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Lumen in Tenebris

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Cover Photo: **The New South Lander, Chillagoe**
Photo Alan Pryke

Battered Cave Doctor glad to be alive

Wednesday August 29, 2007

By Derek Cheng

For nearly 29 hours Motueka doctor Michael Brewer's broken body was hauled through tight squeezes, hoisted up pulley systems and pushed through small passages as he was inched to freedom.

As his stretcher banged against the cave's tight walls, he endured the pain of a broken pelvis and bruised ribs, which dug into him as the team took him out of the stretcher and pulled him on his side through anothertight gap.

"There were a couple of times I had to get out of the stretcher and get hauled through narrow bits.

"If a particularly bad section was coming up I could be filled up with more pain relief. There was a particularly bad section when they were trying to squeeze me through one bit and I wouldn't fit, and they pulled me out and turned me over and tried to squeeze me through another bit, and in between I had fallen asleep"

Dr Brewer said he had envisaged "every single damn squeeze and awkward bit that I had to get through to get out" before the mammoth effort, which cost $100,000.

The 47-year-old was yesterday recovering in Nelson Hospital after a more than 63-hour ordeal underground and a rescue that saw about 50 rescuers help move him through the intricate system to the surface.

He praised his rescuers for being "amazingly tolerant" as he issued directions and instructions from his stretcher along the way.

He was knocked out by a collapsing rock on Saturday evening, 3 km into the Green Link/Middle Earth caving system in Takaka Hill. He awoke in the lap of his caving companion, wrapped in an emergency blanket and unable to walk.

"My life was very enjoyable and the next thing I remember was trying to figure out where I was and what was happening and why I was lying in the lap of [my] caving companion and.... why my head hurt," he said.

"As soon as I tried to walk, it was too sore to walk, and if you can't walk, you can't get out. I know that system very well, and I could imagine most of the moves and a lot that weren't going to be easy, especially in a stretcher.

"When we first started there was a rock fall to get through which would take an able person five minutes, and it took us three hours. I just couldn't believe it had taken so long."

But his concerns diminished as the rescue teams arrived at the cave.

"When everyone started getting there.... and the fact they had come in the first place, their enthusiasm and positivism was magnificent."

It took nearly 29 hours for the team to move him from where the accident happened to the top of the cave; most of that distance took only eight hours to cover, while the winding passages were far more challenging.

He emerged from the cave entrance early yesterday morning to the sight of his wife, Sarah, and daughters Anna, 15, and Alex, 13.

"That was probably my most memorable memory.... having my two daughters there and Sarah at that time in the morning.... I don't think I'm a particularly emotional person, but as emotional moments go, it was pretty emotional."

With his injuries and having had only slept four hours in three days, Dr Brewer still had the enthusiasm to front a media scrum yesterday.

"I have an overwhelming feeling really of gratitude towards all these people, my life depended on it really. I wasn't going to get out unless 40 or 50 people were prepared to give up their time to come and rescue me."

Dr Brewer hopes to make a full recovery from his injuries in a few weeks, and remains open about caving again.

"It's too painful to walk at the moment, too painful to roll over. I'm working on rolling over."

NZ Herald, 29/8/2007

Pingers Ahoy

For the dive trip to Slug Lake in September, we were joined by Ken Smith and John Dalla Zuanna from South Australia. Ken brought with him his Pingers, which have been useful in the Nullarbor to locate caves through the rock from the surface. Pingers work by generating a pulsed magnetic field which can be detected up to 90 m away.

Ken has built three Pingers which are sealed inside PVC pipe and can be carried through a sump by divers. Each Pinger emits a different signal, which allows us to detect three different locations underground and/or underwater.

Michael Collins and John dived Slug Lake on the saturday. We placed the first Pinger standing upright in the mud at the shore of Slug. The divers placed the second Pinger on the eastern wall of the massive underwater chamber beyond the squeeze at -23 m. The third was placed floating on the surface of Gargle Chamber, at the southern end of the lake.

Ken meantime was on the surface near the gully between Mammoth Bluff and South Mammoth Bluff. He was able to hear all three Pingers, but the first one was too far under the hill to get an accurate fix. The other two were closer to the hillside, and despite the steep slope he was able to find an accurate point directly above the signal for each of them. That's the first surprise – Slug Lake is further into the hill than the underwater passages to the south east of it. That's because of the second surprise – Gargle Chamber is well south of the gully and the main valley is beginning to swing east to Playing Fields.

On sunday, we went back to the hillside first thing in the morning and Ken did some more detection work. By reading the signal off to the side of ground zero, he was able to estimate the depth to the two Pingers. Ken's estimate for the depth of the surface of Gargle chamber agrees closely with our survey to the surface of Slug Lake, and the difference in depth between the two Pingers was 24 m, which is very close to the divers' depth gauge measurements. More details and a map in the next Bull. *Phil Maynard*

Jenolan Caves: Guides, Guests and Grottoes

by John Dunkley

Released in July, this book takes a look at the historical development of Jenolan Caves, focusing on the 19th and early 20th Centuries. The heart of the book is a series of extended quotes from archival sources, and contemporary photos and engravings. There are some remarkable images reproduced in the book, such as the glass plate panorama on the front cover showing the western approach to the Grand Arch. The book's value comes from letting the original sources tell the story, without modern re-interpretation. It's available from the ASF, and highly recommended reading.

Tourists die in Thai cave floods

Eight tourists, including one Briton, have died after being swept away by flash floods in Thailand while exploring a cave. The tour group were trekking through the Khao Sok national park in Surat Thani province when the cave flooded.

Reports say the dead, who have not been officially identified, were two Thai guides, a British man, a 10-year-old German boy and four Swiss nationals.

One person, a 21-year-old British girl, survived on a ledge in the cave's roof.

The UK Foreign Office confirmed a 24-year-old British man had died. His next of kin have not yet been informed.

According to local reports, the woman survivor said: "One minute I was in what I thought was the most beautiful place in the world. The next thing there is death all around me."

Speaking on Thai TV station TITV, she said she was shouting: "'Help me! Help me' all night. Then I saw a light."

According to the Bangkok Post newspaper the seven western tourists and their guides had travelled by boat from Ratchapraphra dam to the cave on Saturday.

The area inside the cave was flooded following a heavy downpour, which began about an hour before the party began their journey, it said.

'Trapped'

The Khao Sok national park is in Ban Ta Khun district, which lies 650 km (400 miles) south of Bangkok.

According to police Lieutenant Colonel Pichan Kanayasiri the heavy rainfall caused flash floods, which sent water surging into the cave, which was near a waterfall.

"The tourists were inside the cave and didn't know what was happening outside. They were trapped inside the cave," Lt Col Pichan told news agency AFP.

District official Sitichai Thaicharoen said the English woman was rescued on Sunday after being found clinging to the cave's roof.

She is now being treated in hospital.

"The survivor is an Englishwoman. She is so far fine. She was able to climb up to the roof of the cave, that is why she survived," Mr Thaicharoen told AFP.

'Warning'

A senior Thai government official is due to travel to the Surat Thani province on Sunday to begin an investigation into the incident, the Bangkok Post reported.

Chalermsak Wanichsombat, director-general of National Park, Wildlife and Plant Conservation Department told the paper that officials at the park had warned tourists not to travel because of heavy downpours in the area.

A Belgian tourist was killed by a flash flood in the same cave several years ago.

The province's governor, Winai Phopradit, told the Associated Press news agency he had ordered the national park to close during the current rainy season.

"We have signs both in English and Thai warning tourists not to go into the cave during heavy rains," he said.

BBC, 14/10/2007

Jubilee Cave, Jenolan — photo Tina Willmore

CHILL-A-GO-GO!

A FEW CAVING DAYS IN FNQ

BY MEGAN PRYKE, PHOTOS ALAN PRYKE

The city of Cairns is known as the Gateway to the Great Barrier Reef – a reef that teems with colourful and diverse aquatic life. To the west of Cairns rising steeply is a wall of mountains, then the verdant Atherton tablelands and further out lies the gulf savannah country, where a different sort of reef lies. Rather than coral islands and atolls piercing the sea surface, grey limestone towers stand proud from a carpet of sandy rust coloured soils. In about the same time it takes to drive to Jenolan from Sydney, those living in vicinity of Cairns can drive to Chillagoe, a town established near an extensive area of limestone in the midst of outback Queensland.

Chillagoe is a town set in the heart of gulf savannah region. The Brahman cattle that graze savannah grasses of the expansive stations rarely encounter a fence. The main industry for Chillagoe is cattle, though in times past mining was the main game. Near the town are remnants of this history, such as the chimneys from smelters which were the latest in technological innovation when constructed around the turn of the twentieth century. By 1945 the smelters had closed. However, recent high metal commodity prices have stirred up mining activity in the region.

Alan and I visited Chillagoe in March, at the tail end of the wet season. We were lucky to have Winfried Weiss of Chillagoe Caving Club (CCC) pick us up and take us out to Chillagoe in his 4WD.

We shopped for supplies at Mareeba, a town that claims to be where the outback meets the rainforest. The Chillagoe area is part of the Mitchell River catchment whose drainage starts at the coastal mountains seen from Cairns flowing westerly across the triangular North East tip of Australia. A combination of tropical deluges and large catchments mean that when it is wet, it is really wet. Rivers seasonally swell to immense size compared to the dry season. Road access to and from Chillagoe can be periodically cut by flooding waters in the wet by a seemingly minor stream in the dry. Gradually the highway that passes through Chillagoe is being tar sealed on a nastier-parts-first basis.

Tower Karst, Chillagoe

The New South Lander

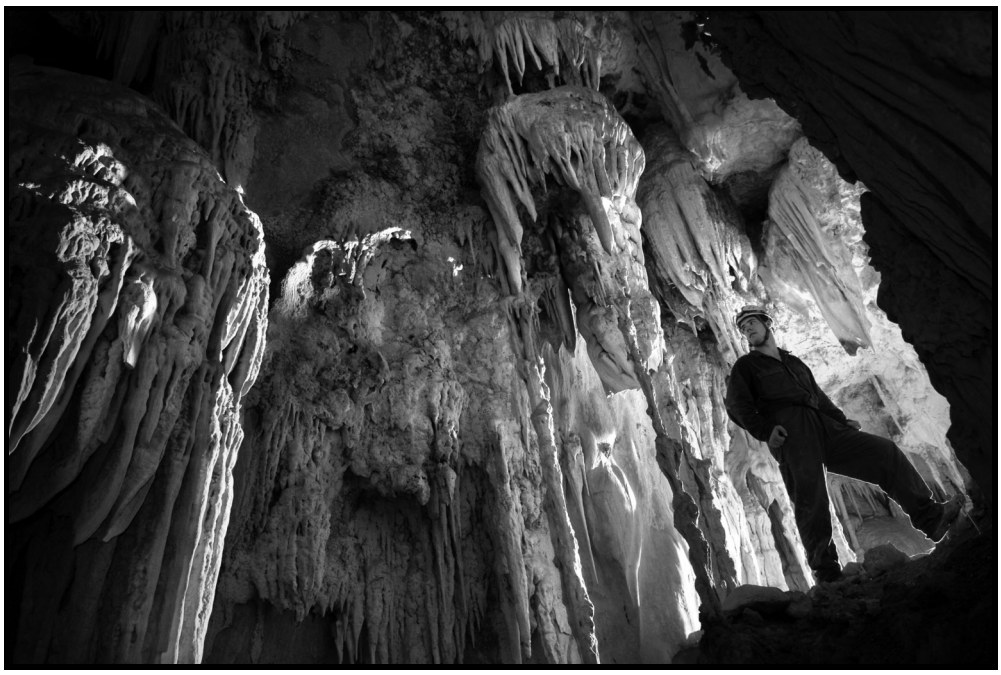
While the town of Chillagoe is close to limestone, in the 1800s the town of Mungana was set right amongst large limestone towers. Today Mungana only exists as a district and historic grave site. Chillagoe-Mungana Caves National Park has been set aside for conservation. Outside of the reserve land there are extensive areas of karst.

Tower karst is a feature of tropical areas. Warm and consistent tropical rains accelerate the slow dissolution process of karst rock leaving islands of limestone. The towers are large, rising sharply up to forty, maybe fifty metres high from the surface level with more limestone below. In area, a tower can be up to one kilometre long by at least a few hundreds metres wide. Within each limestone tower, underground mazes can be found formed along joints and stream courses. Although cave systems seem to be confined to a single tower, passages can be very extensive with varied, from large chambers to crawl height only, multiple levels, phreatic, vadose et cetera.

The first cave we set off to was New South Lander. As one may expect this cave was south of the Queenslander cave system.... and smaller. However, the cave is not at all small. Winfried organised to take us on a round route, in and out two nearby entrances. In fact, we were to semi-exit the cave a couple of times along the route due to large daylight holes which were typically found in spacious chambers. At the apogee of our orbital route we came to the central collapse. From here we beheld an open arena of grey limestone boulders, streaked with rillenkarren and the larger rinnerkarren karst features.

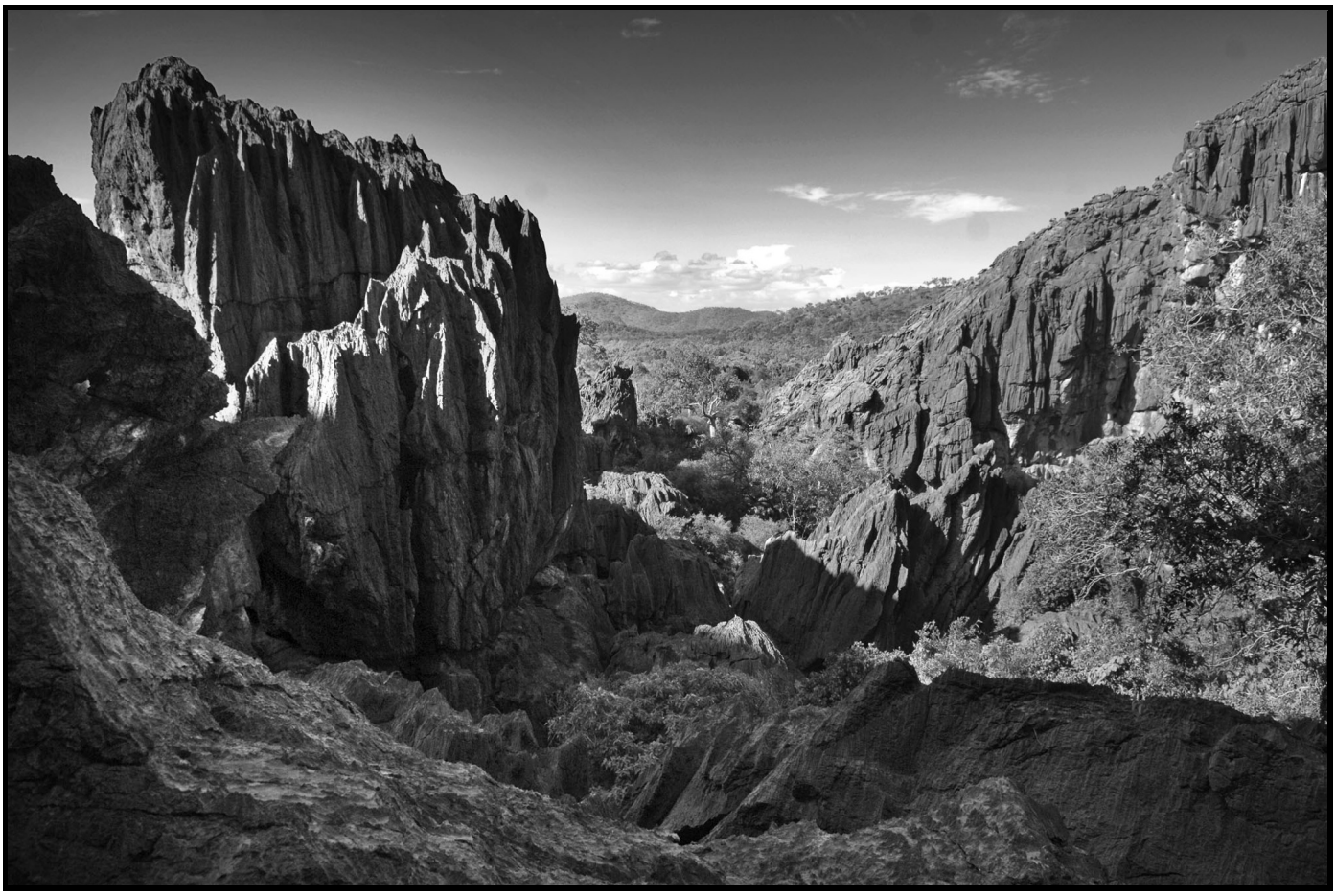
Within the cave twilight zones vegetation abounds, nourished by the tropical climate. Quite often whole trees could be bumped into while caving, such as a local fig tree that fruits along the trunk, similar to a sandpaper fig tree, but as my research indicates that the sandpaper fig tree should not be this far north I will keep to fig tree.

The warm and humid conditions bring with it a high volume of phototrophic bacteria, which clings to the damp karst surface around entrances and daylight holes creating a karst formation known as “phyto karst”. Phyto karst is not created by calcite deposition. It is actually small left over rock spikes as acidic phototropic bacteria are nurtured by tropical moisture and sunlight, causing the alkaline rock to recede around a small point of harder rock leaving leftover spikes that seemingly aim towards the light.



Winfried in the New South Lander

New South Lander is actually connected to the Queenslander by a route requiring some rigging, however it is of sufficient size to explore on its own. On the return route, we came to a



Central collapse of the New South Lander tower

section with a large daylight hole and flat floor. The ground was covered in bright green moss, Winfried had not seen this looking so verdant before.

The next day we returned to the Queenslander cave system. Although connected, Queenslander was different in character to New South lander. The entrance we were to enter was a bit trickier to find for it was part way up a tower and there were stinging trees. As well are being careful to avoid contact with stinging trees another hazard was green ants. Their nests are usually a small clump of drier green leaves along branches. Bites are a more obvious sign of their presence.

The Queenslander took us all day, especially with camera gear plus Alan!!! Winfried kindly whipped out to collect something Alan had forgotten, leaving Alan and I to figure out the key to successfully negotiate the "Queens Bum". The Queens Bum was a small tube passage with edges that are a bit brown from dirt. The hole is over a metre off the ground. After a few attempts at negotiating this obstacle I worked out a way, only to told by Winfried that it was considered cheating to use a tape for a foot hold. Oh well, no one told me that there were rules! Winfried demonstrated how easy it was to negotiate by heading up feet first (that is, if you can head up feet first by the head going through almost last....).

The Queenslander is a sprawling cave and Winfried knew all the tricks to navigating it well, taking us along an anti-clockwise route. The columns at "The Sisters" provided a stage for photos. The dig provided an opportunity to grovel as well as being a route into an old tourist cave – Cathedral Cave. Some tricky climbs were encountered. Near Confusion Corner a brief waterfall display was a reminder that it was the tail end of the wet season. Triple Climb was just one of the tricky parts of Queenslander, Winfried ascended first setting up tape. After several hours in the cave we exited the cave via the Roman Arena and exit CH55.

Before heading back to Chillagoe we drove west to the Walsh River to see what the water levels were like. The water was flowing strongly, but still below the level of the concrete ford. Debris high in shrubs and the broad sandy river bed indicated how large this river could be.

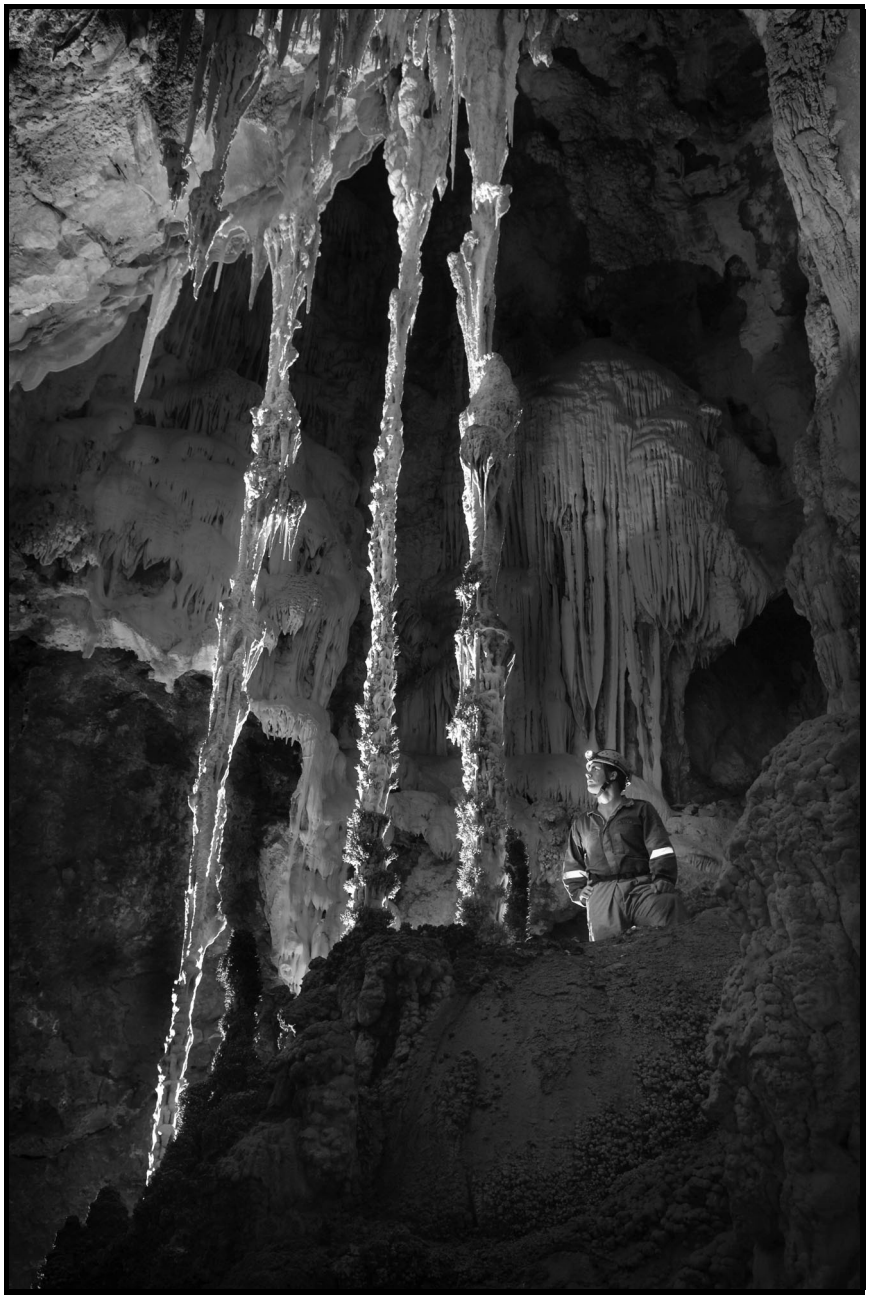
The next day we decided to do something a little more exploratory. So we headed out to Wallaroo Tower. Soon after we started to circumnavigate the tower we found a vertical entrance. I descended a ladder – being the smallest my overalls were more likely to survive the little-too-friendly sharp coral. It did not go far. Soon after we found Giant Causeway. Although not a large cave it is of interest. It has an oolitic floor, whereby large oolites have over time calcited together to create a lumpy calcited surface. In the midst of the oolites is a calcited drainage hole, creating

the appearance of being brain-textured. In another section of the cave we found a small chamber of "mammary" formation which would have formed underwater.

Upon further exploration of Wallaroo Tower it seemed that there was a lot of potential vertical development. Alan reported a large deep hole 15 metres across. Later research showed that this was called The Cauldron. Before heading back to Chillagoe we stopped to check the water levels in Marachoo Cave.

There are some tourist caves managed by Queensland Parks and Wildlife. We had an evening trip to Grand Arch cave. The length of tourist path was beyond my expectations, weaving throughout the cave, connecting daylight holes. It is a first for me to encounter a fig tree in a tourist cave, but thats Chillagoe for you! Alan trialled taking a picture of the Grand Arch Tower at night, using the Metz flash. It worked despite not having a clear view of the towering karst without foreground shrubs. So we decided to visit Balancing Rock a second time, having been there at the recommended sunset time then at night with flash guns.

Many thanks to Winfried for just about everything, we pretty much just arrived near Cairns to be dropped off near Cairns with Winfried helping out with everything in between.



Winfried in the Queenslander

Notes

Vegetation: The limestone outcrops near Chillagoe are dominated by a scrubby type of vegetation containing many deciduous trees. The trees in these vine thickets lose their leaves to reduce water loss during the dry season. Sheltering in the crevices stinging trees and ferns can be found.

Heat: Even at the tail end of the wet season a good supply of water is appreciated even if only inside the caves.

Clothing: Long sleeved cotton overalls are ideal. In some parts of the caves, particularly the obligatory entrances and exits, wear and tear on cotton overalls can be terminal, for the overalls that is, therefore a spare pair is a good idea for an extended trip. I wore thick rubber work gloves and personally recommend this, though some people do have tougher hands than me.

Shoes: Rubber boots may be overkill. Volleys could be a little thin for the sharp karst edges.

Green Ants: Green ant nests are found in vegetation surrounding the towers and are best left undisturbed. [*An understatement. ed.*] The nests are a small collection of leaves around a branch.

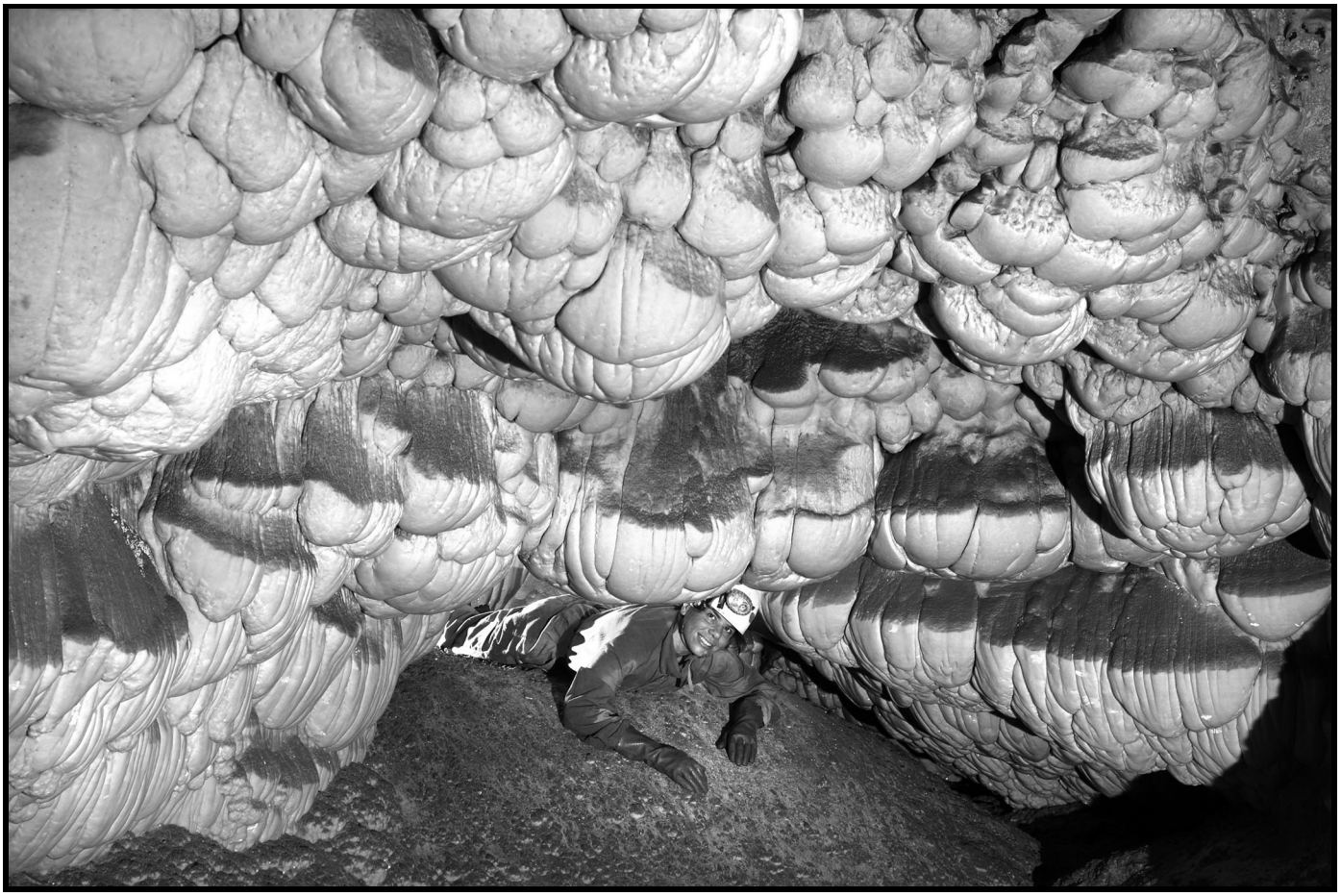
Accommodation: Chillagoe Caving Club hut has all the facilities a caver would want. There is a caretaker who lives in adjacent quarters.

Grocery shopping is best done in Mareeba; Chillagoe has a general store with basic supplies. A small hardware has opened, possibly due to the minerals boom.

For more information – Chillagoe Caving Club

http://www.chillagoecavingclub.org.au

Megan at Balancing Rock



Megan in the Giant Causeway

FIGGING COLD

WOMBEYAN, 4 – 5 AUGUST 2007

BY JILL ROWLING

Participants: Phil Maynard, Jill Rowling, Brett Davis, Tina Willmore, Deborah Johnston, Alan Pryke, Megan Pryke.

Friday night was cold and windy, with a "sheep grazier's alert" according to the Bureau of Meterology website. Fortunately, our camping spot was a lot more sheltered than the rest of the camping ground. Some brave souls tried to erect an awning on their caravan.

Saturday: The sun kept hiding behind thin clouds and the low winter angle meant that breakfast was a bit cold. We eventually got underground by about 10:30 am. Jill and Phil set up the forestry compass in the marble streamway and surveyed the southern side passages which lie under the tourist path, then exited for lunch. We went back to camp for some important things like Jill's glasses and a handline for the Belfry area, as well as warming up as it was very cold and windy in the streamway. Jill drew up the survey legs then returned to the same area for sketching while Brett and Phil surveyed "The Belfry". This is an upper level, north of the streamway and trending northwards following a ceiling channel. It ends in a speleothem choke. Brett demonstrated his talkative "cave duck" in the entrance of Victoria Arch.

We finished at about 3:30 and headed back to camp to try and warm up. It was about 6 °C and very windy, so we decided to light a fire in the Barmah fireplace. Phil carried over some gigantic deciduous logs and Jill found some dry eucalyptus leaves and timber. Eventually we coaxed the fire into life. While we enjoyed some snacks and warmth, a group from the Goulburn Bushwalkers joined us with more wood. That evening, half the SUSS contingent had dinner in the Barmah and the other hardy half stayed at the campsite with their own fire. The main put-off outside was the occasional wind gust, and Jill's excuse was she had left her fibre-pile jacket at home. Double jumpers did the trick for the cold but not the wind. The wind roared through the night. It sprinkled a little, but as the sky was clear we guessed this was just melted snow.

Sunday: The next morning the low sun was again in and out of light clouds: another cold breakfast. Brett opted to not go caving and declared afterwards that last night's logs in the Barmah had supplied him with plenty of warmth and hot ashes for toasting all day. Dried poplar logs make good firewood.

Alan's group corrected a major error in the Lots O' Numbers Cave survey. How a "71" became a "17" is anyone's guess however Chinese Whispers are a good suggestion.

Phil, Jill, Tina and Megan began the forestry compass survey of Chalkers Retreat, an old show cave area which is not part of the normal tour. This was connected in to the Lots O' Numbers cave survey, and some additional points were left for a Suuntos team to add in their extensions. Alan, Megan and Deborah climbed one of these extensions and linked it to the Chalkers Retreat survey. The last shot of the Chalkers Retreat survey made a loop back to Bush Rangers Hall, an impossible shot without the Disto. Flagging tape has been left on the stations to assist with the sketch for next trip.

We came across a "bat ball" or cluster of bats, which giggled and squarked as we passed. From their antics we assumed they were bent wing bats. They'd chosen a spot somewhat out of the wind and occasionally flew around. Another single bat (I assume it was a horseshoe bat) had wedged itself way up into the furl of a calcite drapery to escape the cold wind.

Back down in Bush Rangers Hall, Tina investigated one of the northern loops. As this was in the "to do" list, Phil climbed up and surveyed it, finishing at 3:30. As there was no point starting anything new, we headed out. Tina tried out her wellies in the Bath Room, which was rather full of water. Jill and Phil took the quicker dry route out along the show cave track.

There were few tourists left, and by 4:30 when we went to hand in the forms, everything was locked up, so we put them under the office door. Mind you, at 6 °C with gusting wind I don't blame them.

For a change of dinner venue we tried the pub (the hamburger shop was closed). It wasn't bad, at least it was warm. The pistachio ice cream was a treat.

AMAZED BY HORNY TOADS

CLIEFDEN JUNE 2007 LONG WEEKEND

BY MEGAN PRYKE, PHOTOS TINA WILLMORE

Participants: Stephanie Muller, Alan Pryke, Megan Pryke, Martin Pfeil, Tina Willmore

On Friday evening a Government warning was issued – stay off the roads. So it was a bleary eyed Saturday morning departure a after a night of wind battering.

Mother Nature tried to make it difficult for us to reach Cliefden. Typhoon conditions ravaged the Central Coast and Sydney regions dumping over a foot of rain with squally, tree felling winds. A marooned tanker off the Newcastle coast and survival stories kept in the news for weeks. Chinks in mother natures steely armour started to appear soon after Bathurst. Salvation from the coastal onslaught was reachable! We arrived at the Cliefden hut in a slightly dazed state, then slowly somehow got ourselves prepared for caving. Luckily we found the Dunhills home.

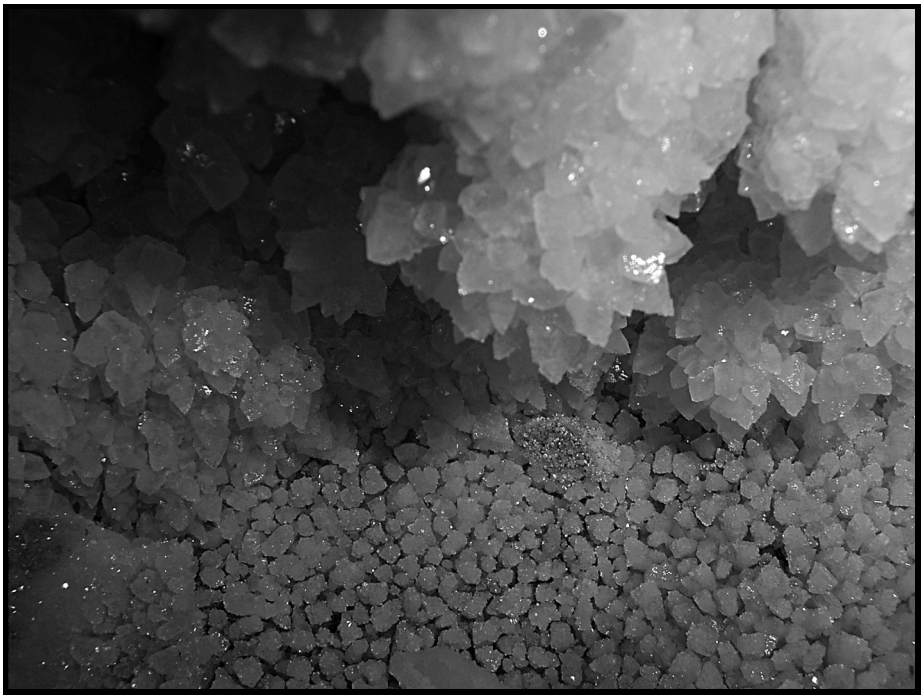
Stephanie in Murder

Helictites in Murder

Following extraction of ourselves and gear from the car, we set across the fields for 'Murder', a brisk breeze quickening our progress.

It was as though we stepped back in geological time – for nothing much had changed inside Murder Caves warm, earthy interior. All was still, the cave draft imperceptible compared to the gale force winds still lashing Sydney and the central coast.

It was a typical Murder trip, Megan vaguely recalling the way to the bedding plane passage and somehow around the loop, via the Pineapple room and back out via the Dragon chamber. Tina and Martin were the photographers this trip, finding just too many things to capture all on one trip, including some blue stal pictures whereby the blue stal is indeed, blue. Pity only the colour online Bull could demonstrate this!



Crystal Pool, Murder

The next day it was off to be amazed – Taplow Maze. We had put a little planning into this trip for we had a BMSC survey to work from. Our objective was "Grey Beard's End" in the far northern unexplored (by us, that is) realms, armed with the BMSC survey.

The survey proved to be an aid, and may have also been a source of confusion. Perhaps we were accustomed to noting secondary features on surveys such as rock falls, and up and down slopes, that seemed to be missing from the survey we had. It all eventually made sense, though more often in retrospect, i.e. experiencing cave passage then understanding survey rather than the other way around. However, Grey Beards End still remains aloof, though we did get to most of the other named northern parts (except Oliphant chamber.... and maybe a few others.... oh well, more to see next time!).

There are several named features on the survey which brings with it an exploration objective, although upon arrival one may wonder at why particular names were bestowed. Nonetheless, such naming at least abbreviates describing where you are in the cave, such as the "that chamber you reach by taking the third right turn, then climb up to over a boulder then go left, drop down, et cetera et cetera."

In Taplow Maze, there is a "Lord of the Rings" theme for Taplow Maze's named features. However, there is at least one curiously named feature that goes against this theme. Those that experienced this part of the cave all agreed that the "Horny Toad Roundabout" was ever so aptly named. Back at the hut were several puzzles made from steel, wood and string that Martin had brought along to keep us entertained. Upon hearing those ahead grunting, groaning and giving explanations on how to tackle the Horny Toad Roundabout I ascertained this may be like one of those puzzles, needing to be tackled at a particular angle and sequence. Well, having done it perhaps there are be few alternate ways if you are smaller in stature. The Horny Toad Roundabout is definitely sporty, and as for the reference to horns and toads, Ill leave it to the readers imagination, though it would make a great subject for a Kevin Moore cartoon drawing, unfortunately Kevins chest size may prevent him getting close enough to see it!

We enjoyed a late lunch outside, basking in the warm winter sunshine. Having budgeted for one more hour of caving we headed back in for a whirlwind, truncated Southern section tour. This tour took in the "Argonite" marked section, the Ticket office, Kevins hideway, Taplow Station and somehow unintentionally on the way out arriving off route at Central Station. At this point Megan had a déjà vu experience, having been with another group of SUSSlings years ago who made the same mistake. No further wrong turns were taken and the one hour deadline was met!

The Blue Stalictite

For our last day we set off for Mallonguli Cave. Weaving up, down, across, traversing corkscrew crazy routes we all had a good time finding our way about. It was a lot less dusty than Taplow! The Silly sump was as expected – low. We spotted a few Horseshoe bats in flight, we stopped to gaze at the pretties, Tinas bright light reaching into corners not usually looked at.

After this short caving trip, we decided to be surface dwellers for the rest of the day. We consumed a hearty cooked lunch at the hut, cleaned up and then headed to what seemed to be the highest hill on the Boonderoo Property. Our route to the summit zigzagged to maximise karst coverage. From the top, Mount Canoblas loomed, mysteriously shrouded in cloud, hilly green farmland and forested hills could be seen in all directions. The surrounding farmland was green, but only from recent rain. Only six weeks before the Belubula River had stopped flowing for the first time in 75 or so years. Feed was coming back. Due to the prolonged drought conditions, the Boonderoo property had no cattle and half the normal sheep stock, but with the recent rains it could be looking up, for a while at least.

A great trip was had by all. Thanks to the Dunhills and Orange Speleological Society. Also to the SUSS committee for helping organise this trip.

Megan, Alan and an approaching storm above the Cliefden karst

BULLIO CAVE, WOMBEYAN

BY PHIL MAYNARD

Resurvey of Bullio Cave

Bullio cave was one of the first caves at Wombeyan to be discovered and explored by Europeans. It's also one of the best caves at Wombeyan, containing a wet and well-decorated streamway. The system catches water from the hillside to the northwest of the Wombeyan creek gorge, down through Bouverie cave and drains from Bullio into Mare's Forest Creek cave and finally to a resurgence in the gorge at Mare's Forest Creek. The streamway in Bullio is virtually perennial, with the cave only ceasing to flow during extreme drought conditions (2002 – 2003 was the most recent drought with conditions dry enough to cause the stream to dry up in the downstream area).

When SUSS began to resurvey the cave in 2001, we weren't expecting to be able to survey the whole stream because of the underwater section near the downstream rimstone dam. However, by the time we'd finished most of the cave, the sumped section was bone dry, not even muddy, so we've surveyed the entire extent of the streamway.

We also found a side passage off the streamway which was unknown to SUSS. Departing the stream on the southern side of the upstream passage, this route rises steeply to an extensive rockpile chamber with formation and calcified tree roots. The rockpile chamber turned out to be directly over the main stream canyon. When SUSS revisited the cave in 2007, there were many more tree roots in the chamber than in 2003.

During 2002, the intermediate levels of the cave including the Finger of Judgement were surveyed by SUSS, while the upper levels of the cave including both entrances and the pitch down from the upper entrance were surveyed in 2003. We also surveyed Mare's Forest Creek cave during 2002 – 2003 while the normal water was missing during the drought. A surface survey allowed us to position MFC cave relative to Bullio.

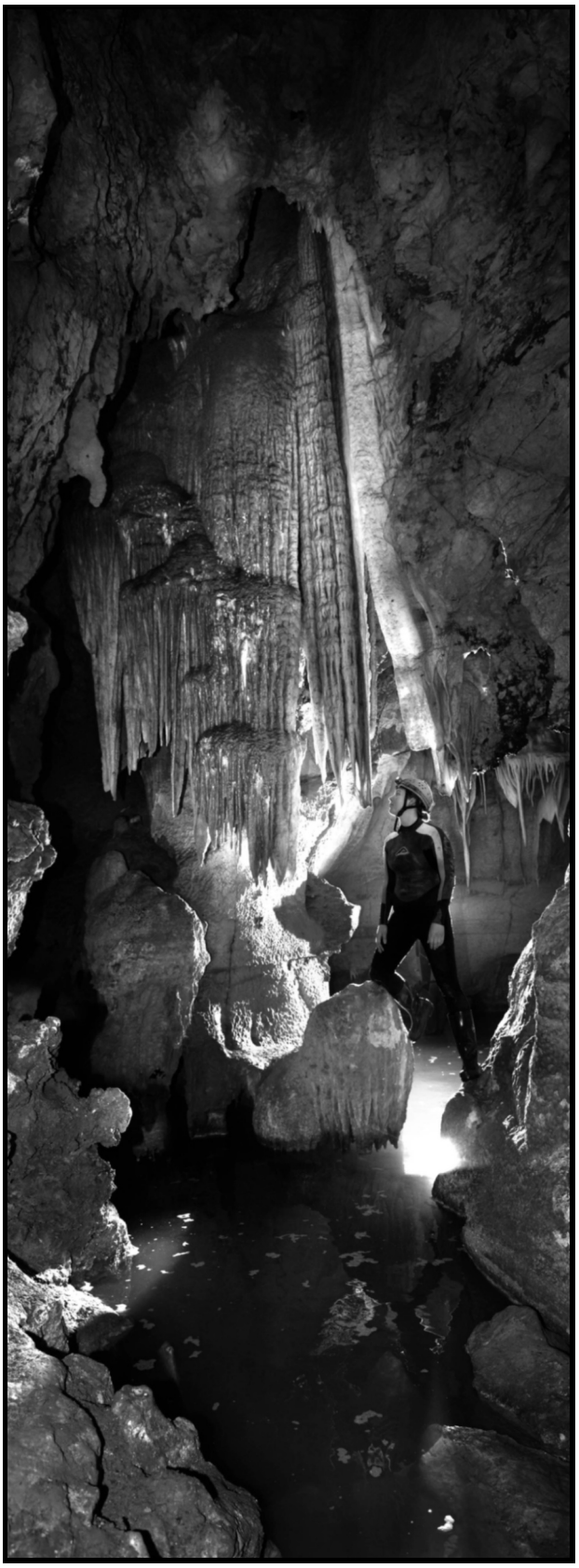
The final surveyed dimensions for W2/W65 Bullio cave were:

Survey length:	962 m
Survey depth:	58 m
East-west extent:	160 m
North-south extent:	119 m

The surveyed dimensions for W87 Mare's Forest Creek cave were:

Survey length:	216 m
Survey depth:	19 m
East-west extent:	64 m
North-south extent:	59 m

The gap between the downstream end of Bullio (at the lake, which may or may not be part of the active stream) and the upstream end of Mare's Forest Creek caves was measured as 30 m. The gap between the downstream end of Bouverie and the upstream end of Bullio is estimated at 90 m.



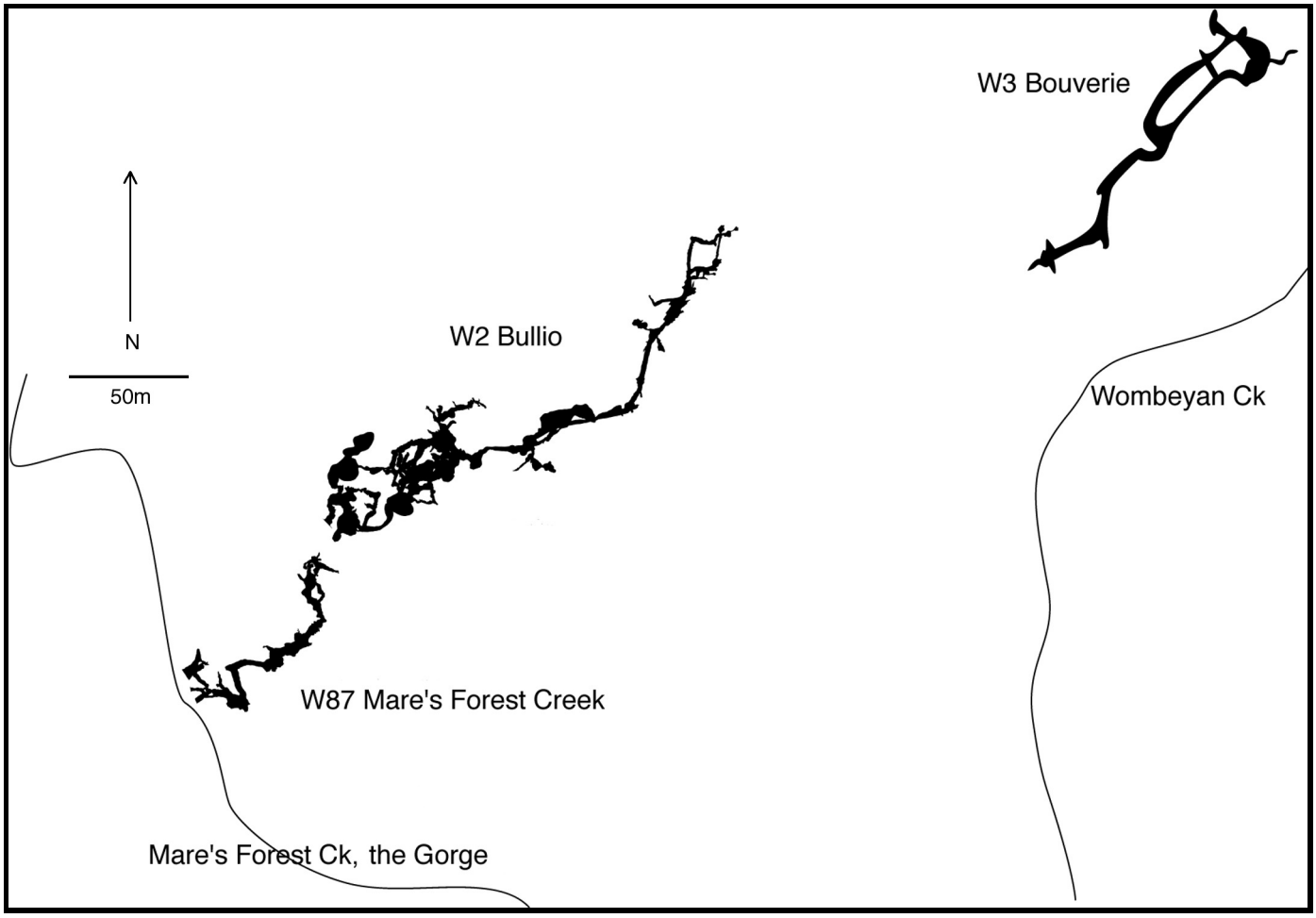
Deborah Johnston in upstream Bullio
photo Alan Pryke

The stream in Bullio cave is 220 m long, with another 100 m of stream in Mare's Forest Creek Cave. It's the largest stream at Wombeyan outside the Figtree complex, and from the passage development it's been there for a long time. Dennis [in *Caves and Karst of Wombeyan*, 2004] considers the main stream passage to be an ancient course of Wombeyan Creek. The upper levels are parallel to the stream passage (see the silhouette) and presumably are a fossil level of the stream. The stream level is 40 m below the upper level.

The Bouverie stream was dye traced to connect with Bullio cave by Julia James. Flow rate measurements also showed that Wombeyan Creek does not connect to the Bullio stream during flood. From the silhouette map, these results are surprising, given how close Bouverie cave is to Wombeyan Creek. There's also a surface gully which cuts across the gap between Bouverie and Bullio, joining with Wombeyan Creek downstream of Bouverie. The Bullio stream may not receive all of its flow from Bouverie. There is a substantial area of karst to the north west of Bouverie with no known stream cave, so there may be a separate system feeding into Bullio upstream of the known cave.

There is little prospect of discoveries in either Bullio or Mare's Forest Creek caves by dry cavers, but there is still a chance for the divers to extend the known cave at stream level. The downstream lake has been dived without a conclusive result. There hasn't been any attempt so far to dive upstream from Mare's Forest Creek cave. The upstream sump in Bullio was found to be tight and muddy. In drought conditions there may be more chance of diving upstream, and it's upstream where the prospects for extensions are best. The divers probably can't get to the end of Bouverie cave to dive downstream.

There were a total of 19 survey trips over three years to survey the two caves and the surface in between. We had a total of 13 surveyors contributing to the project; thanks! The surveyors were: Matt Fischer, Sean Hill, Geoff McDonnell, Phil Maynard, Kevin Moore, Verity Morris, Rod O'Brien, Martin Pfeil, Richard Pfeil, Alan Pryke, Megan Pryke, Jodie Rutledge and Mark Staraj. Additionally, Alan Pryke led a photography trip to document the main stream in Bullio and the ladder pitch. We can't do these projects without people volunteering massive amounts of time and energy; just as well it's good fun.



Bullio and related caves

Map compiled by Phil Maynard

Cave description

The upstream sump of the Bullio stream receives water from Bouverie cave, W3 (see the silhouette map). Following downstream from there, the stream passes through breakdown and joins a fossil side branch which contains gours. Leaving the breakdown area, the stream becomes a high canyon with extensive decorations in the roof. There is a side passage which leads to a collapse chamber lying above the stream passage. This contains formation and tree roots. The stream passes under a major flowstone blockage and then meets the passages down from the upper level of the cave. Just near the junction, the stream diverts through a passage which is normally sumped and reappears as a lake downstream from the junction. This is held behind an impressive rimstone dam. Immediately downstream of the dam, the stream disappears into an impenetrable sump. The main passage continues another 30 m to a lake which presumably receives water from the stream. This is the end of the known streamway.

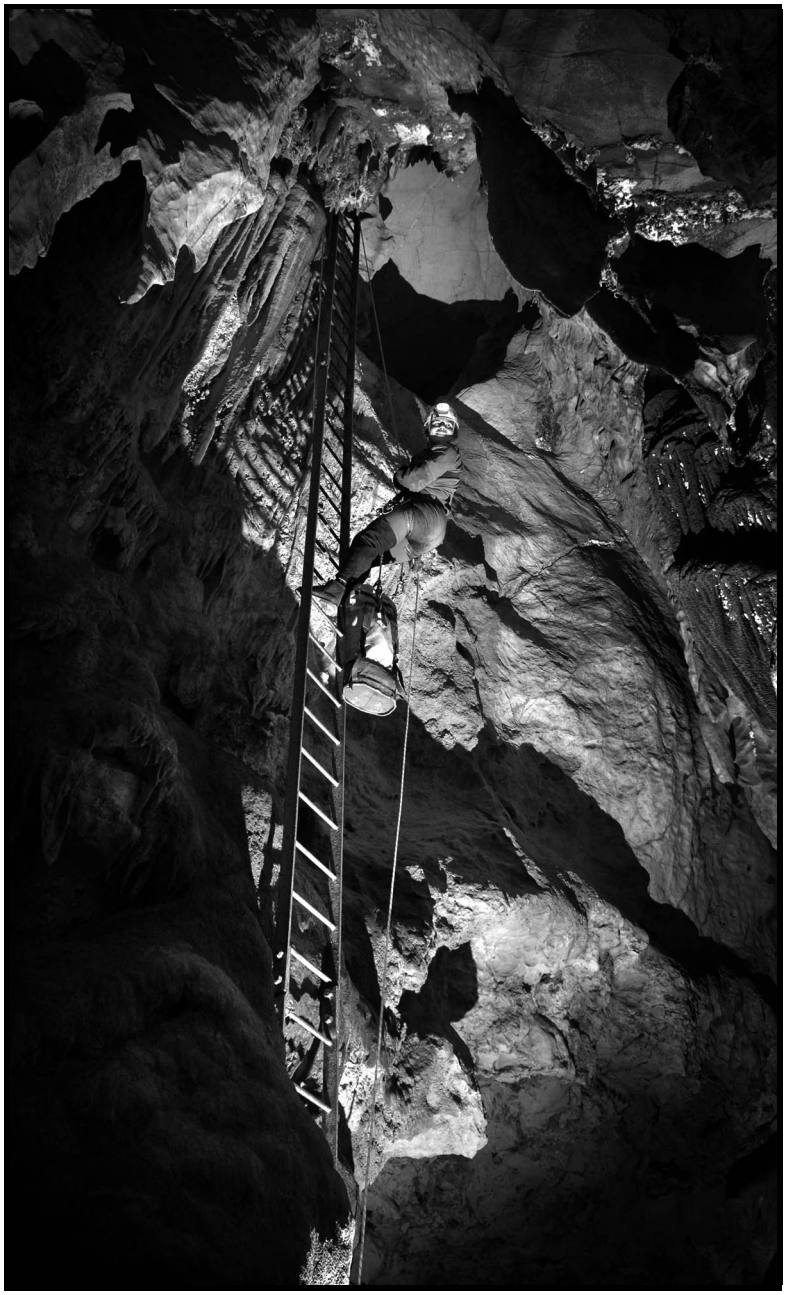
From the lake, there is a gap of 30 m to the upstream sump of Mare's Forest Creek cave, W87. The passage in W87 is more phreatic and less canyon-like than Bullio, with occasional formation above the waterline. This cave normally contains an extensive lake, but was dry with a muddy floor when SUSS surveyed it. There are several entrances out to the gorge, and the lowest of these is a resurgence when there is water in the cave.

Ascending from the junction with the Bullio stream, the normal way up to the entrance is a flowstone slope which leads to a short ladder in a vertical squeeze. This climbs to the intermediate level of the cave, which is a fossil level of the stream and contains extensive decoration. The alternative way up from the stream climbs out of a canyon into a room with a very impressive stalagmite named the Finger of Judgement. From there, a series of flowstone climbs leads to the intermediate level. From the intermediate level, a 12 m near-vertical ladder leads to the upper level of the cave.

At the top of the ladder, a slope leads up to the well-decorated route out of the cave. This is a series of chambers, connected by tight passage. The upper entrance is a side-route leading up to an 8 m pitch. The entrance is a 1 m diameter hole in a horizontal stretch of bare rock on the hillside. On the main route out, there is a 4 m climb down a soil bank in the largest chamber, followed by a series of climbs up to the main entrance. The entrance is 5 m high by 3 m wide, in a doline above the gorge.

The best way to do the cave is to abseil the upper entrance (8 m pitch), then pull down the rope and use it to rig the main ladder. Abseil the ladder with a rebelay off the top rung. To ascend the ladder, self-belay up the rope and climb the rungs rather than trying to SRT up the rope. Use a tape or the rope as a hand line down the soil bank and exit out the W2 entrance.

The gear required to rig the cave this way is a 30 m rope, a long tape for the upper entrance (rig off a tree), three rigging tapes and karabiners for the ladder pitch and possibly another tape for the soil bank. The stream is cold; consider bringing a wetsuit for the upstream passage. The stream is mostly waist-deep or less, but there is a swimming section upstream of the side passage. Downstream, it's possible to bridge over the pool to the rimstone dam (maybe not possible for short people).



Megan Pryke on the ladder
photo Alan Pryke

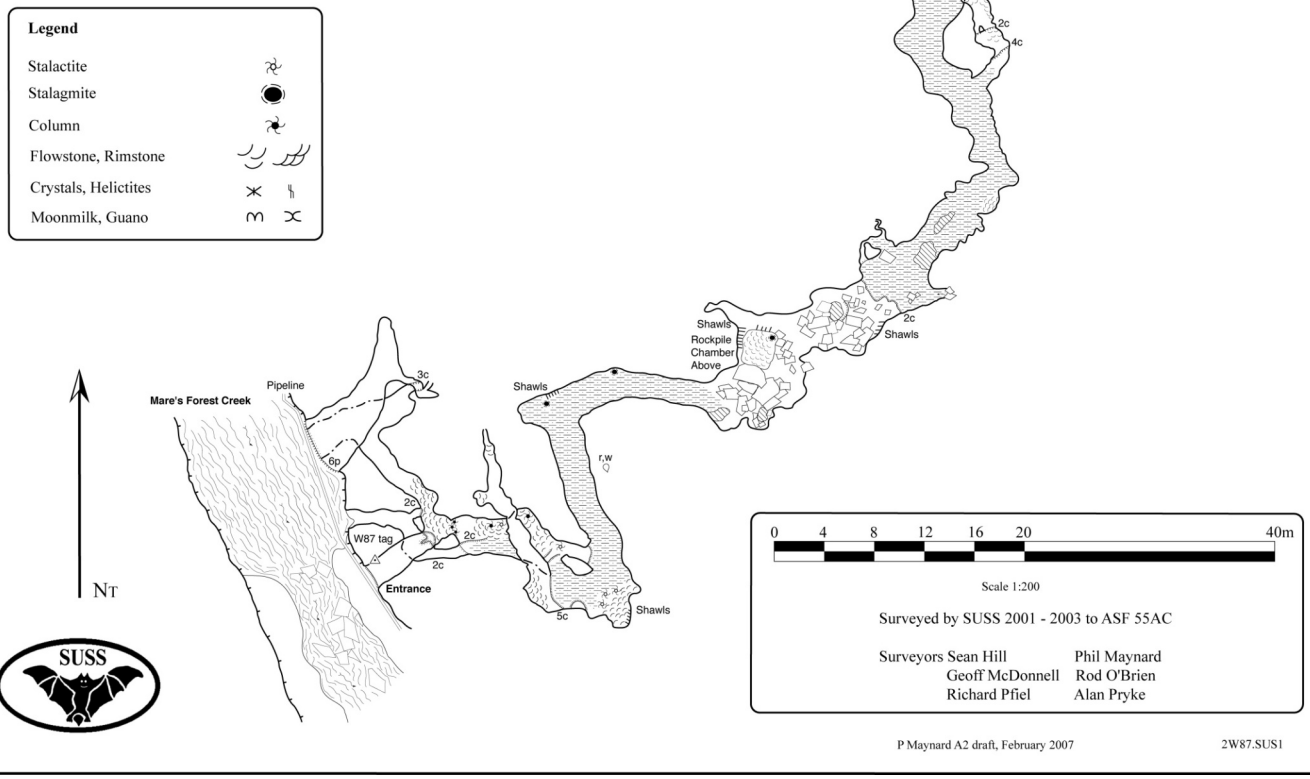
Deborah Johnston in the Bullio stream

photo Alan Pryke

W87 Mares Forest Creek Cave

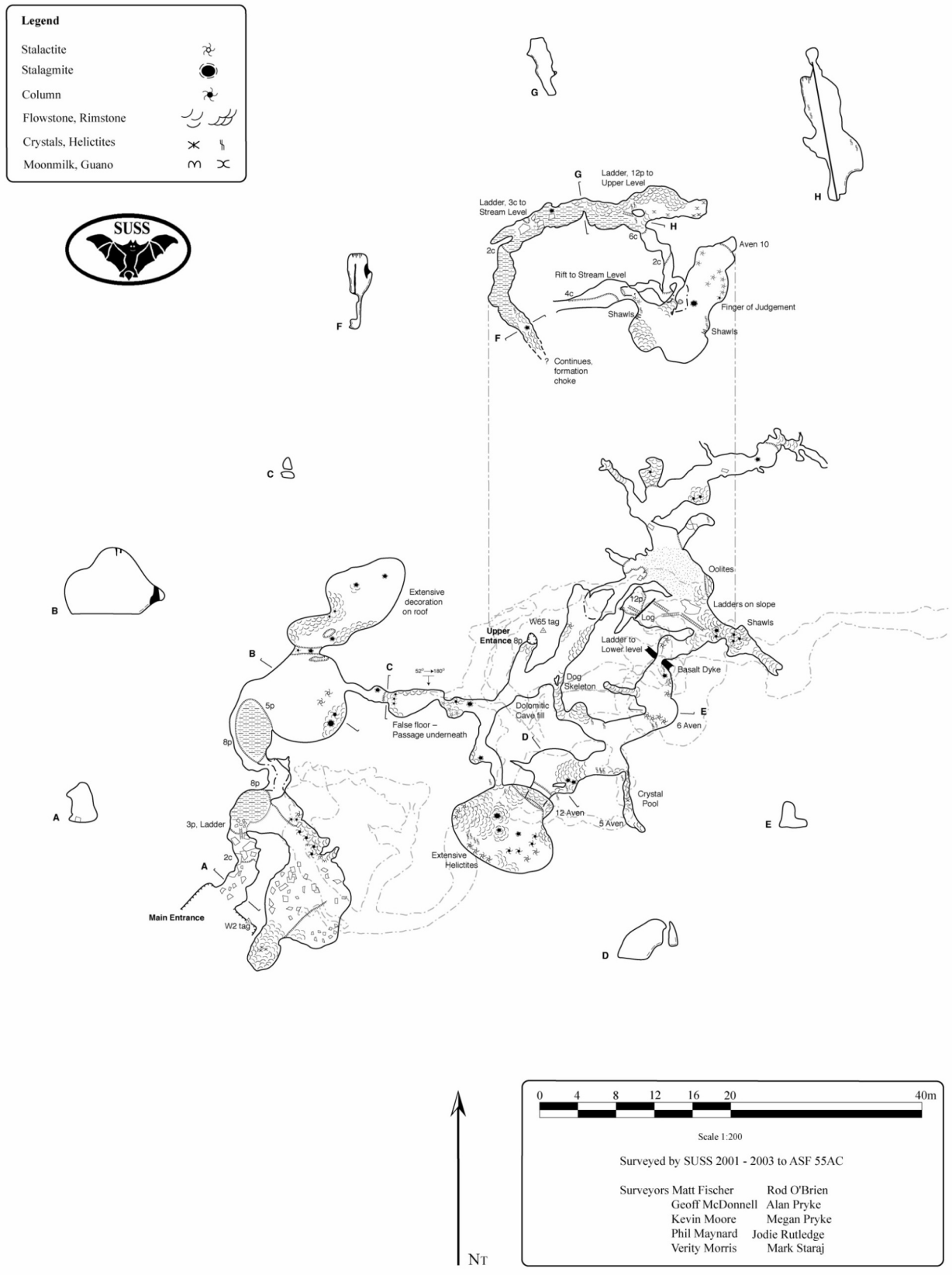
Wombeyan, NSW

Plan View



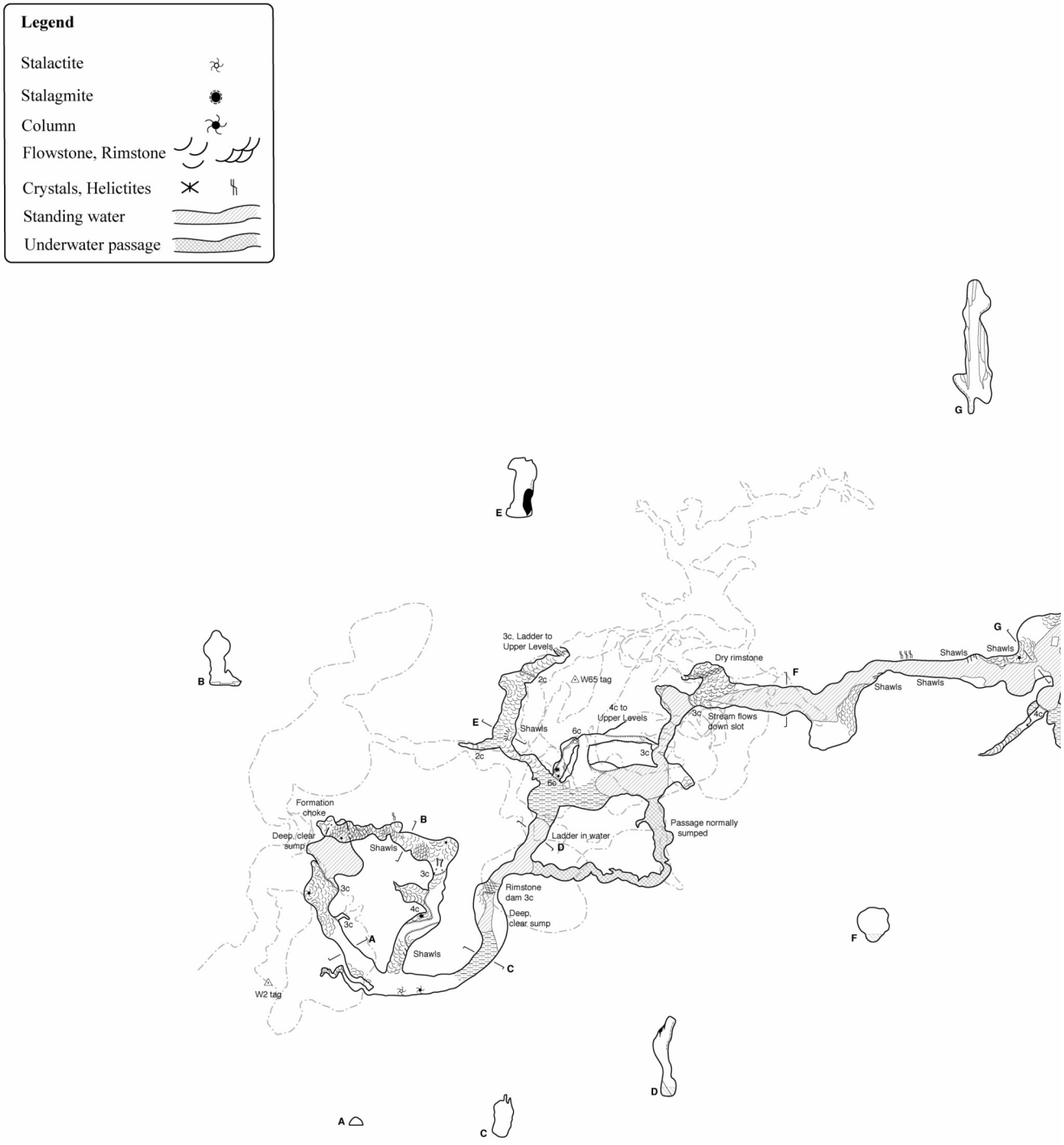
W2 Bullio Cave
Wombeyan, NSW

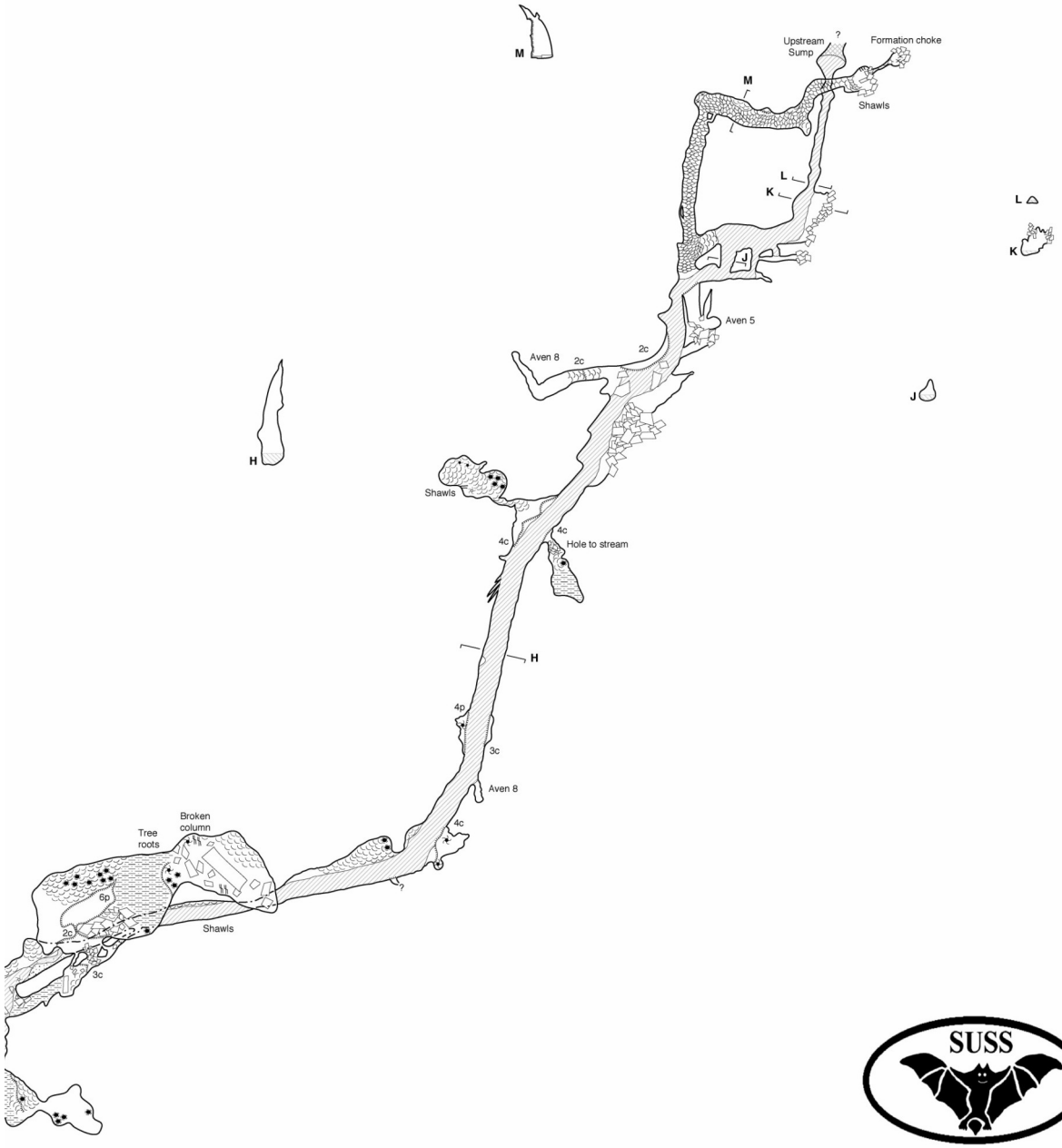
Upper Levels; Plan View



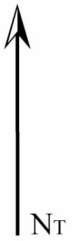
W2 Bullio Cave
Wombeyan, NSW

Streamway; Plan View





SUSS



0 4 8 12 16 20 40m

Scale 1:200

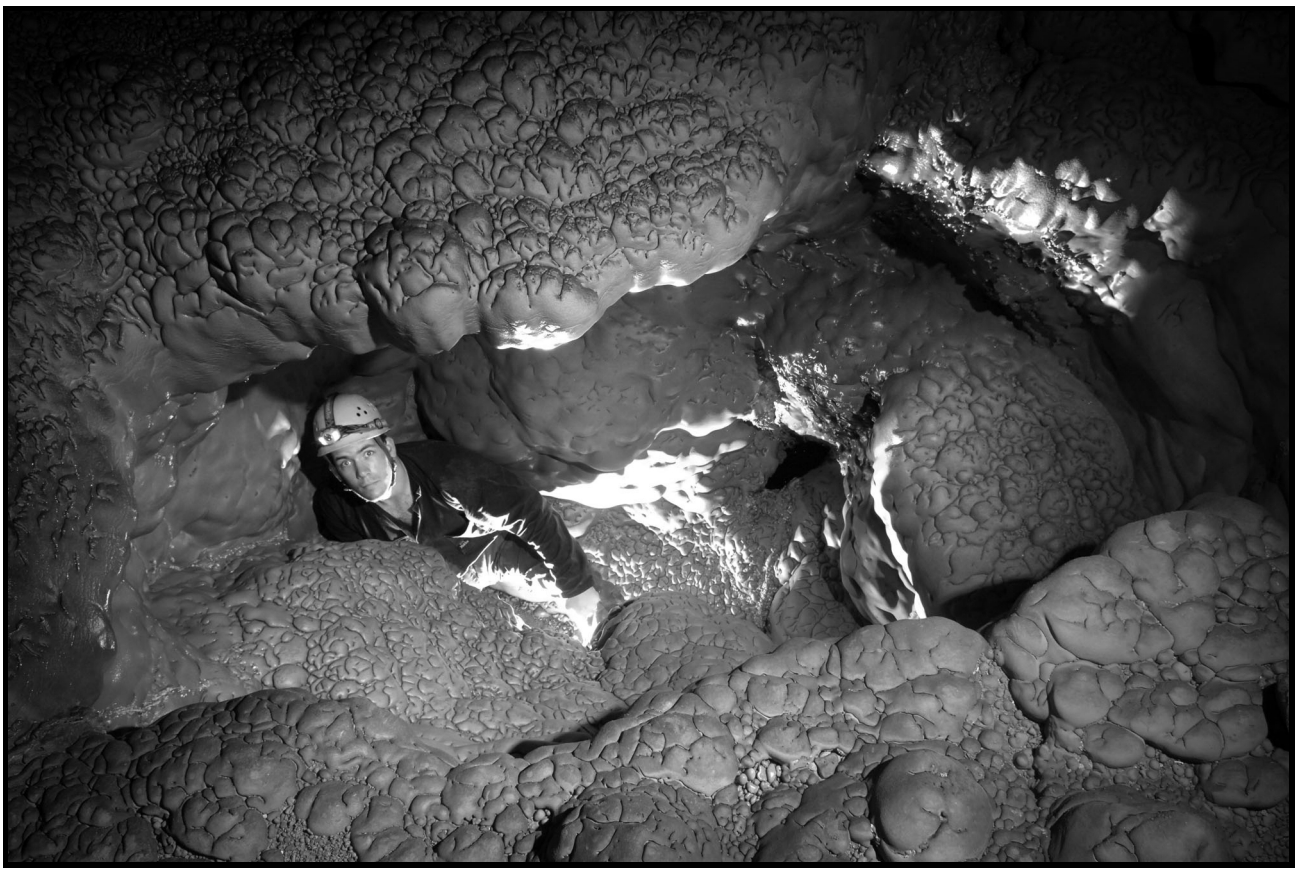
Surveyed by SUSS 2001 - 2003 to ASF 55AC

Surveyors	Matt Fischer	Rod O'Brien
	Geoff McDonnell	Alan Pryke
	Kevin Moore	Megan Pryke
	Phil Maynard	Jodie Rutledge
	Verity Morris	Mark Staraj

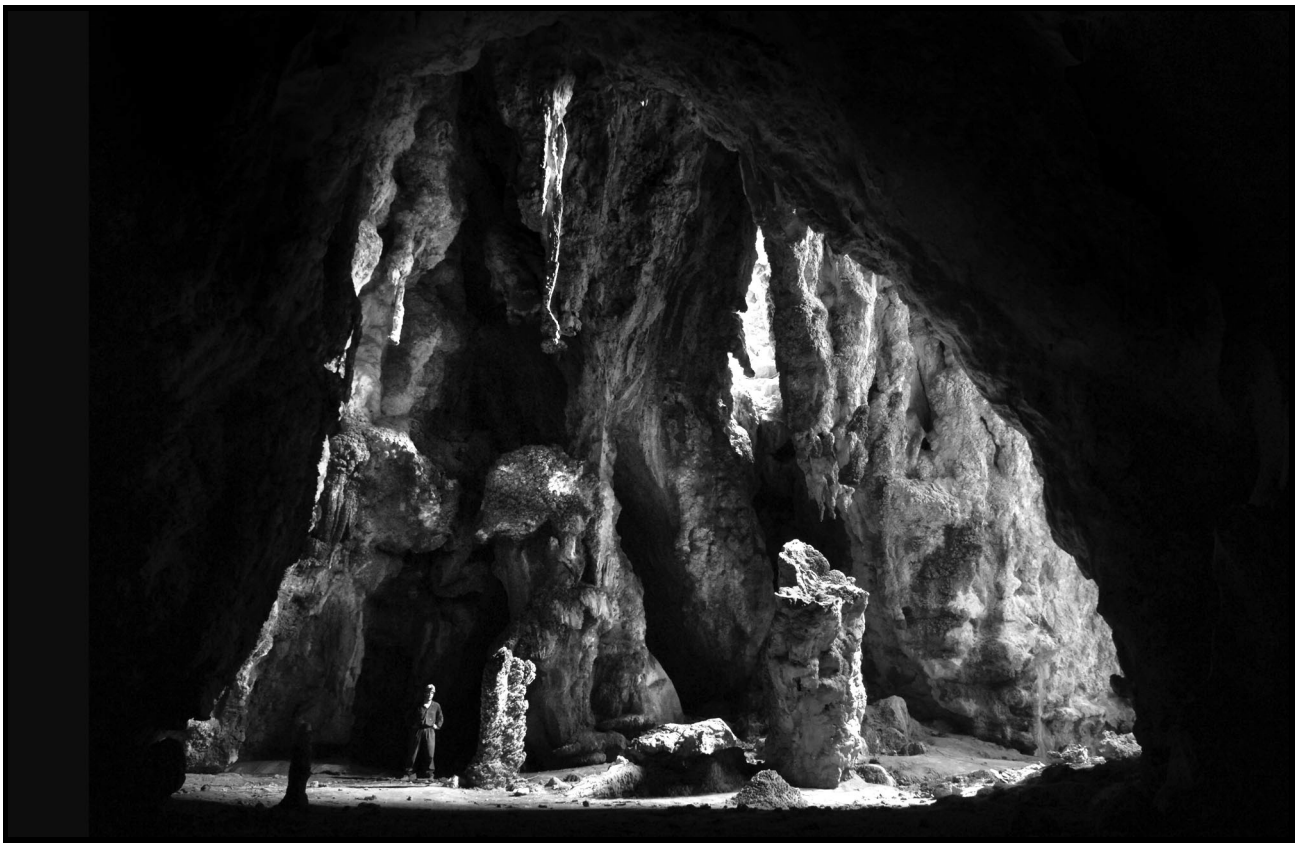
P Maynard A0 draft, February 2007 2W2.SUS2

Chillagoe, Queensland
photos by Alan Pryke

Alan gets up close and personal with the Stinging Trees, The New South Lander



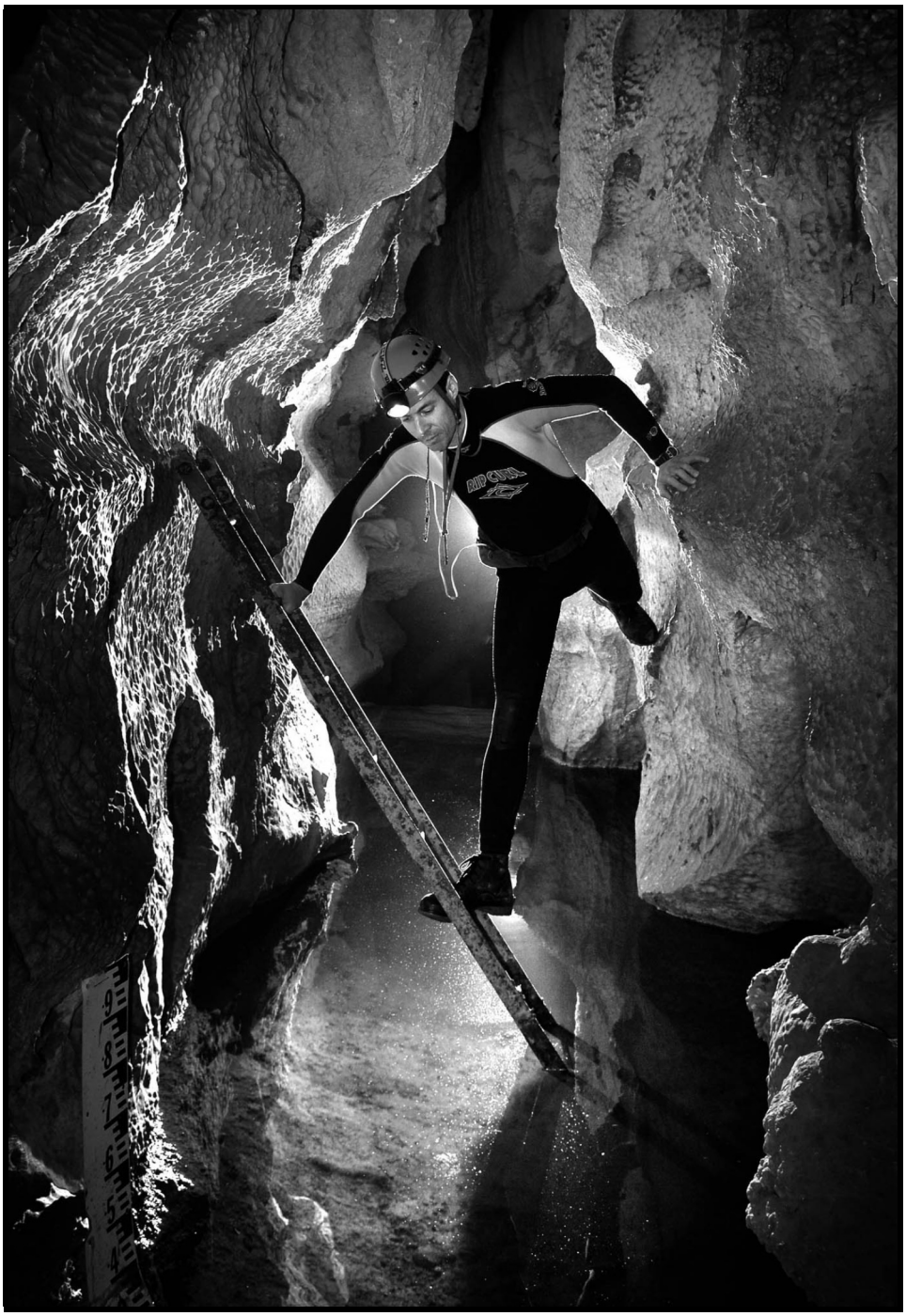
Winfried Wiess in Giant's Causeway



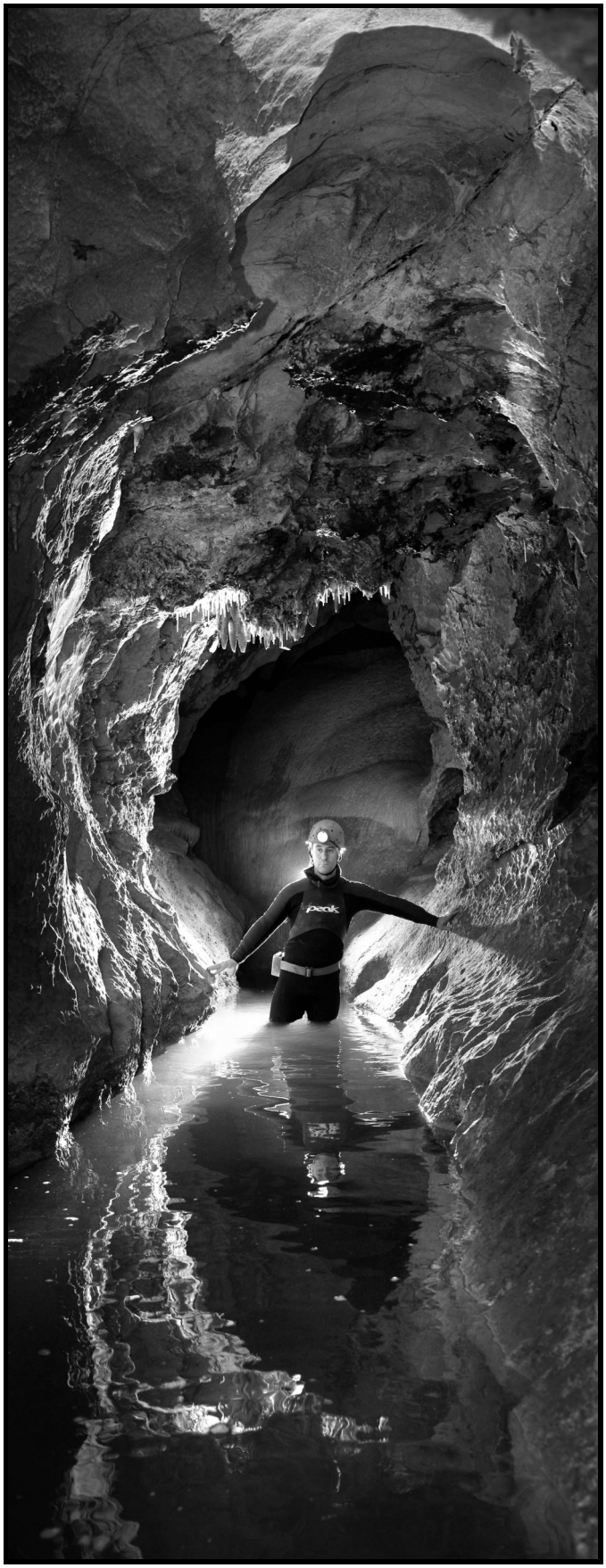
Daylight hole in the New South Lander

Entrance of the Queenslander

Bullio Cave, Wombeyan
photos by Alan Pryke



Michael Taylor in downstream Bullio



Phil Maynard in upstream Bullio

Getting off-track in Jubilee, Jenolan
photo Tina Willmore

Tina Willmore rigs across the pit, Jubilee
photo Natalie Fenton

At Cliefden Hut

Photo Tina Willmore

TRIP LIST: OCTOBER 2007

SUSS General Meetings are held on the first Thursday of the month at 7:00pm (for a 7.30pm start) in the Quadrangle at the University of Sydney.

For updates to this list, check out the SUSS Website: *http://ee.usyd.edu.au/suss*. Detailed information on each caving area (plus other useful information such as what you will need to bring) can be found in the *Beginner's Handbook* section of the Website.

Please Note: it is YOUR responsibility to inform the trip supervisor of any relevant medical conditions which may in any way affect your fitness, such as asthma, diabetes and the like.

October

27 – 28 Canyoning at Newnes. Contact Phil Maynard Philip.Maynard@uts.edu.au or 9908 2272 (home).

November

1 General Meeting. Quadrangle, 7:30pm.

3 – 4 Wombeyan. Well endowed caves near Mittagong. Contact Phil Maynard Philip.Maynard@uts.edu.au or 9908 2272 (home).

December

1 – 9 Jenolan. For those that still believe there is a Santa, he will be visiting the Caver's Hut at the Jenolan Christmas trip. Santa is not giving any presents because he just goes up there to be happy with the cavers, however, beer, wine, sausages, steaks, tall tales, and fine conversation for everyone. Mostly on the Saturday. Be there or be square. Come for the day or a week of getting down and dirty, followed by hot showers and entertaining evening banter. Jenolan has plenty to offer from grandma trips to full assault courses. Contact Tina Willmore tinaw@chw.edu.au or 9845 2325 (work).

2008

January

10 – 20 Mole Creek, Tasmania. Contact Deborah Johnston deborah@emotiv.com or 0424 042 585.

12 – 13 Jenolan. Come and enjoy a romp through the dark holes of Jenolan. There is always more to be discovered!

May

2 – 3 – 4 SUSS 60th Birthday! Jenolan plays host to our birthday celebrations. Contact SUSS –

http://ee.usyd.edu.au/suss