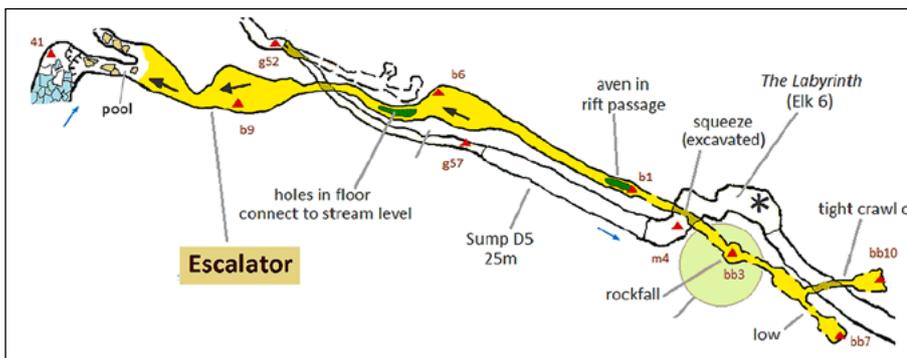
This dropped for around three metres before seeming to turn back to the original passage direction and continue on, roomy. At around twenty metres from base it became obvious that the passage was continuing at a similar depth, and a large convenient block in the middle of the passage suggested that this was far enough on single kit with one light, no fins and only 3 mm cord as dive line.



Back at the start of the sump, Ag decided to also 'have a look'. Being undeterred by Jim's caution, she laid another 20 m of line was laid before she could see the way dropping off to greater depth. The dive line was finally tied off and a return was made.

The various high level passages visible here in Elk 6 (later named The Labyrinth) were cursorily examined, but they all appeared to join up. Once back in Elk 5 they surveyed out and investigated various inlets, all of which quickly narrowed down. The resultant Elk 5 survey length was 580 m. When I plotted the survey results it was clear that the trend of the cave was not westwards towards Scrubby Creek, but southwards and then turning east, towards the Murrindal River.

Back in the comfort of Homeleigh, the dry support crew had to sit up only until 00:30 this time (but still nervous) before the divers returned after a mere twelve hours underground. Again a long debrief session ensued before retiring. During such debriefs, the non-diving participants vicariously experienced the pleasures of the actual trip, happy to sit and listen to the explorers excitedly tell their tales. But inwardly we were turning green with envy!



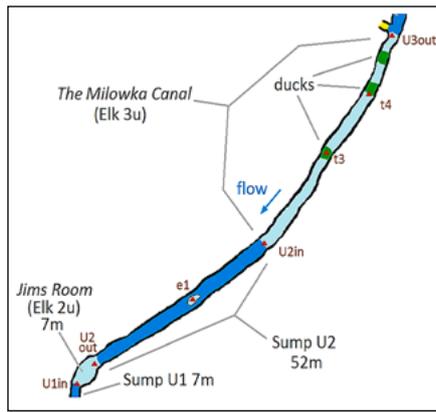
THE EXPLORATION OF ELK RIVER PART 1

SUMP U2 IS PASSED, BUT NOT D6

The next trip, a few weeks later, had an expanded dive team. It contained SUSS member Michael Collins and also Ken Smith, a member of both CEGSA and the Wet Mules. Mike and Ken are experienced sump divers and were more than keen to help with the exploration. The non-diving team was supplemented with Ted Matthews (who was, like Mike, a guide at the Jenolan show caves). The plan for this trip was for Mike and Ken to help haul gear to Sump 5, and then to have a thorough look around and take more photographs in that area whilst Jim and Ag were diving Sump 6.

Next morning the logistics of filling eight packs of gear for four divers delayed the descent until lunchtime and the huge amount of gear took quite a while to get to the kitting-up area at the base of Uncles Aven. The dive team's slow pace continued as they negotiated the early parts of the route since they wanted to get underwater shots as the first diver entered the clear sumps. At the end of Elk 5 Jim dived first, with Ag planning to follow twenty minutes later, leaving the other two divers behind. On reaching the end of sump 6's line Jim tied on a new reel and swam through a slight dogleg with the water depth increasing to 7 m, a new record for this cave system. Turning to the left, he entered a rising bedding plane with the roof lowering more quickly than the floor. Soon the left wall seemed to offer a better route, but progress was slowed as some larger boulders required relocating.

By this stage the visibility was zero and it was only on breaking out of the bedding plane that an air surface was seen. Thinking this was the end of the sump, Jim rocketed to the surface with visions of railway-sized tunnels roaring off into the distance. Unfortunately, on surfacing he found himself to be in a large blind pocket totally coated with thick, dense mud. Re-submerging in very poor visibility, a vague impression of a way on to the left was spotted. Conscious of having been breathing like a steam train and knowing that Ag would soon be arriving with bigger tanks, Jim locked off the reel and jammed it in the wall.



His return out of the sump was made in poor visibility and the two divers re-united. After listening to the description, Ag set off, leaving Jim to re-examine the various high level passages in Elk 6. She returned after 30 minutes, having seen nothing for the entire dive and having made no progress due to the poor visibility and issues with the dive line. A marked dive-slate was left with the reel at the farthest point. The slate reads 'Ag & Jim 2009', followed by a smiley.

The return journey up the long streamway was much easier with the assistance of Mike and Ken, and so on reaching Uncles Aven it was decided to have a peek upstream. Jim and Ag passed the first sump and Ag continued into sump U2. This went for about 50 m before surfacing in a low, narrow canal (later named Milowka Canal) that ended after about 60 m in a third upstream sump.

Deciding enough was enough and conscious of the time, a retreat was made and the re-united dive team of four began the long slow haul out. It was only on reaching the bottom of the entrance shaft and seeing daylight that they realised the trip had taken over 17 hours. It was 05:30! Back at Homeleigh, Ted and I were anxious. At 06:15 we were just about to drive up to the reserve when the divers' cars appeared.

Since none of the divers were in shape for more work, and indeed three of them had to get back to Melbourne later that day, the de-rigging and gear retrieval task was postponed from Sunday to Monday. This allowed a grateful dive team some sleep

before getting on the road. Ken, Ted and I were able to go recreational caving on Monday, in Wilson Cave, as well as performing the retrieval in five hours from the Rubble Slope. On Tuesday we descended and surveyed Baby Pierre Cave so that I could add it to my Elk mapping. At that time I considered it to be a potential alternative entry point to Elk River.

SEEKING A D5/D6 BYPASS

It was late in 2010 when we next assembled a team for the master cave. The dive team of Jim, Harry (Richard Harris) and Mark Pardoe entered the pre-rigged cave unaccompanied by support. They penetrated as far as the Escalator, which Jim and Mark surveyed, though with distances and inclinations estimated. They also confirmed that the holes in its floor did communicate with the streamway below, reviving hopes that a sump bypass could be found, but they were not equipped on this descent to thoroughly investigate. As it turned out, a bypass was never found, but fortunately also was not required.

Because this visit had limited objectives, it was a relaxed (though still twelve hours in duration) and successful trip. Harry took many excellent photographs, which would be the best pictures from the master cave until Liz Rogers' collection began in 2013. The dive team brought their equipment out as far as the top of the main pitch, leaving an easy task for the retrievers.

NEXT EPISODE:

Two and a half years, and twelve descents of the cave, had passed since diving began. Read Part Two in the next issue of *Caves Australia* to hear about more amazing discoveries in Victoria's most epic caving adventure.

Note: Not all dry support helpers in the Elk River Cave Diving Project are named in the story above, but they are not forgotten: Ian 'Chalky' Thomas, Neil Wilson, Brett Nuske, Meilly Effendy, Bruce Bulled, Darryl Pierce, Miles Pierce, Mark Dusting, Ted Matthews, Tom Aberdeen and Doug Henry.



COVID-Caving – Vietnam 2020

Alan Jackson
STC

I'VE BEEN frequenting Vietnam for cave exploration since 2014. The recent 2020 expedition was my fifth visit. It always throws up a tantalising mix of gobsmacking cave exploration and testing emotional and physical torture; one might call it character-building.

I'm quite full of character after this latest round of suffering — every expedition should have a pandemic thrown in to spice it up a bit.

CLOUDS ON THE HORIZON

Mid-January 2020 and general media coverage of the strange new virus coming out of China is starting to be taken a bit more seriously. My gut tells me that this might just be 'the one' and that in a couple of months' time it'll be spiralling out of control and causing global panic. Not much I can do about it so I sit back and watch things unfold with my fingers crossed.

Late January and the World Health Organisation is starting to test out words like 'pandemic' and my travel insurance company is politely informing me that while I took out my policy before an all-important date (specified by them) and was still covered for some coronavirus-related hiccups (but not reimbursement if I cancelled my trip), that I should reconsider my travel plans. A few days later they informed me that all bets were off and that nothing related to the corona virus was their problem. I was on my own. Ah, insurance companies — always there until you need them.

Mid-February and parts of China are in lockdown, Iran and Italy are looking 'problematic' and countries like the USA and Australia are finding their first few cases. Australians evacuating from Wuhan, China are being sent to quarantine on Christmas Island and non-Australians travelling from China to Australia are told to piss off unless they've done two weeks somewhere else on the way. It was decision time on whether to go at all, considering that it could end up being a significantly longer trip than the three weeks I'd planned. In the end I decided I'd



The main stream passage in Phu Nhieu

go (I'd not been to Christmas Island, so a brief holiday on the way back home could be fun; they have caves there ...) but I'd take my laptop with me so I could at least make some attempt at working remotely if I got stuck somewhere.

LEAVING ON A JET PLANE

Melbourne International was quieter than normal, but still bustling. Immigration at Ho Chi Minh City was more serious than usual (which is saying something), with officials wearing face masks and gloves and

hiding behind Perspex screens. My passport was thoroughly inspected and they took a good look at my old visa from China in 2011; Vietnam had shut their border with China in early January as there is no love lost between those neighbours. I was applying hand sanitiser liberally (it was still available on the shelves when I left Australia) and keeping my distance from people. As the airport doors slid open in front of me I was greeted with the usual barrage of South-East Asian sensory overload — motorbikes, humidity, pollution and pushy

RYAN DEBOOT



Loong Coong sunbeams

ALAN JACKSON



Super green frog in Phu Nhieu

ALAN JACKSON



The approach to Ma Lon

twats trying to get you into their taxi. As usual, I opted to walk to my hotel for the full experience; crossing the main road outside the airport on foot is easily the biggest adrenalin rush of any caving expedition to Vietnam. With an 85 litre back pack and a 45 litre day pack on my front one almost fits the 'water buffalo' category and vehicles opt to go round you rather than through you. For once I had a relaxing night in HCM, due to the lack of other cavers coming in at the same time. Usually a raucous night out is had with hangovers and seediness

threatening to provide a second chance to inspect your breakfast the following morning. I awoke refreshed and rested, took my life in my own hands again crossing the road and lined up for my domestic flight to Dong Hoi, where my chauffeur awaited and whisked me away to Phong Nha, some 40 minutes away. It was nice to be back, passing familiar land marks and being reminded of good times had in the past.

Some visa issues for most of the English cavers joining us had them turning up a day or two late, so I had a couple of days

to get stuff sorted. The first day was spent catching up with exped members already in Phong Nha (working in various roles for Oxalis – the adventure tour company which run trips to Hang Son Doong etc.) and the second sorting my personal kit and preparing team kit for the first trips out. Normally it's turn up one day and head straight out the next.

TORTURE ROUND 1

On 2 March we headed out into the jungle. I was in a team of five cavers which





RYAN DEBODT

Surveying in Phu Nhieu



ALAN JACKSON

Dave negotiating the knot crossing in Loong Coong



ALAN JACKSON

Sunrise over camp at Hang Nuoc Ngam



ALAN JACKSON

Seven-legged spider at Ma Lon camp

headed south to Quang Ninh province, where some caving had been done back in circa 2009 but nothing since, for a six day trip. Another team of three headed out somewhere else, with a fourth due to arrive later that day and catch up with the others the following day. Our trip presented all the usual elements of Vietnamese expeditions, from utter frustration and misery through to unmitigated cave exploration heaven. We had a reasonable commute on day one, driving a few hours then loafing about while local permissions and paperwork

were sorted out (always a touch-and-go affair) then finally setting off into the jungle in front of a bunch of bemused-looking local farmers at the end of a dirt track around 2 pm. It was only a short walk of a couple of hours to a pleasant spot beside a river.

Our caving team consisted of Deb Limbert (linchpin of Vietnam caving expeds since it all started in 1990), Adam Spillane (been everywhere, done everything caver and Vietnam caver since 2009ish), Dave Ramsay (Vietnam vet since 2014 – same as me) and Paul Fairman (a Vietnam newbie).

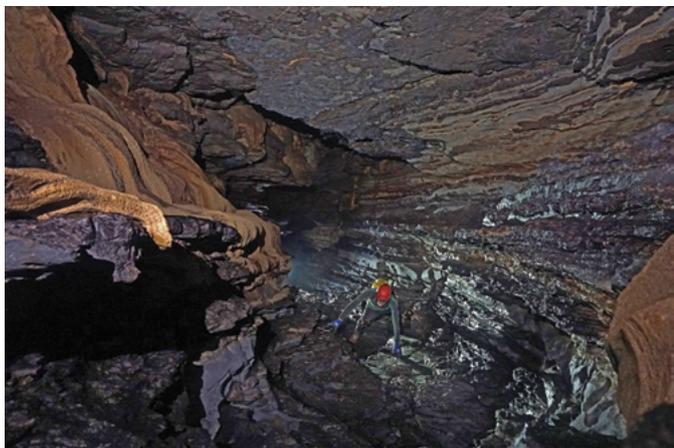
We all learnt a valuable lesson on the first evening — Paul snores terribly and was called ‘the Walrus’ for the rest of the expedition. Social distancing was set to become a theme of the expedition well before it caught on globally.

Day 2 began with an early rising, which is usually a sign that we had a long day of walking ahead of us. It proved to be true. We walked and walked all bloody day up and down hills and rivers. In the fading light we found ourselves wading down a large river bed with lovely limestone cliffs



R/AN DERBODT

Stream passage in Phu Nhieu



DAVE RAMSAY

Bedding plane climbs in Cha Ra



PAUL FAIRMAN

Deb negotiating the slippery log up the cascade in Birthday Cave

and towering karst landforms in the distance. Suddenly we stopped and were told we'd arrived. The river disappeared into a 40 m high entrance 100 m downstream so we went to sleep that night satisfied that tomorrow might bring some caving.

In the morning we were told that this cave was only short, with some swimming, then a bit further downstream there was another sink which the guides hadn't been in. The description kind of matched that of the two caves that had been investigated in 2009, but we were hundreds of metres away from the GPS coordinates for those caves and Adam, who had been on the 2009 trip, said it had only been an easy half day to walk to the area, so we hoped all was good.

Adam didn't feel the entrance was familiar. The first cave was fabulous and sporty with a lively water flow, plenty of cascades and swims but was only ~360 m long before it burst back out into the daylight. Adam was trying to decide if it matched his 2009 'Birthday Cave' memory but that trip had been notorious for the considerable consumption of alcohol and illicit drugs — it had been a team member's 18th birthday. His memory was hazy at best. I was simply happy that I'd managed to fit the entire cave onto two A5 sheets (numbers on one, sketch on the other). Converting my brain from Tasmanian surveying mode to Vietnamese mode usually takes longer than the first day.

We slipped and stumbled down the horrendous boulder river bed for close to 1 km and came across the next stream sink as promised. Alas it only went a hundred metres or so before terminating in a massive fetid sump pool which Adam realised was almost certainly the same cave as they'd explored in 2009, Rao May, making the other through trip almost certainly Birthday Cave. Bugger. Ah well. We slogged back up the river, through Birthday Cave and back into camp to while away the time.

2020: A CHERT ODYSSEY

We really weren't sure what the plan was for the next day and if the guides had any good targets for us or how far away they





Rao May entrance

PAUL FAIRMAN

were. We started by climbing up over the col above Birthday Cave then descending to the lower entrance back into that treacherous bastard river bed. About 150 m short of the stream sink we pulled up on a sand bank and the guides asked us if we'd checked the cave on the opposite bank. We looked a bit sheepish and admitted we'd totally failed to notice the large healthy tributary joining the main river. I think we'd been so bloody happy to see 40 m of easy walking on the sand bank opposite, after enduring 900 m of horror further upstream, that we'd completely failed to even glance to the other side. A bit embarrassing.

We dumped our bags, gathered the bare minimum (helmet, light, survey kit) and clambered up the slippery boulder pile guarding the hidden entrance. We didn't expect it to go as we'd already resigned ourselves to this trip out being 'one of those' trips where you rediscover historic caves and get a nice bit of exercise and jungle suffering in between. To our surprise the cave seemed open and nice. We walked, waded and swam upstream in good-sized stream passage (generally 5-10 m wide), past an apparently lost green lizard propped on a rock mid-stream, for about 300 m to what looked ominously like a sump. Deb swam across the pool and reported a draughting slot which she negotiated then called out

that it was big and going again. Not at all appropriately dressed for this much swimming, particularly at surveying pace, we decided this was clearly a good cave and that we should pop out again, grab some lunch, put wetsuits on then return with a bit more safety gear.

Round 2 saw us check a few of the side passages, one of which lead to a daylight hole (maybe where that silly lizard came in?) then a good push up the main drag. It was mostly wading and swimming at a low to moderate gradient with the occasional half metre cascade. The passage then changed from wide and not overly high in very cherty rock to tall and skinny in very pure limestone. The cherty stuff proved entertaining as foot and hand holds would fail spectacularly whenever you were trying to avoid a swim or clinging to the wall trying to sketch or do instruments. The chert theme would continue in this cave and resulted in many stupid chert puns making their way onto the survey: Cherty Cherty Bang Bang, 50 Shades of Chert, 2020 – A Chert Odyssey and all nine episodes of Star Wars (from The Chert Menace through to The Rise of Chertwalker). After seemingly endless 20+ m legs we decided to call it a day at a long canal swim. The morning session had yielded about 450 m of survey and the afternoon session another

850 m. A good day's caving. On the way out I took pity on the lizard, who frankly looked cold, skinny and lost. The fact that I simply walked over and picked him up without issue (try doing that with a warm, well fed 50 cm subtropical lizard) confirmed my suspicions. I swam him out to the entrance, holding him aloft with one hand in what I coined 'lizard paddle', and released him into the jungle night, hoping a snake didn't find him before he could warm himself up in the morning sun. At least I'd given him half a chance.

CHERTY CHERTY BANG BANG

Day four saw us split into two. The guides had another entrance to show us which sounded like it had potential to be the main river downstream of Rao May, just below camp. Deb and Adam went there while Dave, Paul and I went back into yesterday's cave. Our day proved to be the day of the expedition. The cave just went and went and went, constantly changing character with exciting sections sporting exposed climbs up thundering cascades, long swims, superb pretties and one section where the passage grew inexplicably massive (you know ... 'left 40 m, right 70 m, up 65 m, down 1.5 m' kind of stuff). Eventually a few granite boulders started showing up in the river bed, then a few more



bigger ones, then loads of massive 4 m diameter boulders, indicating an entrance was coming up. It all ended in a big jam of huge boulders with the stream bursting in through a narrow canal off to one side which eventually sumped. The carnival was over. We retreated, leaving one wide-open inlet side lead and a few other minor dry side leads; not enough time in the day. Paul had an exhaustion-induced (physical and mental) near death experience in the massive section of passage (a few kilometres from home) when he opted to traverse a slope of hanging boulders rather than a simple solid climb. The whole lot took off under his feet and he somehow managed to land in the only deep pool of water for 100 m in either direction and then have all the ensuing chaos rain down around him but none of it on him. Lucky boy. It was a slow trip out after that but we got there. Over 2,550 m of new passage in the book! While we were referring to it as Cherty Cave, the local lads decided they'd call it Hang Nuoc Ngam (Underground Stream Cave... catchy).

The others had had a successful day, too, with a sketchy climb down into new river cave, 500 m of survey in the bag and wide open passage ahead of them. A lack of rope and buoyancy had turned them off jumping into the stream down the rapid at their turnaround point – it might have been a one way trip.

The next day was day six, so it was home day. We figured we were in for an easy day, most likely heading out the way Adam had headed in back in 2009. The GPS certainly suggested so. Later examination of maps indicated we'd taken a stupidly circuitous route on the first two days. This is the typical Vietnam experience – the guides operate on memory and gut instinct out here, without the benefits of GPS, maps and satellite imagery. Sometimes it's hard to contain one's frustrations when you realise you've spent 30% of your expedition time walking in directions you totally didn't need to, but it's a good test of character and my ability to deal with it has improved markedly since my early trips.

The only hiccup on day six was hammock failure during the night. Our campsite was on the sandy bank with only crappy vegetation around. The guides harvested stout spars from further afield and built themselves their classic braced square sleeping frame, and made a triangle one for us, but Dave and I knew we couldn't sleep within 10 m of Paul's snoring, so we'd got them to set up an alternative rig for us. After two nights the braced pole shoved in the sand we'd been sharing gave up the ghost. It was a saggy night's sleep.



A rude speleothem Team B found on their first trip out

The walk out proved to be quite funny (if you'd managed to swallow your Little Book of Calm). It was a pretty gruelling hill climb and descent, but it was only a few hours and we came out at exactly the same spot we'd left from on day 1. So our initial epic day 2 tour of the jungle was completely pointless. Ah well.

Coming back in to phone/internet range proved quite entertaining. The world had taken a couple of steps further toward Armageddon, but it was still laughable rather than scary. Well, laughable for our team, at least. It turned out the other team had had a horror run and they were currently unaware that it was about to get a whole lot worse. Day 1 they'd been refused permissions and had returned to Phong Nha. This was kind of handy, as the day late arrival (Josh Bratchley of Thai soccer team rescue fame) was able to easily catch up with his team. Then they'd headed out the next day to a good lead we had lined up as a day trip space-filler, but again permissions fell through and it was two in a row for them. By now Howard Limbert had managed to rearrange a few things and got a guide and porter team together for them to head off for another target on a five day trip. After they headed out the authorities came knocking on Howard's door trying to track down one Josh Bratchley so he, and anyone he'd come in contact with, could be quarantined, as he'd shared an international flight with a woman who'd tested positive for corona virus. Vietnam wasn't taking prisoners with their approach to tracking and tracing. He and the rest of his team were now screwed, with mandatory quarantine awaiting them upon their return. Poo.

FREE THE PHONG NHA FIVE

No point all of us having no fun though, so we lined up a day trip for the next day to the second area/cave the other team had been turned away from a few days earlier up near Phu Nhieu. It was about an hour's drive north of Phong Nha and we thought it was all good to go but when we turned up to our guide's house it was pretty evident there was a wedding on.

Amazingly, the guide was still prepared to take us out, but not to the good lead further up the hill, but to another cave he knew closer by. He lead us there (about half an hour's walk through fields and moody water buffalo) to a resurgence then waved goodbye and went back to marry off his daughter. Good bloke!

The cave started with a sump, which didn't bode well, but a tight bypass was negotiated and we found ourselves in delightful large stream passage. Alas, it sumped good and proper after a couple of hundred metres. On the way out Paul managed to put his hand on a bloody great snake. It was so ridiculously well-camouflaged on the cobbled floor that you almost can't see it in the photos and videos we took of it. An online snake ID site later informed us it was a three-horned pit viper (not a friendly type). You never know when you're going to take your life (or a snake) in your hands caving in Vietnam.



Spot the snake...

Not the grandest day out but better than what the other team was doing when we got back to Phong Nha. They'd been met on the side of the road by the disease control squad, dressed in full PPE. They'd been poked, prodded, tested and fumigated. It came as a bit of a surprise and was a bit of a laugh initially, but the reality of 14 days quarantine set in pretty quickly. Thankfully the authorities agreed that since they'd been out in the jungle, effectively quarantined from the rest of the world for five days already, they'd only make them do ten more days under house arrest in Phong Nha (and not in some horrid quarantine facility – Australians complaining about 'hotel quarantine' conditions in Australia need some perspective). Another British expat, Colin Limbert (Howard's brother) who works for Oxalis, was also put into quarantine in the same residence as he'd just got off guiding



an Oxalis tour which had a suspected corona virus case on it. So five foreigners and a bunch of locals (porters/guides) holed up in the one house and drank themselves stupid for ten days. They were quite the local attraction; Phong Nha is a very small place and they were the talk of the town. Some people treated them like pariahs while others took pity on them and brought supplies (booze mostly), games and conversation. It is important to note that although the situation did get fairly dire emotionally for them now and again, at no point was it serious enough that they opened the Monopoly box someone supplied.

KEEP CALM AND CARRY ON

With the B team holed up in quarantine, the A team decided we'd better double down to take up the slack. We headed out for what was supposed to be five days somewhere beyond Hang Vom (Arch Cave). The Vom system is massive, explored in the mid and late '90s and a dry section is a major tourist cave (Paradise Cave).

It started with an early schedule which progressively pushed out to a post-lunch departure. The guide was not one any of us had experience with and he looked a bit old and self-important. I'm not saying old guides are a problem, typically, but the Vietnam tradition of respecting elders sometimes leads to old twats being paid respect even when they're simply twats that don't deserve any. We got twatted big time on this trip.

To cut a long story short, he changed his story constantly on how far away things were and then took us to a cave right next to Hang Vom which was being used for adventure tourism day trips by Phong Nha Discovery Tours, complete with handlines. They referred to it as Hang Vom Dry. It turned out no one had ever surveyed this cave, so we bowled over ~400 m and headed home, but on the way the silly old git tried to coax us up some stupid hill very close to Phong Nha with full camp gear and the remaining four days of food. We told him that considering his earlier effort, we didn't like our chances on this one and that maybe a day trip some other time, without tens of kilograms of unnecessary gear, would be a better approach. We returned to Phong Nha.

So a five day trip had quickly turned into an overnigher with a lot of dead time. We were a bit gobsmacked at how badly this outing had turned out to be – it was pretty bad even by Vietnam standards. The self-pity was soon put into perspective when we got back to Phong Nha and were reminded of the circumstances over at the plague house.

MORE CHARACTER BUILDING

Ryan Deboodt (exceptional photographer) had arrived in town on his way to another job for the BBC nearby. Ryan is one of those strange Americans who is unassuming, quiet, intelligent and great company — not the type you see on TV or meet at tourist attractions in Australia. He's a bloody good photographer too. He would be joining us for our next trip out for a few days. It was a bit of a weird mission to try to find a fabled cave near Doline 2 of Hang Son Doong. The plan was to kill time re-checking some leads in a nearby cave pushed in 2010 (Loong Coong) while the lads swept the jungle for their allegedly hot lead.

John Volanthen (another Thai cave rescue hero) was meant to be coming out at this stage of the exped to attempt a connection dive between HSD and Hang Thung, supported by Josh, while there were willing Sherpas about, but he decided it was all looking a bit grim and made the sensible decision to stay home.

Our first day was short but sharp (ludicrously steep hill) with one of the most majestic camps ever — stunning jungle. It even inspired me to sketch the scene in my diary. Not a sketch of sufficient quality to reproduce here, but just the fact it got me drawing speaks volumes. Day 2 was a long slog up and down and round enclosed depressions infested with every spikey bastard plant and animal the jungle could muster. Mid-afternoon we pulled up stumps at the edge of a very large hole in the ground — Doline 2. There was no water anywhere but there was a grove of banana plants, so we set up there and started the water-harvesting process (cut down banana plant, hollow a well out of the centre of the

stump and wait). The problem with banana groves is they tend to form monocultures in deep wet soils and exclude other trees. This makes swinging hammocks difficult, particularly when the banana grove is surrounded by diabolical razor karren on steep slopes.

In the end I decided to tempt fate and use a big tree for one end of my hammock and large banana plant for the other. A test weighting demonstrated the banana wasn't up to it, so I backed it up to a nearby banana and it looked like it would work. And it did... for the first night.

HEAVENLY RAYS

The next day we headed around Doline 2 and over to Loong Coong. A 15 m wide circular hole in the forest floor plunges 70 m into a massive chamber. It was a sunny day and the beams of light cutting through the steam in the cave were gobsmackingly beautiful.

Lots of photos taken, including much photographer assistance activity for Ryan, posing here, posing there, lugging his kit around for him.

We then left Ryan to his own devices and pushed the lead left over from 2010 in the lower end of the chamber. In the end we didn't even make it as far as the 2010 team due to a general lack of energy and insufficient gear. From the direction it was heading and the entrance's location based on the 2010 waypoint it was clear it was just going to be another entrance into HSD. Of course back in Phong Nha the new waypoint we had collected placed it on the other side of the underlying HSD passage which suddenly meant the draughting lead is heading AWAY from HSD into a tantalising blank spot on the map. ARGH!



ALAN JACKSON

My near-death experience with a banana plant

THINGS THAT GO BUMP IN THE NIGHT

My banana tree failed catastrophically in the middle of the night. There was an almighty crash which sounded very close to my ears and I was bouncing up and down in my hammock. It was pretty evident what had happened but there was no tunnel with a light, so I figured I was still alive. To my great surprise I still seemed to be suspended above the ground. I gave it five minutes so as not to let on to anyone else around camp that there'd been an incident; saving face, even in the jungle, is critical. Several people heard the tree fall in the night but since no one screamed they figured it was just a random event and didn't get up to investigate. So, face saved.

After five minutes, I turned a light on and snuck a peek, discovering the banana was resting on my tarp, having missed me by a handful of degrees. I couldn't work out how I was still airborne though; that would have to wait till daylight. In the morning it was evident that the banana had sheered through immediately above the point where I'd tied on the back up, so I was still suspended from the remaining stump, backed up to the other stump. Everyone had a good laugh, but importantly I'd been nonchalant enough about it during the night that I'd closed the door on this becoming a ribbing point for the rest of the day/my life.

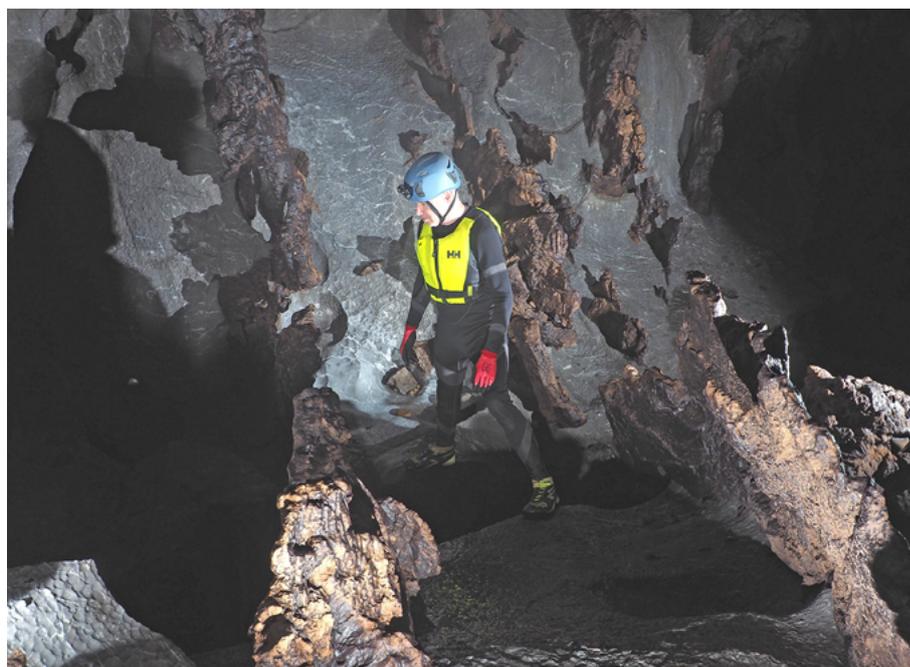
IMPENETRABLE FOG

The rest of that day, and most of the next, was spent flogging through the jungle to a new camp spot and swinging in camp killing leeches and time while the lads performed a fruitless search in the rain and low cloud for the fabled cave. It didn't eventuate and we headed out a day early. A bit of a nothing trip in terms of pushing new cave, but the sunbeam experience in Loong Coong will be forever etched in my memory and totally worth the five days invested in the outing... and nearly being killed by a banana.

It was now 15 March and the news on the pandemic front had developed somewhat in our absence. The UK was going under, but Boris was still in denial. Australia was starting to sound nervous and talking about closing its borders to non-citizens. The local tourism industry was falling on its face and pretty much all Oxalis staff were being put on ice. Non-essential expats were being fired. Better get some more caving in before it goes totally pear-shaped.

THIRD TIME LUCKY

It was the Phong Nha Five's last day of quarantine, so we booked ourselves a day trip to the cave we'd already tried to get to



Dave in a chert jungle in Hang Nuoc Ngam

twice this expedition (Phu Nhieu 4). No wedding today, so our man took us up and over the big hill to an unassuming entrance at the base of a small cliff. Small, no real draught but not far from a wet season channel and sink. It turned into a cracking cave. The crusty upper level dropped into a large wet season overflow passage, which in turn intersected a larger wet season overflow passage (complete with plenty of static pools to swim through) which again intersected another passage with an active river. Bonza! We pushed the river upstream a couple hundred metres to a sump being fiercely defended by an irate crab. Time was short so downstream was left for another day. A good km or so of quality cave.

Back in town the quarantined team had all been given the once over, issued with a clean bill of health (including a certificate to prove it) and released back into the wild. A night out at the bar was clearly in order. At the bar we bumped into a group of American 'cavers' who were waxing lyrical about their ground-breaking Vietnam caving expedition plans. We found it rather amusing, as with 30 years of experience running expeds in the country, our British-led team know all the ins and outs of expedition caving in Vietnam and just how much bureaucracy, paperwork, levels of permission, blood, sweat and tears is required to be allowed to set foot off the road in search of new caves in this country. We also knew that we had the only active permit to be running expeds in this part of the country. Basically what they were really doing was going out with a local adventure tour operator, Jungle Boss, to some caves the British explored in the mid and late '90s, but they made it sound like they were off to find another world's

biggest cave and redefine cave exploration in the country. When we pointed out they were kidding themselves they complained that they'd been unable to find any good history on the area. We suggested they could have contacted Howard and Deb, or visited <http://www.vietnamcaves.com/> for comprehensive trip reports.

PANIC BUYING (AND FLYING) STARTS

The news was full of Australians coming to blows in supermarket aisles over the dwindling toilet paper supplies. Things were starting to go to shit back home and toilet paper was apparently the only clear path to cleaning it up. Snablet and Martin (part of the Phong Nha Five and who'd already been in Phong Nha working for Oxalis prior to the expedition) had spent a lot of time thinking about their situation and their prospects of getting home and they chose to bail now rather than squeeze a last few days caving. Snablet almost had no choice, as he was returning to New Zealand and with Australia not allowing even transiting non-citizens into the country his options for a direct flight to Auckland from the few South East Asian ports still allowing transits themselves were few. (Snablet got home, did another two weeks quarantine upon arrival, then did four weeks of full lockdown with the rest of his compatriots. Harsh.) Martin mainly wanted to get home before the UK imposed mandatory quarantine on arrival, as he didn't think he could do another stint back to back. Ryan headed for Da Nang, where he was meant to be meeting a BBC film crew to work on some monkey project, but in the end they didn't make it out and Ryan bailed back



COVID-CAVING — VIETNAM 2020

to his home base in Tanzania, which he in turn escaped from back to the US for the full Trumpageddon experience.

Darren, Paul and Josh were prepared to risk it though. They hadn't had the luxury of joining the successful Laos exped a few months earlier like Martin and Snablet had, or working in the area in the preceding weeks, so they wanted to make every moment count they could. We split up into two teams again and headed out for another ~5 day stint.

Dave, Darren and I headed north and Adam, Josh and Paul headed back to Quang Ninh to finish the river cave Adam and Deb had started on our first trip out. Dave and I were happy to take our chance with unknown leads to the north with our good mate Darren rather than an almost certain going cave to the south.

BITS AND PIECES

We drove a few hours north, found our local guide who allegedly knew a few good cave entrances (which had been recced by another guy who works for National Parks and does a great job of ground-truthing leads and sorting permissions). As is traditional in these parts, we introduced ourselves then took over his house: commandeering his kitchen, entertaining his kids, sleeping on his table etc. His first cave, Cha Ra, wasn't far away, so we hit it that afternoon. It was a half hour walk through fields and plantations to a massive cliff with a big entrance and small stream flowing in.

Well, we walked and he rode his motorbike, which had a leaky manifold, or something, and sounded like some kind of cartoon bubble blower. We scoured the large entrance and finally found a way to climb down in one corner to teetering rock pile with the sound of flowing water below (this is how far it had been recced). A handline got us down and the cave got big with a small stream. The stream then sank and the only way on was into smaller passage which obviously rages in the wet season. The passage descended steeply, including some great climbs on steep bedding plane descents. A 15 m pitch to a chamber and a static sump was all that awaited us at the bottom though. 300 m long and 140 m deep – a nice afternoon.

The next morning we headed up the road in the back of a local's truck for a few kilometres then set off on foot up a river. I'd been here two years previously on my way to Ruc Ma Rin (a fantastic cave which kept me, Sarah Gilbert and two others busy for four days; 4.7 km long and 200 m deep). In 2018 the walk in had taken all day, finishing on dark.

Today we only walked for an hour up the

first hill then set up camp beside the stream and walked 100 m to the entrance for an afternoon session.

The cave, Ma Lon, was a nice, small (by Vietnam standards) flood resurgence. After 100 m it narrowed down and twisted and turned to a large side chamber and an active stream. The stream was followed up via a series of flowstone-coated climbs, becoming increasingly batty, until it sumped in a pool of panicked swimming bats (aquabats, one might say). Dave pushed a roof sniff to find a proper sump a bit further on and briefly wore a bat like a face mask. 460 m of survey in the bag, and fifteen bats each clinging to our clothes, we toddled back out to camp.

Our guide said he had another cave a couple of hours away, which he could look for in the morning, but he'd not been there for ten years. The dude was getting on a bit, had a bung knee and was popping a lot of pills each evening so we decided we'd spare him the agony and us the tedium of waiting out what would inevitably be a classic fruitless search day – this wasn't my first rodeo. We got on the sat phone and checked with Deb (who was still based in Phong Nha solving Oxalis problems) if she thought we should move to some other potential leads in a small town on the way home and settled on that plan of action.

YORKSHIRE CAVING

We wandered out in the morning of the 19th with a terrifyingly loud soundtrack of crashing thunder. Just keep your head lower than the water buffaloes and you'll be fine, right? We sheltered from the rain (and electrocution) in the front porch of a random 95-year-old who was delighted to entertain us and supplied us with sheets of cardboard so we could place our leeches on there for him to burn with glee. We dropped off old mate at his house and relocated to Ban On village, where we did the permissions thing for the fiftieth time in three weeks then went to meet our local guide. He had two caves for us, both shafts. We had limited rope with us, having horizontal targets in the other area, but figured we'd check out the closer one which was allegedly only a 20 m pit. To our amazement it was indeed close AND a 20 m deep pit – usually the locals' estimates of time and pit depths are woefully inaccurate (time is nearly always overestimated and pitches could go either way). With no drill, some nasty rubs and only just enough rope, I set up an exciting natural rig. The current generation of cavers would have probably deemed it impossible and gone home; the modern era of omnipresent hammer drills has severely weakened the skills and mindset of the

average modern caver. You haven't lived until you've abseiled off a knot jammed in a crack.

At the bottom of the pitch a spacious passage headed south back towards where we knew there was a valley with a surface river flowing. It closed down in flowstone. Dave and I were happy it was over but Darren, having suffered ten days in quarantine, wasn't going to give up so easily. He spotted some nasty tight slot in the northern wall of the entrance shaft and burrowed in. Dave and I waited impatiently for him to return emptyhanded but our hopes were dashed when he called out it was going. It was horrible. Proper Yorkshire tight and scratchy and not what we come to Vietnam for. But to Darren's credit it suddenly opened up and there was a healthy stream flowing across the floor. It, of course, sumped 20 m later ...

The only other lead was reputedly a 50 m shaft a couple of hours away. With not enough rope we figured it was pointless and headed for home. We only had two caving days left, one of which we knew should be a good crack in downstream Phu Nhieu 4.

THE EXODUS BEGINS

Back in Phong Nha Operation Foreigner Evacuation was in full swing. Flights were being cancelled faster than you could book them and it was panic stations. Everything we could find suggested my flights were still all good, with the exception of likely changes to the Melbourne-Hobart leg, which didn't concern me. Keen to only start throwing money at airlines when I absolutely had to, I put on my best poker face and stayed the course.

Dave and Darren discovered their Vietnamese domestic flight had been cancelled and their international flight had been pushed out two days. This meant more time to cave for them, but also meant they'd be overstaying their visa. We decided that in the current climate, the last thing the Vietnamese officialdom was going to worry about was a one day visa overstay. Foreigners were starting to be considered unwelcome as 80% of the virus cases in Vietnam had come in on foreign travellers. I experienced my first bit of racism that morning in the market, with some local shopkeepers giving me a wide berth and refusing to serve me, instead of the usual beaming smile they reserved for everyone. It was mildly upsetting but more a happy feeling I got, seeing first hand that it's not just Asians in Australia that were getting abused but any outsider anywhere – it's not just 'whites' that are racist and make irrational decisions based on ignorance and stupidity, it's all humans.



THE LAST HURRAH

We dragged Deb out for a final day of caving in Phu Nhieu 4. We racked up another kilometre of passage in the downstream section, which ultimately sumped in a ludicrous maze of narrow canals, only a few hundred metres shy of the upstream sump in Three Horned Pit Viper Cave/Phu Nhieu 2. We really didn't check them all, as the plethora of question marks on the survey indicates. It was a great last day's caving.

When we got back to the van our driver indicated we had to stop in at the border post on our way back. Hmm ... always an ominous sign and we were intensely aware of the fact that no one had been put in jail yet, which is a traditional component of all Vietnamese expeditions. When we pulled up we pushed Deb out to be grilled — she spoke pretty good Vietnamese and has done heaps of jail time.

To our horror we were all ordered out of the van and directed into a scungy little room, given cups of cold tea (which we aren't refuse) and given face masks to put on. Two very important-looking dudes spoke at us for a while and plenty of furtive glances were shot around the group. Then suddenly it was all smiles as we posed for photos and even had a movie made by our driver on the head border guard's phone while the guard rolled out some long monologue. Apparently he was just excited to have us in the area and to be able to do his job of ensuring all our paperwork was in order. Handshakes all round, some more tea and we were on our way, somewhat relieved.

CALM BEFORE THE STORM

It was 21 March and we had a rest day to finalise data entry, clean and dry gear and prepare ourselves for the 'sorry, your flight has been cancelled' game. The other team were due out sometime this day and would have no idea of the significant corona virus-related developments over the previous five or so days. As soon as they popped out into phone range the fun started as Paul and Josh were informed of their new itineraries. Both had about half an hour in Phong Nha to sort their shit out and then head off again. In the end Josh flew south to HCM, then back north to Hanoi, and got out safely. I wouldn't have liked to sit next to him on the plane, smelling his five-day jungle aroma. Paul, who'd managed to get a delightful case of footrot, had been moved to a flight out of Hanoi the following day, so had time to take the night train from Dong Hoi (and avoid the risk of yet another flight cancellation). He made it home in the end, too, and I assume his feet didn't fall off. Darren and Dave managed to score a



The latest in air hostess coronavirus fashion

seat on my flight to HCM and were then planning on working the phone and service counters to see if they could get onto an earlier international flight.

Josh, Adam and Paul had had a successful trip out, with another kilometre or so of great river cave in their primary target and then a series of long marches (nearly as far as the Laos border in one spot) to a few other caves of reasonable interest.

The dwindling stock of foreign cavers went out on the town for one last session. As seems to be standard on expedition, I had an inebriated near miss on my bicycle. I'm not entirely sure why I feel the need to engage in bike races when under the influence in Vietnam.

Eyewitness accounts vouch for several laws of physics being breached when my chain came off. I escaped with just a bit of skin off my knee, but it still isn't clear what my knee hit — could have been handle bars, pedal or even my face.

HOME AGAIN AND AN UNCERTAIN FUTURE

My trip home went without a hitch. I'd packed the essentials, including hand sanitiser, face masks, US\$ for bribing Vietnamese officials and toilet paper for bribing Australian officials. The flight to HCM was on schedule. The airport was eerily quiet and the flight boards used the word 'cancelled' quite a bit.

I was very happy when my flight appeared on the board with the other c-word (check in). I passed the time in HCM watching Dave and Darren work the phone and manage to secure a flight home a few hours after midnight that night (and thus only overstay their visa by a few hours) and pissing myself at the Facebook reports of the Americans' fabulous discoveries with Jungle Boss. My Vietnam Airlines flight to Melbourne also went as scheduled. It was

the second last Vietnam Airlines flight to Australia before they cancelled all flights. The plane was packed with lots of nervous-looking people. The cabin crew were in full PPE garb and tried to serve you the normal meals and refreshments without actually touching you or any of the things they were passing to you. It was quite comical. In Melbourne disembarking passengers were given a few extra bits of paper, but I was surprised at how blasé everyone was. It was the day all pubs and restaurants had to close (at noon) in Victoria, so I grabbed a sandwich for my last supper and watched as dejected staff packed up their chairs and tables for good (when's the next time a food business in Melbourne airport is going to be a money spinner?).

My flight to Hobart was pushed out to later in the day. Instead of four or five Virgin flights to Hobart that day there was one and it had about twenty people on it. Tasmania's two week quarantine rule was proving a good deterrent for all but returning locals from travelling. A bloke let out a loud double sneeze in the waiting lounge and I've never seen people move so quickly in my life. It was all a bit surreal, with suspicion and fear etched in the eyes of everyone around.

I got home a couple of days before Tasmania moved from home quarantine to hotel quarantine, so I did my two weeks at home. With my partner, Loretta, an 'essential worker' and still having to go into work, we figured we'd best quarantine me from her as well as possible, lest I infect her with the dreaded 'rona and then have her infect half the Commonwealth public service in turn. The kids stayed home from school a week earlier than when it was officially recommended to cut off that potential vector also. It was a bit tough being home and watching the family milling about the house from my doorway but not being able to embrace or share meals with them. It proved a very productive period though, with heaps of reports written, the veggie garden sorted out and all the expedition surveys drawn up in record time.

I watched the world through my window and my family through the doorway. Living opposite a supermarket and bottle shop, my view made it seem more like the week before Christmas than the middle of a nationwide lockdown. I spent a lot of time wondering if this was perhaps my last international caving expedition. The concept of cheap and ubiquitous international air travel could be a thing of the past. What I took great comfort in, and still do as Victoria's 'second wave' takes hold, was that even if I was never allowed to leave my home state again, I couldn't think of a better place to be stuck.



The Wonders and Exhilaration of Caving

Garry K. Smith
NHVSS

YOU MAY ask what is so special about speleology, commonly referred to as caving? To answer this question we must look at the physical, social and scientific aspects of this underground pursuit. However as a starter, if you are physically fit, not afraid of heights, dark places, tight squeezes, deep water or the unknown and have a sense of adventure, then the 'caving experience' is for you.

The physical aspect of caving embraces the thrill and exhilaration of exploring large caverns, tight passages and deep shafts, swimming underground rivers and requires a combination of many skills such as abseiling, rock-climbing, prusiking, ladder-climbing, observation, map reading and agility.

The sport can present challenges of seemingly impossible feats requiring contortionist manoeuvres through a range of physical obstacles and constrictions, otherwise known as squeezes. Bear in mind that the object is to get through a tight cave passage in such a way as to remain physically intact and using the least energy possible.

Any fool with plenty of brawn attached to a safety belay can climb a flexible ladder; however, this is not the fundamental objective. It is to master the technique of climbing a ladder with finesse, using the minimum of energy as well as achieving the maximum degree of safety. When it comes to Single Rope Techniques (SRT), abseiling and prusiking, we can strap the most fancy and up-to-date gear on a beginner but it means nothing unless that person has learnt how to use the gear safely and efficiently under the guidance of an experienced person. When prusiking, having the gear adjusted to the individual's size, flexibility and comfort, and using the correct technique can make the difference between an enjoyable and an exhausting and unpleasant experience.

Important social aspects of caving include the mateship, comradeship, trust and team spirit which rapidly develops among fellow cavers set on a common goal. A



CARRY K SMITH

Croesus Cave, Mole Creek, Tasmania

day's caving often ends with sitting around a camp fire, sipping a cup of tea or other beverage and sharing personal experiences of the day and past trips.

Caves are one of the few frontiers that humans have not fully explored. There is still the possibility of finding new chambers and passages where no other human has been before. New discoveries in this subterranean world excite even experienced cavers. Some caves have deep shafts and vertical rifts, which test the caver's ladder and rope skills. Other caves have developed with complicated three dimensional mazes which test even seasoned cavers' navigation skills and there is a likelihood of becoming 'lost' or a better expression is 'geographically embarrassed', since you must be somewhere in the cave.

There is much to marvel at in the underground world. Some cave chambers are full of sparkling calcite crystals and exquisite calcite formations. Other caves are almost devoid of decorations, but the sculptured patterns and forms in the bare rock walls and ceiling have a wondrous splendour of their own.

When new caves are found, every effort should be made to minimise human impact by undertaking track marking to avoid delicate areas. There have been many articles written on this subject so I will not elaborate further.

Calcite decorations (speleothems), form over hundreds, thousands or even hundreds of thousands of years into an infinite variety of shapes, sizes and colours. So every cave is different and no two chambers or passages are the same.

Caves are a precious non-renewable resource which must be protected for future generations. Unfortunately caves are partly destroyed every time humans enter them, whether intentional or not. Therefore all cavers should consider themselves as honoured guests and never intentionally damage a cave.

Only experienced leaders should undertake the training of beginners, so that the fundamentals of safety and cave preservation are fully taught and explained. In this way beginners may have a full appreciation of their impact on this fragile underground world. For conservation of this limited



GARRY K SMITH

Garry Smith in Honeycomb Cave, Tasmania



GARRY K SMITH

Cathi Humphrey-Hood, RockMe Cave, Timor NSW



GARRY K SMITH

Greg Thomas in Shothole Canyon Cave

resource, the training of beginners should be restricted to areas or caves ('sacrificial caves' for want of a better term) which have been well trodden over the years and present little chance of further damage. In this way caving skills can be honed without risking damage to more sensitive caves and leaders may assess the individual's attitude and ability before moving on to more delicate caves.

Caving adventures subject people to a variety of circumstances from adrenalin pumping situations through to peaceful times resting in an awe-inspiring chamber. Caving is both a sport and a science. The sporting aspect must be developed before the science can be truly pursued. To fully appreciate the 'caving experience', individuals should be exposed to all of the physical and mental aspects as well as have some interest in the cave sciences.

Experienced cavers within ASF clubs do a great job teaching beginners the practical means of traversing a cave system, safety practices and conservation aspects of caving. However, experienced cavers who are training novice cavers are presented with the perfect opportunity to 'plant the seed', which may spark an individual's interest in one of the many sciences. These include the study of cave ecology, palaeontology (study of bones and fossils), geology, chemistry, hydrology and surveying. Speleology is the general term that covers all of the above as well as encompassing the exploration of caves as a sport or profession.

For instance, if we look briefly at ecology and ask someone what creatures inhabit this underground world, the usual answer is bats. Did you know that despite the popular saying 'as blind as a bat' the insect-eating microbats have good eyesight and can see very well in low light conditions; they have

the added ability to navigate using sonar in total darkness.

With their echolocation system they can fly at great speed through tight twisted passages with astonishing accuracy. They can fly through and around trees and thick vegetation, detecting flying insects in total darkness and catching them in flight. During the day some species congregate in small groups while others roost in large colonies deep in the cave.

They usually prefer chambers or passages with a domed or elevated roof where warm air is trapped. At dusk a mass exodus occurs as they leave the safety of the cave to feed on airborne insects during the night. The microbats are harmless creatures that are an important part of the ecology of our land as they eat up to half or more of their body weight in insects each night. This helps to keep insect populations in check and reduces the need for farmers to use



GARRY K SMITH

Andrew Baker in Lynds Cave, Tasmania

insecticides. The small cave dwelling microbats should not be confused with their larger cousins, the fruit eating megabats, otherwise known as flying foxes.

Besides bats there are many other varieties of unique fauna that live their whole life in the cave environment in total darkness. Examples include cave crickets, spiders, millipedes, beetles, fish and crustaceans. Even the undisturbed cave floor is teeming with microscopic life, so cavers should stick to a single path to avoid compacting all of the floor area and destroying the ecology of the cave.

A study of this fascinating microscopic world will shed a whole new light on your understanding of preserving the total cave ecology. Next time you're underground have a close look at a small heap of bat guano with a large magnifying glass. A thimble full sample observed under a microscope will reveal more varieties of creatures than you ever imagined.

The caving fraternity is judged by the critical eye of the public, so each action of an individual could mean the difference between speleologists in general having a good or bad reputation.

Strict adherence to the Australian Speleological Federation Inc's (ASF) Minimal Impact Caving Code will help preserve caves and maintain the good name of speleologists.

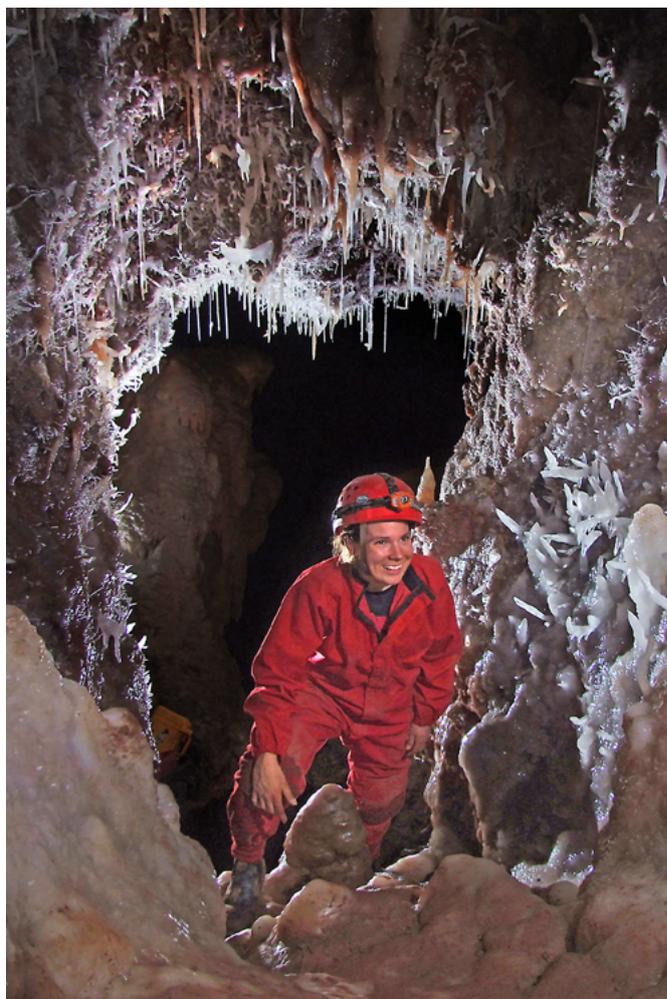
This code of practice is widely accepted throughout the caving fraternity and includes such things as: avoid touching decorations (speleothems), leave nothing and take nothing but photos and memories. Without this philosophy we run the very real danger of ruining our caves forever. We are but specks on this earth but our actions have far reaching consequences.

Some people may rightly argue that





Melissa Hadley in Lynds Cave, Tasmania



Tessa Baker in Barralong Cave, Jenolan NSW

GARRY K SMITH

GARRY K SMITH

every time a person enters a cave, some damage is done, whether intentionally or not. However, while responsible people are interested in caves, attention will be drawn to the need to protect this fragile wilderness against unscrupulous profiteers, intent on mining easily accessible limestone outcrops containing caves. Mining will remain a threat while ever our community continues to use large quantities of cement products, lime for agriculture and as a coal mine fire suppressant or neutralising colliery washery water. The efforts of speleologists and interested groups to save caves in the future will no doubt depend on tomorrow's adults who have often gained their first caving experience as youth members in a caving club, the Scout Association or another youth group. Having said that, one must consider the need to mine limestone is driven by the demand of consumers (ourselves and society at large).

By far most caves occur in limestone but we should bear in mind that caves can also occur in other rock types. The incorporation of caves into National Parks to manage and protect them is a step in the right direction, but there is no absolute guarantee that this will protect them forever.

The Australian Speleological Federation

Inc. codes and standards can be found at <https://www.caves.org.au/administration/codes-and-standards>.

CAVING SAFETY AND MINIMAL IMPACT

Here is a shortened summary of the caving safety and minimal impact guidelines:-

- Make sure that other people know of your plans before going underground. In this way if the worst scenario was to eventuate, there will be someone to raise the alarm.
- Make sure that your group has the appropriate permit or permission of the land manager where applicable.
- Make sure that each person in the group has the appropriate equipment and skills required for the cave to be entered.
- Ideally caving parties should consist of a minimum of 4 and maximum of 7 persons.
- Always cave as a group, don't split up unless there is a safe number and an experienced leader in each group.
- Each person should carry at least three sources of light, a personal first aid kit and wear a good fitting helmet with four attachment point chin strap.
- Strictly adhere to the ASF Minimal

Impact Caving Code. As an example, one part of this code includes not touching decorations (speleothems). This is because the perspiration from your skin will discolour the formations and prevent them from growing. Dirt or mud inadvertently left behind from contact with the decoration will also inhibit the future growth of the speleothems. There is also the chance that fragile speleothems will be broken, destroying hundreds of years of growth in less than a second.

- Be aware of the dangers of 'foul air', elevated carbon dioxide (CO₂) and reduced oxygen (O₂) in the cave atmosphere.
- Be aware of the signs of hypothermia and claustrophobia.
- Any squeeze you can get through, you can get out of if you don't panic.
- Suggest that everyone should go to the toilet before going underground.
- Don't leave rubbish in a cave and remove any you find.
- Do not disturb any bats you come across.
- Strict adherence to safety standards will minimise the possibility of accidents. There can be no compromise on safety.

Thank you to Katerina Fulton for proofreading this article.

Exit Cave, Tasmania

Mystery Creek Passage Sump Exploration

9 January 2020

Janine McKinnon

ASF – CDG

Modified from a *Speleo Spiel* article

BACKGROUND

Exit Cave is a large, multi-entrance system in southern Tasmania. It is one of the longest cave systems in Australia, with over 20 km of surveyed passages. The cave has been known for many decades, and multiple expeditions and day trips have been undertaken to explore and survey it, mainly in the 1960s and 1970s, with STC undertaking a multi-year re-survey and map exercise around 2009-2014.

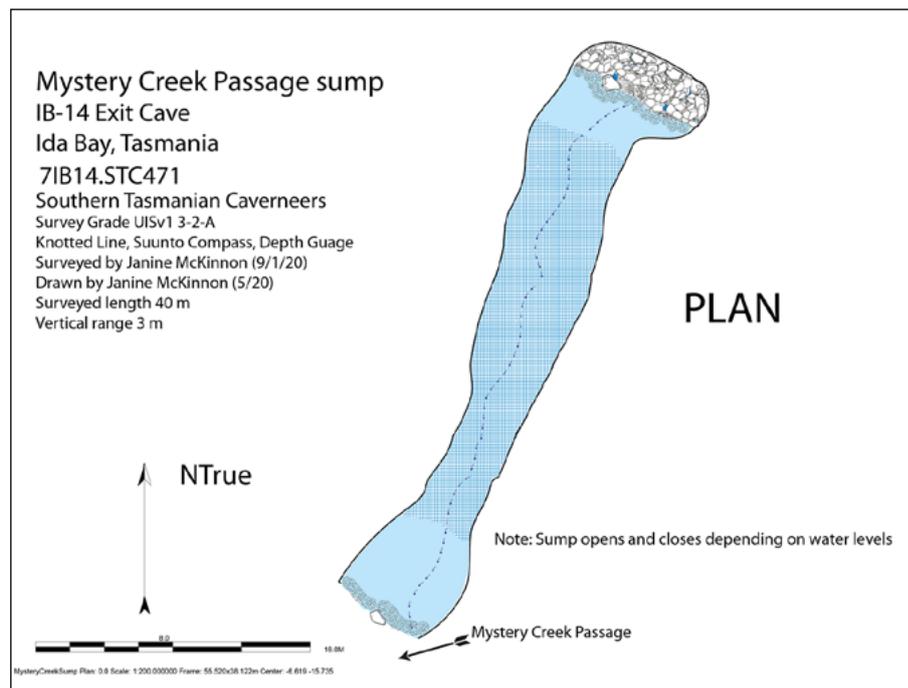
Mystery Creek Cave is on the other side of Marble Hill (within which Exit Cave sits), and is sometimes called Entrance Cave because the stream that flows through, and out of Exit Cave, includes the water that flows into Mystery Creek Cave. Not surprisingly it enters Exit Cave in the Mystery Creek Passage. In fact, into a quite reasonably-sized sump pool at the end of the passage. It is about a 300 m straight-line between the end of this passage and where the water sinks in Mystery Creek Cave. No-one seems to have thought it worth mentioning this to a cave diver on any of the prior exploration and mapping trips there.

THE LIGHT BULB IGNITES

This story starts sometime early in 2019 when Chris Sharples and Rolan Eberhard were on a DPIPWE (no, I am not spelling the whole thing out) work trip of Rolan's, assessing parts of Exit Cave for management purposes. They were up the far end of Mystery Creek Passage when they came upon a quite large pool of water. It looked very inviting. After returning home they did some research, and called every old caver they could think of who had ever been into Exit, and discovered that no one seemed to either:

- know about this pool or
- have thought of pointing it out as having exploration potential if they had been there.

They thought it looked like a possible dive prospect for the fabled connection between Mystery Creek Cave and Exit Cave (see above). It was in the right place and it was a large puddle of water. What more



could you ask for? Yes, there is a major fault running through Marble Hill that interrupts all the known passages in both caves, but no dare, no win. So they brought me along on their next trip to assess the pool's dive potential (SS 432, p. 19)

Several planned trips to dive the sump then failed to launch due to heavy rainfall, Sherpa unavailability and my out-of-state jaunts, but finally all the ducks were lined up. We had a good, fit team, a lovely sunny day, and low water levels. VERY low water levels. We started the walk at 9:15 am, got to the cave at 10:30 am, and to the dive spot around midday. Everyone was still smiling and happy, despite the sometimes-athletic terrain and, in particular, the wet feet we had finally been unable to avoid (despite heroic efforts) only five minutes from the dive site.

After site assessment, and soup and lunch, with help from the team gear was sorted and I got organised to dive. There is a sting in the tale (pun intended) of this trip so before we get too far along in the recounting of the dive I might just go

backwards a step or two to give you all an idea of the dive kit I had chosen to bring. This choice of gear was predicated upon discussions I had had with Rolan and Chris after our assessment trip. Potentially it is 300-odd m from the pool to Mystery Creek Cave.

That would take quite a while to swim, running line, and then to survey back from if all went spectacularly well.

I had suggested a reconnaissance dive with small, light, 3-litre tanks and a wetsuit. You can tell when you are in the company of screaming optimists when they tell you to bring all that would be needed to get all the way through.

So I went with the optimists. A drysuit (and undersuit), 7-litre tanks and 350 m of line on two reels, plus all the other paraphernalia, which, in my defence, I had tried to keep as minimal as possible.

Back at the dive site, I was ready to go. Gabriel was madly shooting video and stills of me looking as old and wrinkly as possible and the others just wanted me to get on with it so they could go back to the

dry spot above the beach (here it was very drippy) and finish their soup. So on with it I got.

I swam straight down and headed along the floor looking for the passage-line. Visibility was about 20 cm in the still and very tannic water. After bumping off the wall a few times, and looking for the sparse tie-off points, I did a sharp left-hand turn and continued on. I surfaced after only about five or six minutes in a chamber, facing a wall of rockpile.

I called out a couple of times, in case there was an air connection back to the others but heard no response. I de-kitted and started looking around the small chamber for a way on.

The rockpile looked pretty solid with only small gaps. I climbed up a boulder or two and poked about but I didn't see any gaps a person could fit through. I was in a (very expensive) drysuit and didn't push super-hard though. I did a quick and very crappy sketch (I can't draw for nuts) of the chamber, then got my gear back on and surveyed out.

When I got back to the beach no-one was around (they showed such touching faith that I was going to get somewhere and take a lot of time) and I had to call to get their attention. Brief dive report given, most of the dive gear off, and Alan suggested that I swim along the surface of the pond and see how far the air space went. That sounded like a good plan. So I did. I swam to the far wall of the pool, turned left... and looked down a lake 30 m to the rockpile I had just left. I did swim the distance to be sure, and there was my line coming up out of the water. I laughed all the way back. It was that or cry.

I must say the team took the information in good spirits. I stayed in the water while I delivered it to save myself a potential instant lynching from the realisation that they had carried all that gear so far for nothing. When I realised that they weren't going to kill me in the emotion of the moment I thought it safe to get out.

Anyway, we probably don't need to be-labour this sad tale too much longer. I got a cup of soup (thanks, Rolan and Gabriel) while the others started packing around me (they were bored already), finished undressing (as Serena grabbed my undersuit, groundsheet and a few other things) and tried to be time-efficient and laid-back at the same time. It didn't work very well.

We started out around 4 pm (I think). We took a slightly scenic route out, did a



Support crew members Karina, Rolan and Alan passing the time with some knot practice



The support crew enjoying yet another cup of hot soup while waiting

couple of detours, and were out of the cave by 6 pm.

We were back at the cars at 7:45 pm.

It was a disappointing day for me; I am not sure about the others but they all said they enjoyed it and seemed happy. At least we know what happens beyond that pool.

POSTSCRIPT

A couple of us will go back with wetsuits next summer when the water levels are low and we can swim it and have a really hard look at the rockpile.

ACKNOWLEDGMENTS

Exit Cave main entrance is more than an hour's fast walk from the cars, with a climb and descent of about 200 m.

The passage is a fast party's hour and a half from this entrance, with a major rockpile and some acrobatic areas to negotiate. Dive gear is bulky and heavy. The Sherpas were a superbly fit and capable crew and deserve much praise for their efforts in getting the gear to and from the sump.

Support Party: Karina Anders, Serena Benjamin, Rolan Eberhard, Alan Jackson, Gabriel Kinzler

FURTHER READING

Southern Tasmanian Caverneers magazine *Speleo Spiel* # 432. (available on STC website)

A short (somewhat shaky) video can be found here: <https://www.youtube.com/watch?v=QhvGTSyb038>

ASF Satisfaction Survey 2020

Sarah Gilbert
ASF General Secretary

IN JANUARY the ASF sent out our second satisfaction survey to follow up on last year's. Thank you to the 39 people who took the time to respond. This was just over half the responses we received last year after the Devonport conference. Due to the lower turn-out the following summary may not be representative of all members, but it does represent the views of the ~5 per cent of ASF members who did respond.

If you missed out you'll get another chance to give feedback in the next survey and you can contact us anytime at asf.caves.info@gmail.com with comments or questions.

Overall the majority (77 per cent) thinks the ASF is value for money, but there is room for improvement with communicating what the ASF does for its members and more

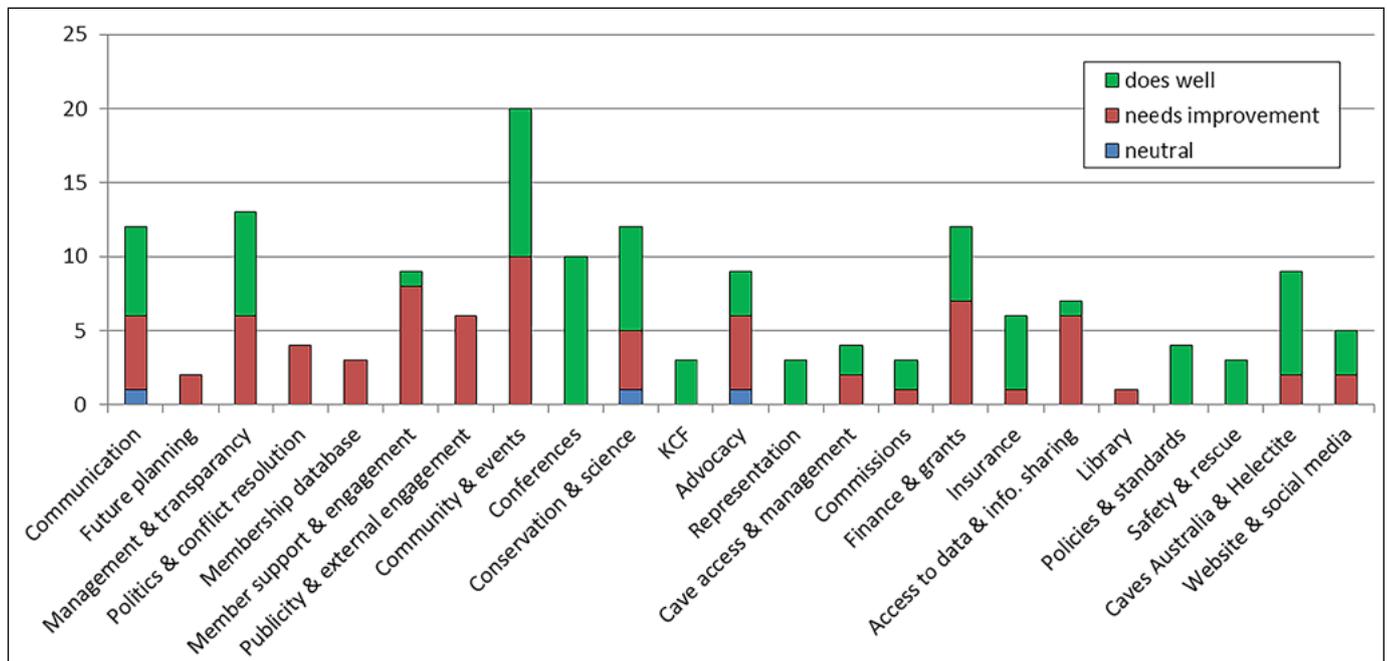
transparency needed for how membership fees are used to support cavers, clubs and karst areas. A third of responders said their satisfaction has changed in the past twelve months and, for all but one person who didn't leave a comment, the change has been in a positive direction.

The free-form questions gave the most feedback: 'What does the ASF do/not do well?' and 'What changes would most improve the ASF?' The broad categories of feedback are summarised in the plot below.

For another year *Caves Australia* is well regarded along with the ASF conferences and building community between caving clubs. The policies and guidelines the ASF provides and the cave rescue training opportunities organised through the ACRC are appreciated. Communications from the ASF is perceived to have improved, with

more positive comments than last year's survey. However, there is also much room to continue improving these aspects, especially with regard to stronger engagement with members and external organisations. Progress is well under way with cataloguing the library and making resources available to members, but additional information sharing relating to specific caving areas and access is needed.

We appreciate hearing your ideas and constructive suggestions on how we can continue to improve the ASF. These comments, along with those from last year's survey, will help to formulate the ASF Business Plan which is currently under development. A large portion of this plan will address improving publicity and future marketing of the ASF, as well as strengthening membership engagement.



Sophie's Sister

by Nina Paine

Pamela Hart

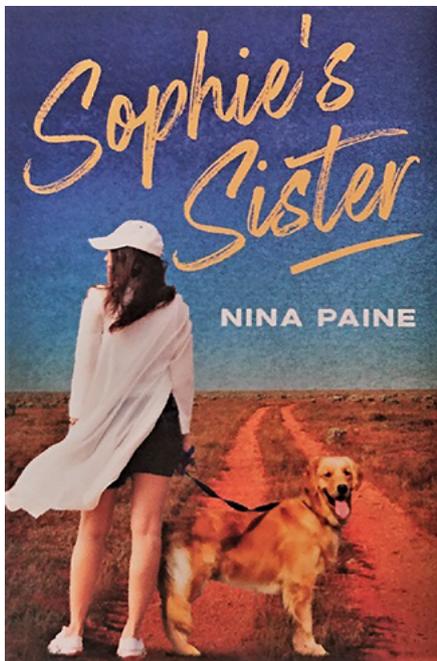
‘IF YOU’RE tired of predictable, stay-at-home novels, *Sophie’s Sister* is for you. Alternately dreamlike and shocking, Paine’s deeply felt depiction of the Australian landscape meshes seamlessly with her larger theme of what makes a satisfying life.’

SYNOPSIS

Sophie doesn’t know there’s a dead girl in her head.

Georgia and Sophie met before they were born. They would have been twins, but Georgia didn’t survive the pregnancy. No one ever knew there were two of them, but Georgia managed to stay with Sophie; she became a constant inner voice in Sophie’s life — an often conflicting one to Sophie’s own, as well as a largely annoying one; one who tried to push Sophie towards a more exciting life. Sophie, however, was content with her life and didn’t like being pushed.

Sophie is a graphic designer and illustrator; happily single, although curious about a man in a broad-brimmed hat whom she passes while out walking with her dog, Cujo. When work hands her the opportunity to join freelance photographer Clinton West as he drives from Perth to Sydney to cover a story for publishing company Gedup’n’go — a dive at Cocklebidy Cave, deep below the Nullarbor Plain — she turns it down. Georgia’s anger and frustration at Sophie’s boring life, however, reaches boil-



ing point. She decides to break free and go without her.

Sophie’s Sister allows us to see what happens when both sides of a ‘sliding doors’ moment unfold. As we follow their parallel lives over the following weeks, Georgia certainly finds the excitement she was craving. But at what cost?

Sophie stays in Sydney doing what she usually does — working, spending time with Cujo, her mum and her friends, preparing for and attending a school reunion

—while Georgia sets herself free and is living the adventure of her life. She’s interacting with wildlife and seeing so much of Australia, particularly its southwest corner, as she travels with Clinton. He is also a surfer with an enormous appreciation for the country’s beauty, but lives with the sadness of his wife’s death five years earlier. They encounter a number of interesting people who, along with Clinton, allow Georgia to question her beliefs about how a person should or shouldn’t live their life, and whether she has been unfair to Sophie all these years. In Georgia’s absence, Sophie learns that Jack, a love interest from her past, is diving out at Cocklebidy.

Travel across this incredible country with Georgia as she learns more about her sister, and life — about what makes a person content — than she anticipated. Through the extreme sport of cave diving, and the force of Mother Nature, *Sophie’s Sister* explores the fine line between life and death. It uses the extraordinarily beautiful, dramatic and dangerous landscape of coastal and inland Australia as its canvas. It also explores the expectations we place on ourselves and others when it comes to excitement and contentment. Dreams don’t have to be big. The small ones mean just as much.

ISBN 9781922368324

RRP \$24.95

Web: www.ninapaine.com

Club Promotion Grants

THE ASF has introduced a new grant for clubs to use to assist in promoting their club.

PURPOSE, SCOPE AND AMOUNT

To support ASF Corporate clubs to promote and market their club in their geographic area. Clubs in the same area may band together to market both clubs and spend the grant on more promotional activities.

One grant per club on a \$ for \$ basis of expenditure up to \$250 per club. So if two clubs band together and spend \$1000 on promotional activities then each club will receive \$250 after the receipts are sent to the

ASF Treasurer. If a single club spends \$500 then they are entitled to a \$250 grant.

ELIGIBILITY CRITERIA, APPLICATIONS AND APPROVAL

Each Corporate member is eligible and the grant may be used to promote their club by expending monies in promotional areas such as newspaper or web advertising and other items such as: brochures, banners and frames, flyers, promotional cards, magnetic signs.

Clubs use the applicant process as outlined in the how ‘do you apply’ section below. All material **MUST** include the words: (club name) is a member of the Australian

Speleological Federation Inc. and the ASF logo in the promotional product to the same size of the club logo. A draft design of the promotion should accompany the application.

EXPECTATIONS

A brief report for *Caves Australia* is expected with accompanying photos of the promotional material.

Contact Ric Tunney, the Grants Commissioner: asf.caves.grants@gmail.com for more information and download the application form from the ASF website at <https://www.caves.org.au/administration/commissions/grants>



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