

SUSS BULL 42(4)

JANUARY – MARCH 2003



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SUSS Bull 42(4)

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Cover Photo: U-Turn in Mangawhitikau Gorge
Photo Paul Nelson

The President's Bit

Firstly a big welcome to all our new members. This is always an exciting time of year for us and we hope that those of you who haven't yet been caving or canyoning will come on a trip with us soon. We held our o-week canyon a couple of weeks back and that was a very enjoyable trip. Over a dozen of us visited Dargans canyon, a nice half day trip (with a very chilly swim at the end). We run trips all year that are suitable for beginners so if you don't make it in the early half of the year don't worry – just let the trip organizer know.

Sixteen of us are back from a two week trip caving in New Zealand. That was a fabulous trip and I'm sure you will read more about it. Waitomo is a playground for cavers, with superb streamway caves. Mahanoe was also an interesting area and worth a week's visit in its own right. If you are interested in seeing some superb streamway caves, Megan is organising a trip to Tassie. The details are on the triplist.

Finally it is that time of year again when we vote in a new committee. I would encourage those who have recently joined the club to get involved. We are always after fresh ideas and enthusiasm. Please contact me if you are interested in helping us out. For those who have been members longer, consider if this is the time to join the committee and ensure that the club continues to prosper. See you at the AGM on May 1st! Annalisa Contos

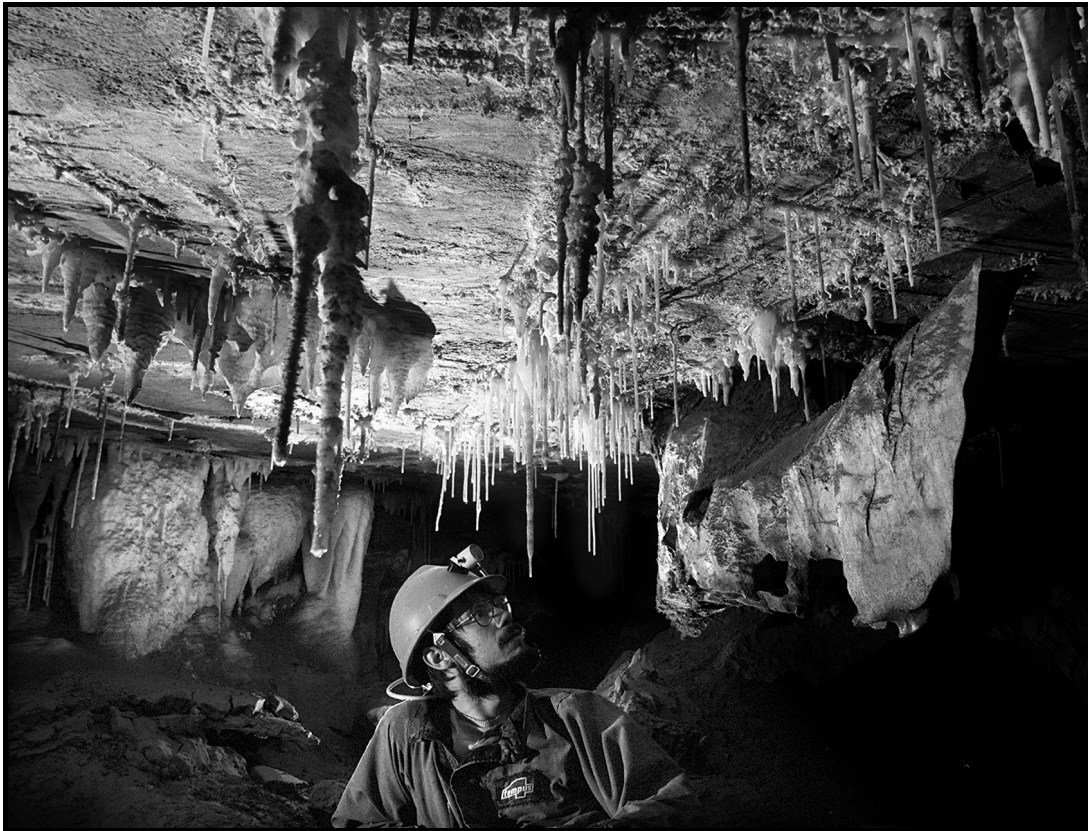
Post Christmas Sale Rush in Now....

The club now has some tops for sale. They are available in a range of sizes and colours, with the SUSS logo embroidered on the front.

Prices are:

- Fleeces \$50
- Polo tops \$20
- t-shirts \$17

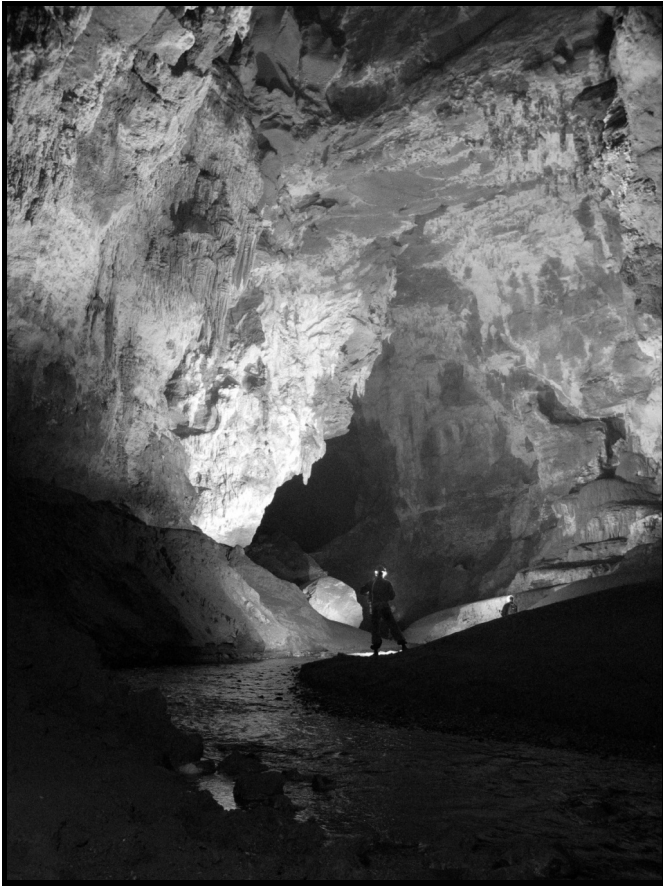
Contact Annalisa Contos for details and orders.



Martin Pfeil in Sigma Cave. Photo Alan Pryke

CAVING IN WAITOMO, NEW ZEALAND

TEXT AND PHOTOS BY PAUL NELSON



Hollow Hill

In 1999, I originally planned to visit New Zealand, and their caves, on the way home from a six week trip to Papua New Guinea and Australia. I was having such a good time in Australia and with time constraints; I decided to forgo New Zealand to a future trip. This decision was a good one, because as you will discover, five days is insufficient to visit caves in New Zealand.

Last December, I was ready for a two-week adventure vacation. I spoke with some friends down under and learned Sydney University Speleological Society (SUSS) was planning a trip to Waitomo, New Zealand during late January 2003. I was able to join the trip and looked forward to having a fun time with the lively Aussies. My next task was getting the equipment for the trip during the next three weeks.

Since the caves are wet I needed a nylon suit, as my PVC would be much too warm. Unfortunately during the Christmas and New Years period, most cave suit makers were on holiday. Fortunately, Dragon Speleo in Wales would be able to make and get a suit to me in time. I also contacted Sterling Rope, and they were able to provide some of their 10 mm HTP polyester rope which would be excellent for wet caves as polyester does not absorb water. I finally decided to go digital for photography for this trip. After spending a week trying to find a digital camera that is compatible with flash slaves, I ordered a Canon G2 three days before departure. (Advice to anyone using flash slaves — be sure to test the camera before purchase, as many digital cameras use a pre-flash for exposure set-

tings which triggers the slave too early. This is different to red-eye reduction.)

It was the day before I was to leave, and my cave suit had not yet arrived. With the struggle to find the right camera and no cave suit, my stress level was terrible. A little notice in my mail box informed me to pick up a package at the post office. I had to pick it up at the post office the morning of my departure! Fortunately it fit ok. After arriving at the airport, my stress ended, and I could finally relax on vacation!

Travelling 'Down Under' takes a long time and since I cross the International Date Line I had to leave two days prior to meeting the group on Saturday. (On the way back, I arrived in LA before I left in Auckland — think about that when you're drunk.) Little did I know the adventure was about to begin before arriving in New Zealand. United Airlines had overbooked the flight, so I was routed to Auckland via Sydney. I was supposed to arrive by 2:45pm, a little later than many of the others coming from Sydney. No problem, a quick phone call to let the group know I was arriving late, and I was quickly placed on the plane to Sydney. Upon arrival in Sydney, I discovered I was booked on a later connecting flight to Auckland arriving at 5:20pm, not 2:45pm. Would my mates figure this out and wait, or would I be on my own!? This was troublesome because with all the gear issues I never got directions to exactly where we were going to stay.

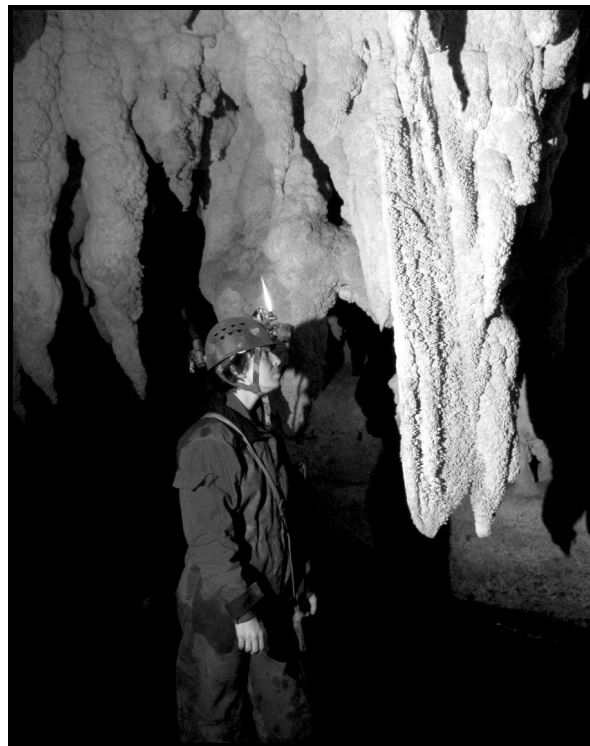


In Gardner's Gut

Unfortunately, United did not have a customer service desk in the international transit area, and I could not go to the main terminal area without going through immigration. For some reason there were few United agents to be found. I told my story to a Qantas agent, and I asked if she could get a message to my friends that were checking into a Qantas flight on the other side of the terminal. She took pity on me, and found a United agent to help me. After hearing my saga, both of them tried to get me placed on the Qantas flight that the others were on! However, the problem was they could not find my bags. (New travel regulations require you to travel on the same flight as your bags.) By the time they discovered my bags were already in Auckland (so much for regulations), it was too late to catch the Qantas flight. Since the Qantas flight was beginning to board the plane, the agent entered into their computer system to give a message to SUSS member Megan Pryke when she boarded that my arrival time had changed.

After about 24 hours of travel, instead of 12 hours, I finally arrived in Auckland! The next task was getting my luggage. Since my bags had already arrived, and the last United flight arrived in the morning, my bags were in lock-up, and of course, no United agent was around. Fortunately, the Air New Zealand agent was able to unlock the storage and get my stuff. I was able to get through customs easily, but I was asked detailed questions regarding the cleaning of my outdoor equipment (If you are going to New Zealand, be sure to clean your gear with water and a brush to get off the dirt). My thoughts turned to: Did Megan get the message of my late arrival? The answer was yes, as I saw Chris Norton waiting for me.

After cramming four people, four sets of caving gear, and vital supplies of beer into a small car, we set off for Waitomo, which is about 2 hours south of Auckland. Our destination was the Hamilton Tomo Group's caving hut which operates as a backpacker hotel, and was to be my home for two weeks. I was looking forward to a vacation of meeting some Aussies and Kiwis. Upon arrival, I was horrified to discover about 20 Americans on a college adventure tour were staying at the hut. I expected to be the sole American there. I declared to one of the Americans, "there are too many bloody Americans!" One of them asked, "Hey, aren't you an American too?" Yes, but I am Californian so that is different. They were only staying a few days, so that was good. I had lots of fun answering the phone when someone wanted to talk to someone from the group of Aussie cavers. After a long pause they replied, "you must be the one from California."



Annalisa Contos in Upstream Waipuna

the group of Aussie cavers. After a long pause



The next morning, Sunday, January 19, was the first caving trip of the vacation and I was anxious to experience Kiwi caves. With the high rainfall, and very green scenery, I expected to see lots of stream passage and many decorations! I decided to go to Virginia Cave which is known to have a very nice decorated passage. This would also be a good test for my new digital camera, and because we had to swim across a muddy pool of water, also a test of my new pelican case. I was joined by Sean Hill, Michael Taylor, and fellow Newcastle club member Mike Helman. After descending the 35 meter drop, we headed upstream past something that smelled very dead. Dead animals are often encountered because they either fall in or sometimes the farmers toss them down the entrance. The passage ended at a beautiful pool with white formations flowing into the water which is called the Hall of the Gods. The digital camera worked great and it was fantastic to be able to see the results and adjust the lighting to get a great photo.

New Zealand — A Cavers Paradise

In California, finding a cave entrance generally requires a lot of effort. Usually it involves a long hike to get to the entrance, and often up a steep nasty slope. Sometimes the hike is more difficult and longer than visiting the cave! In New Zealand, it was driving onto a farmer's property, going through several livestock gates and parking within a kilometer of the entrance. What made this trip really nice is the HTG hut has many maps of the caves and a book of who to call to get permission to visit or cross a farmer's property. The most difficult part was

deciding which of the many caves that were within an hour's travel you wanted to visit.

The typical Waitomo cave passage follows the stream level with an occasional break-down which required climbing over. The passages were on average about an arm span wide. Occasionally there was a larger room, but nothing I would call big, [Paul didn't go to Mangapu – ed] except for Hollow Hill which has a massive tall and wide passage that follows the stream. The lower levels were not generally decorated, but the upper levels, above the flood zone, often had nice decorated areas. What surprised me most was that there were not many junctions. I expected junctions from side streams joining the main passage, but that was generally not the case. I suspect there are side passages at the upper levels, but we spent most of our time at the stream levels.

Spending Some Time in the Light

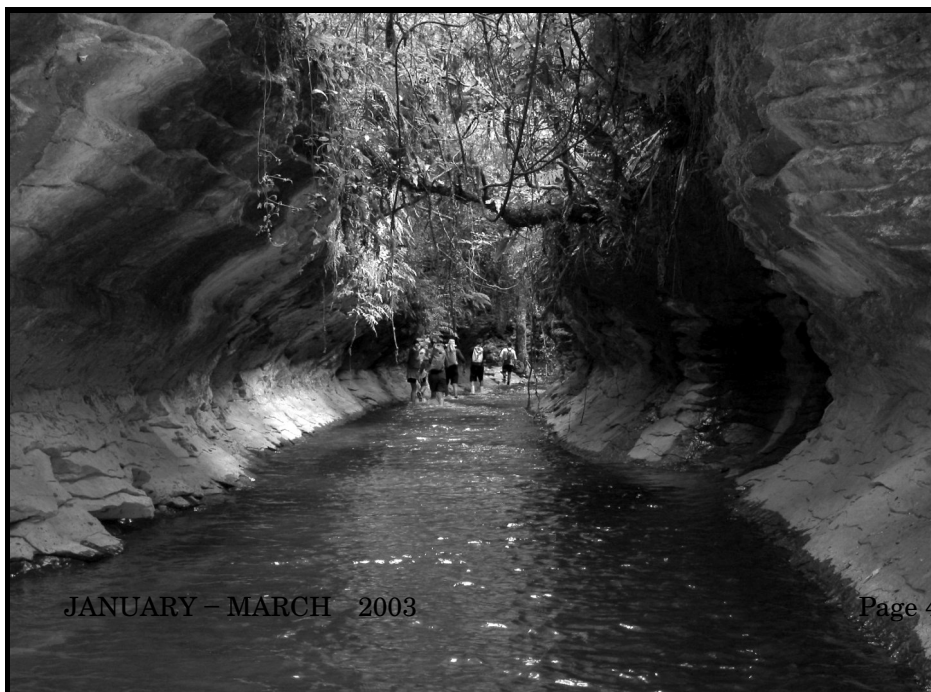
There are activities on the surface, and we spent a day exploring Mangawhitikau gorge. The group was Aussie Andrew, Phil Maynard, Sean Hill, Verity Morris, Simon Goddard, and myself. It is a nice walk upstream in a

beautiful canyon with vertical walls and native jungle vegetation. There is one spot when the river takes an almost 180 degree turn on itself for 100 meters, followed by a 90 degree bend. We eventually came upon a resurgence, and climbed over the hill through native jungle to explore a small cave with many glow worms!

Glow worms, which are the pupa stage of an insect, are unique to Australia, New Zealand, and possibly some of the other South Pacific islands. The worms are generally found on the ceiling. They hang threads up to a foot long of sticky material; similar to a spider's web, but without the complex structure. The worm uses bioluminescence to attract insects which get caught in the threads and become a meal. The Waitomo area is famous due to this little worm, and many tourists come



Annalisa Confos in Gardners Gut



to see the Glow Worm Cave of Waitomo.

New Zealand is volcanically active, and I spent a day above ground visiting geothermal springs and pools near Rotorua. I was joined by Chris Norton, Simon Goddard, and Sean Hill. In addition to mudpools, gurgling steaming water, there are pools with green, yellow, and orange water caused by different minerals in the water. I didn't see any geysers, but the views and scenery are quite spectacular. We also visited Kerosene Creek to swim in the hot springs, which were almost unbearably hot and it took a while to adjust to the water. However, they had a sign warning of amoebic meningitis which can enter through your ears and nostrils. I wasn't sure I wanted to stay a long time in the water. I was more content to relax on the grass and enjoy the sunny day and not have to worry about what horrible amoeba called meningitis might do to me!

The Blackwater Experience

During one evening, after dinner, a local known as Aussie Andrew arranged for the group to experience Black Water Rafting which involves floating downstream the inside of a cave on a tire tube! They provide wetsuits, lights, and shoes, and it's very popular with the tourists. The experience was a lot of fun and a highlight was floating down the cave with our lights off and the passage lit only by glowworms. It is a touristy adventure, but it is a lot of fun, and I recommend the experience even for skilled cavers.

Caves, Caves, and More Caves

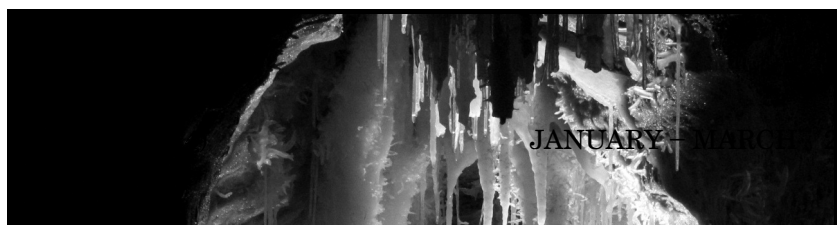
During my vacation, I did 12 caving trips. As I mentioned earlier, there are hundreds of caves which are easy to reach in the Waitomo area, the problem is deciding which one to visit. While all of them were great and fun, four caves left a lasting impression and are on my personal must visit list. However, honorable mention goes to Hollow Hill because it is so different from the other caves in the area and the passage is very large.

The first is Mangawhitikau cave which has a huge underground river passage. A wetsuit, good swimming ability, and dependable light are required. This cave is quite long and requires permission from two land owners because the entrance and exit are on different properties. You start by descending a smallish entrance and after a 30 meter vertical drop you follow a narrow canyon which does not seem very impressive. Suddenly you join the main river and begin going upstream. It has water falls, whirl pools, and some large rooms. Eventually, you reach a sump which is bypassed via an upper level. However, to get back down to the main stream there is a 30 meter vertical chimney. It looks scary, but is easily done. After following the stream it becomes wide and as you approach the tomo (native New Zealander term for pit or drop) exit there are heaps of glowworms! I also met a tourist party from Blackwater in tire tubes. Never passing up a chance to surprise, or confuse, a tourist, I asked if they were the pizza delivery I had ordered.



Gardner's Gut

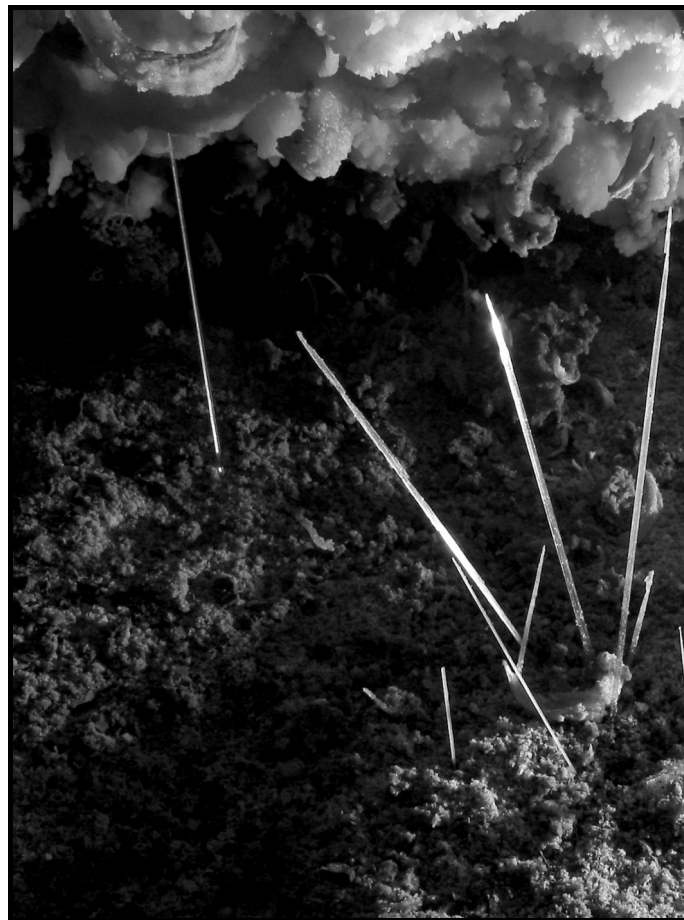
Second is Gardner's Gut, which is the North Island's longest mapped cave at 2.25 miles from the Downstream Entrance up to the



Helms Entrance! I did three trips to this cave and went to three different areas. The

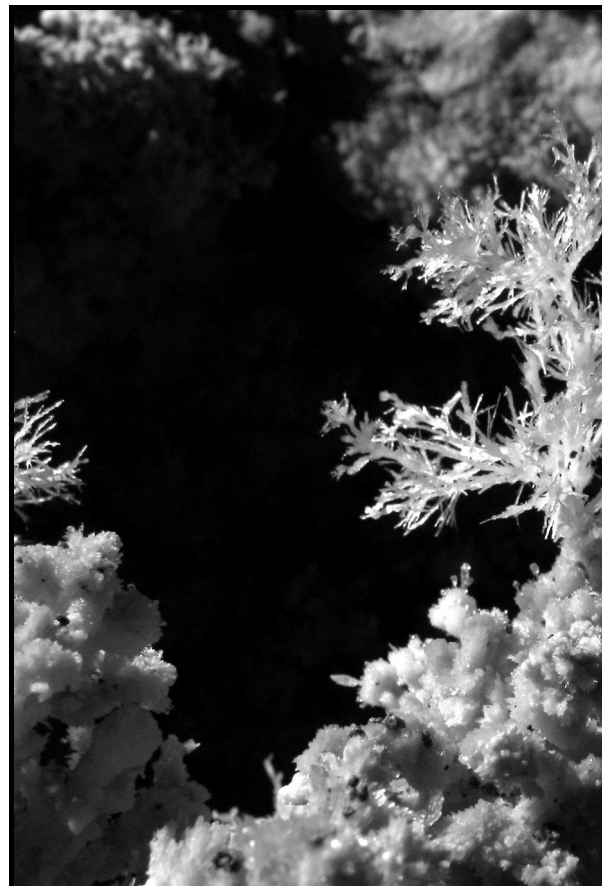


Entrance Pitch



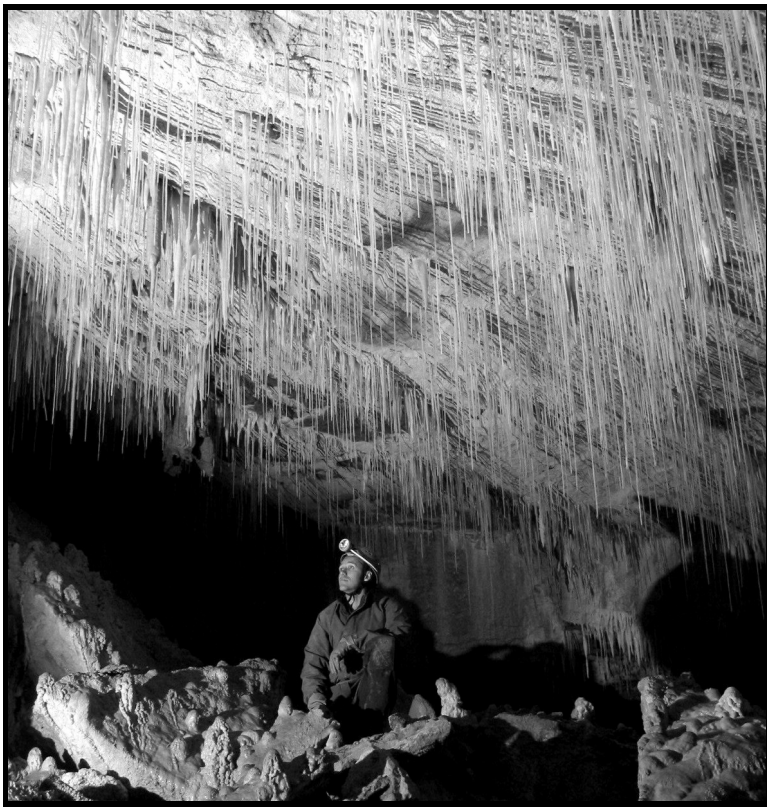
Selenite in the Diamond Mines

Kuratahi:



first trip was to see a highly decorated area in the upper Peter Lambert Level. This trip involved a tricky climb up, and I was chosen as the person to make the climb. (Why do I always get selected to do the tricky climbs when I am usually the shortest person in the group?) We first attempted climbing up a face that looked very scary, but was wisely aborted. After some searching, I found a

chimney route that I could ascend. The scariest part was traversing into a smooth dirt covered slope that dropped off into the stream 60 feet below! I managed the climb, and rigged a tape for the others. Geoff was willing to do the scary climb with tape, even though I recommended the chimney route as being easier. Sean and Alan decided to exit the cave as they were cold, and I don't think were inspired to make the scary climb. Geoff and I explored the upper level, and while taking pictures I soon heard voices. The sound was coming from a small passage beyond, so they managed to find another way up. We turned off our lights and were going to give them a scare when they emerged. After hearing Alan Pryke grunt and groan trying to get through the Organ Grinder squeeze, I could not contain my laughter any more.



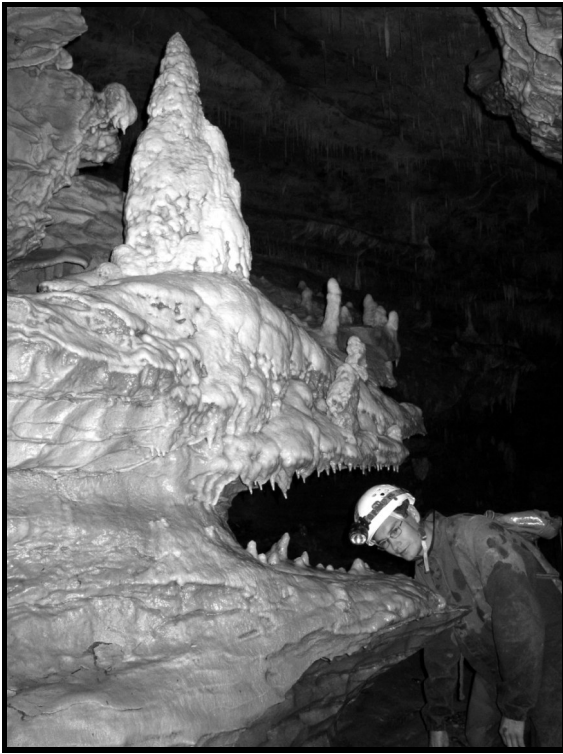
Sean Hill in Waipuna

The second Gardners Gut trip was a 2.25 mile through trip from the lower to upper entrance. The passage from the lower entrance is a tall and narrow canyon stream passage that is sometimes only a body width wide. The lower stream section is not decorated as it is subject to flooding. Towards the upper entrance the passage became wider with oxbow turns and more side passages. This area is also more decorated. Eventually, the passage becomes narrow again and terminates at a tomo. You climb up and emerge in native New Zealand jungle and a nice place for a lunch break. You could walk back on the surface through confusing jungle, but it is easier to return underground.

The third Gardners Gut trip was to visit the Henry Lambert level, which is an upper level on the opposite side of the stream to the Peter Lambert Level. This passage is reached by entering the Zweihohlen entrance which is about 200-300 meters above the Downstream Entrance stream level. This has some nice decorations including a very large stalagmite called the birthday candle. Another very interesting formation is a translucent stalagmite that glows red when you put a light behind it. We then abseiled down into the main stream passage and exited the cave.

Strike. It begins with a small stream entering the hillside and doesn't look very promising. Very quickly is a small waterfall that you must descend which ends in a deep pool. A tape is recommended, and before I went down, I tied a footloop, to make it easier to get back up. The passage is mostly body width wide and smooth with lots of climb downs, and you are certain it will end very soon, but yet it keeps going. Then suddenly after a crawling under a formation, the passage widens with flowstone on both sides of the canyon. The upper level was covered in white flowstone and was very pretty. The cave then became a narrow slotted canyon with climb downs. Eventually you reach a pretty water fall into a sump. Then the fun begins. Because you have been going downstream, but on the return it's upstream through smooth slippery canyon stream passage. This requires much more effort! This is a cave you can underestimate and is very sporty. It was the only trip where I felt I had done some hard caving. Upon returning to

The third cave on my must visit list is Luckie



Mark Lowson in Gardners Gut

the waterfall near the entrance, I was glad I tied the foot loop, because without it I am not sure our party could have gotten out of the cave!

The fourth cave on my must-visit list is Fred which has a 70 meter free entrance drop! The drive to the cave was the usual transit through a sheep paddock. However, there were a lot of sheep, and sheep being sheep, they decided to run. The sheep in the neighboring paddocks on both sides also decided to run. It was my first attempt at sheep herding, but I think I did a good job. After locating the right entrance, you descend a slope to the sudden drop off. After going over the edge you come to the rebelay with a 70 meter free drop. You try to avoid looking the long way down to the bottom. The walls are smooth and there is a small water fall to your left. You keep wondering when you will reach the bottom. The view looking up at the sky with the trees in the background is quite beautiful. The other reason to visit Fred is to see some very nice gypsum flowers and crystals. After visiting the cave, you must pay the price and climb up the rope which takes 20–30 minutes.



Other Activities

With a large group, certain individuals are going to get restless and need a diversion! A certain individual that I will call Nomis wanted to set off a few carbide bombs one evening. For those not familiar with

carbide bombs, when acetylene gas reaches a certain pressure it detonates thus making a lot of noise. The only problem is that to avoid upsetting the nearby neighbors such activities are not allowed at the HTG hut. After supplies of carbide, water, and containers were found, and more importantly someone sober enough to drive, ie me, we departed to put on a show. There was no one around and only the distant mooing of cattle could be heard, a perfect location. About three or four bombs were set off with enough intensity to produce an echo that could be heard through the valley. Nomis and the gang were very happy! I decided it was time to leave — I did not want to answer any questions to a local police force that was suspicious about some foreigners that were up to no good.

New Zealand was an excellent vacation spot and I enjoyed myself tremendously. The members from SUSS were skilful cavers [???? *ed.*] and I hope they enjoyed caving with me as much as I enjoyed caving with them. Hopefully some SUSS people will visit California soon so I can show them some excellent marble caves.

Caves Visited

Sun, Jan 19 Virginia: Paul Nelson, Mike Helman, Sean Hill, Michael Taylor

Mon, Jan 20 Mangawhitikau Gorge: Paul Nelson, Phil Maynard, Simon Goodard, Verity Morris, Sean Hill, & Aussie Andrew

Wed, Jan 22 Mangawhitikau: Paul Nelson, Phil Maynard, Sean Hill, Verity Morris, and Michael Taylor

Thu, Jan 23 Gardners Gut: Paul Nelson, Sean Hill, Geoff McDonnell, Alan Pryke

Fri, Jan 24 Ernies Waterfall: Alan Pryke, Geoff McDonnell, Megan Pryke, Paul Nelson, & Martin Pfeil

Sun, Jan 26 Waipuna: Annalisa Contos, Sean Hill, Paul Nelson, Patrick (Welsh caver). Luckie Strike: Ibid.

Mon, Jan 25 Kuratahi: Paul Nelson, Mark Lowson, Sean Hill

Tue, Jan 26 Gardners Gut: Paul Nelson and Mark Lowson

Wed, Jan 27 Fred: Paul Nelson, Sean Hill, Phil Maynard, Verity Morris, Mark Lowson

Thu, Jan 28 Hollow Hill: Paul Nelson, Phil Maynard, Mike Helman, Sean Hill

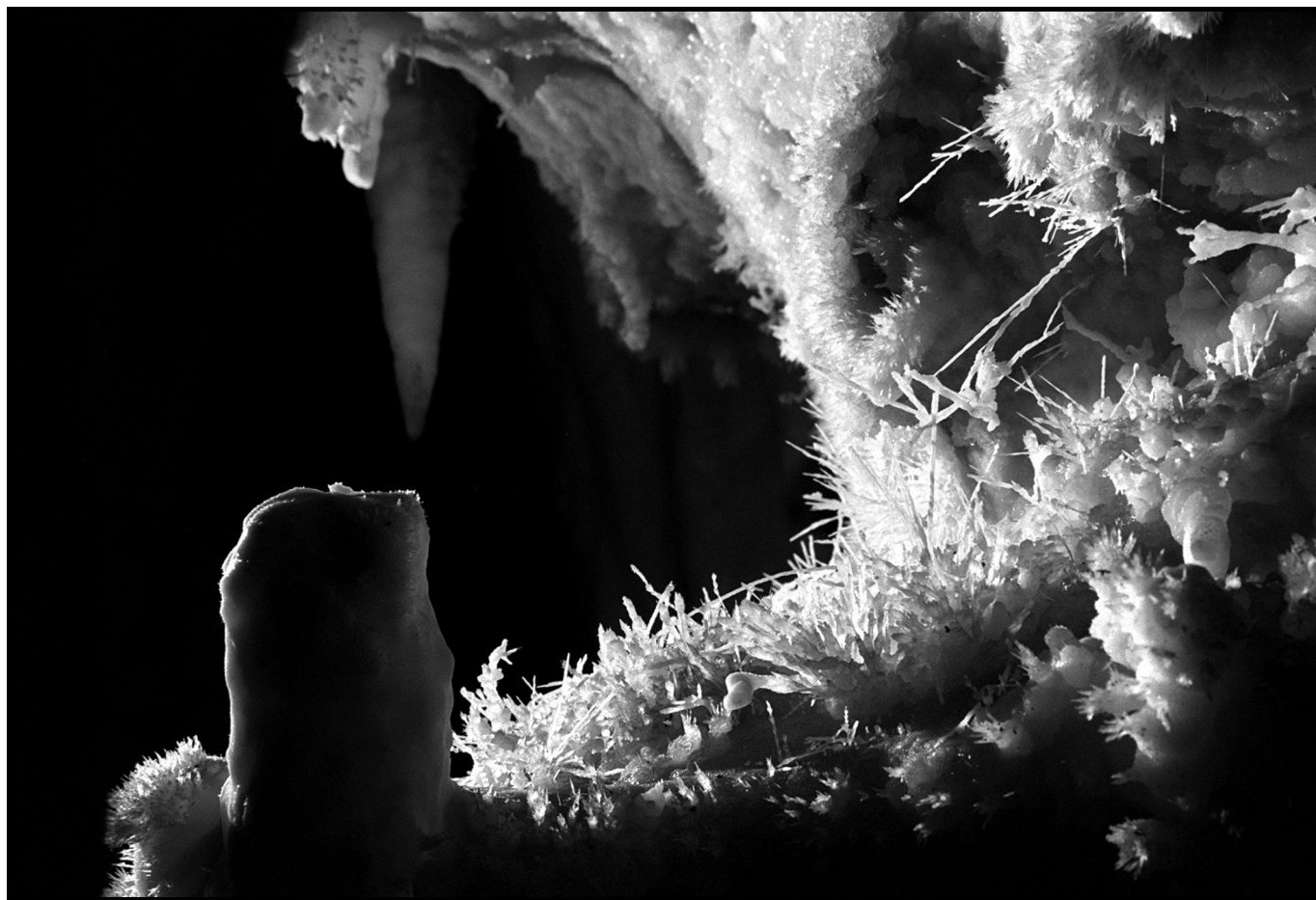
Fri, Jan 29 Gardners Gut: Paul Nelson, Annalisa Contos, Simon Goddard, Sean Hill

Sat, Jan 30 Catherwoods: Megan Pryke, Annalisa Contos, Simon Goddard, Mark Lowson, 'Muppet' (local HTG kiwi caver)

THE NEVER-ENDING SURVEY — SIGMA CAVE, W45

BY JILL ROWLING

PHOTOS BY ALAN PRYKE



Aragonite Canyon

History

Sigma cave was discovered in 1975 by members of SSS during a trip which was intended to survey Tattered Shawl Cave. It has been described and photographed in the Wombeyan Book (Dyson, Ellis and James eds.), published by SSS in 1982 and listed as cave W45. It was certainly known (if only by name) by other clubs when the 1985 Karst Index (Matthews, ed.) was published by the Australian Speleological Federation. Descriptions of some of its crystal vughs were included in an article by Dr. Armstrong Osborne ¹.

Sigma is one of the best decorated caves at Wombeyan. Access is highly restricted due to the delicacy of the formations and the complex mineralogy of the cave. The accuracy of the map was questioned often over the years, so SUSS undertook to re-survey the cave as part of a general documentation and research effort.

My first visit to the cave was with SUSS when Robert Brandt led a photography trip to it. Pat Larkin used to go to Wombeyan Caves in the mid 1980s and had often mentioned Sigma Cave so naturally I was keen to see it.

The Robert Brandt trip of July 1989 entered the cave via the (then ungated) upper entrance, and slowly made their photographic way to the main chamber, Iota Grotto, the Pointed Finger, and so on to Omega Chamber. Very little rigging was used other than handlines and freeclimbing. This trip was not written up but was mentioned in SUSS BULL 29(3).

¹The history of karstification at Wombeyan Caves, New South Wales, Australia, BCRA Vol 20, 1993

Another trip on the 11th November 1989 was led by John Oxley. This trip is recorded in the SUSS Bull.² The cave was in very good condition as I remember. The trip followed the same path as the July one to Omega Chamber and back. I exited via the lower squeeze entrance which was at the time ungated.

In the early 1990s, there was concern that the cave was being visited by people who were not members of a Speleological Society, so John Bonwick was asked whether he might construct and fit a gate on the top entrance. This was done with the permission of the Manager, Mike Chalker. John was later asked if he might put a gate on the lower entrance, too as it appeared people were still using the cave. I remember inspecting his handiwork and it's pretty impregnable [As can be seen in the photo. ed]. For safety however, the lower entrance gate can be removed from the inside.



Megan Pryke in the top entrance of W45

As far as I can remember, there were no SUSS trips to the cave from the 1989 trips until the first SUSS survey trip on 17/8/96 led by Mike and Jill. One of the first things I noticed was the muddying. Robert Brand had been fanatical about us taking our boots off for the clean flowstone areas in the main chamber, and we had to take a change of boots on the return trip from the muddy creek area so I was a bit miffed that other visitors to the cave had not seen fit to follow these basic rules.

The other thing we noticed were some mud sculptures in Omega Chamber. They would have given a psychologist a field day. I think they were destroyed on one of the survey trips as one sculpture always seems to lead to another.

The survey trips

The main driving force behind the survey was the poor correlation between the SSS map of the cave and reality. I asked some of the SSS members about this, and it seems they were lucky to have got a map at all. Apparently there were problems with the field data.

The SUSS survey trips were pretty much written up in the SUSS Bulls at the time.^{3 4 5 6 7}

The survey trips were all led by Jill as follows:

- 17/8/96 Omega Chamber.
- 16/11/96 Top entrance inwards to Main Chamber.
- 1/2/97 Main chamber to 42 series (up ramp towards Medusa area). So-called because most of the elevations were about 42 degrees.
- 12/4/97 42 series, up ramp, down to Medusa room and Pointed Finger 2. Thanks to Geoff for pointing this finger out to us. (= stalagmite)
- 10/5/97 Radials in main chamber and more medusa area.
- 19/7/97 Lost Tape Route (a small passage that runs parallel to the drop into the main chamber and drops vertically into the Funnel Room). Ends at an old SSS survey point 33 in Iota Grotto.

²Sigma and Basin Caves: Photographic Delights, SUSS BULL 29(3): 22–28

³Sigma Cave Surveying, SUSS Bull 37(3): 28–36

⁴Sigma Cave Surveying: July 1997 – February 1998, SUSS Bull 37(4): 38–44

⁵Many Sigma Survey trip reports... SUSS Bull 38(2): 24–28

⁶Sigma Survey: The End of the Survey? SUSS Bull 38(3): 32–33

⁷Sigma Done; Tattered Shawl Next, SUSS Bull 39(3–4): 11

- 6/9/97 Iota Grotto, Pointed Finger Chamber, side passages.
- 1/11/97 The drop to the creek, Knockers Cavern.
- 31/1/98 Omega Chamber to Psi Pit.
- 21/3/98 Omega Chamber, Psi Pit, Aragonite Canyon.
- 4/4/98 Aragonite Canyon area.
- 23/5/98 Aragonite Canyon area.
- 20/6/98 Lower section, south west of Aragonite Canyon.
- 25/7/98 Omega Chamber following streamway.
- 21/11/98 Downstream area, up to 'Nu Aven' (we renamed this Nu Dome because it's not an aven).
- 29/5/99 Tight stream passage, Knockers Cavern Two.
- 30/5/99 Stream entering Omega Chamber from the south.

The survey took a lot longer than expected because we kept finding new cave. The Manager was apparently not impressed with this, as the permit kept having to be extended. We found the Aragonite Canyon as the result of pushing a lead, although when we got to the best of it, it was pretty clear that other people had been there beforehand. On another trip, I managed to get through the squeeze into the downstream section which also led to Nu Dome. When we surveyed the Main Chamber, we wondered about a steep ramp and surveyed up it. It didn't croak; instead, it led up high into the Medusa series, which had leads all over the place. We surveyed all we could (see 'leads').

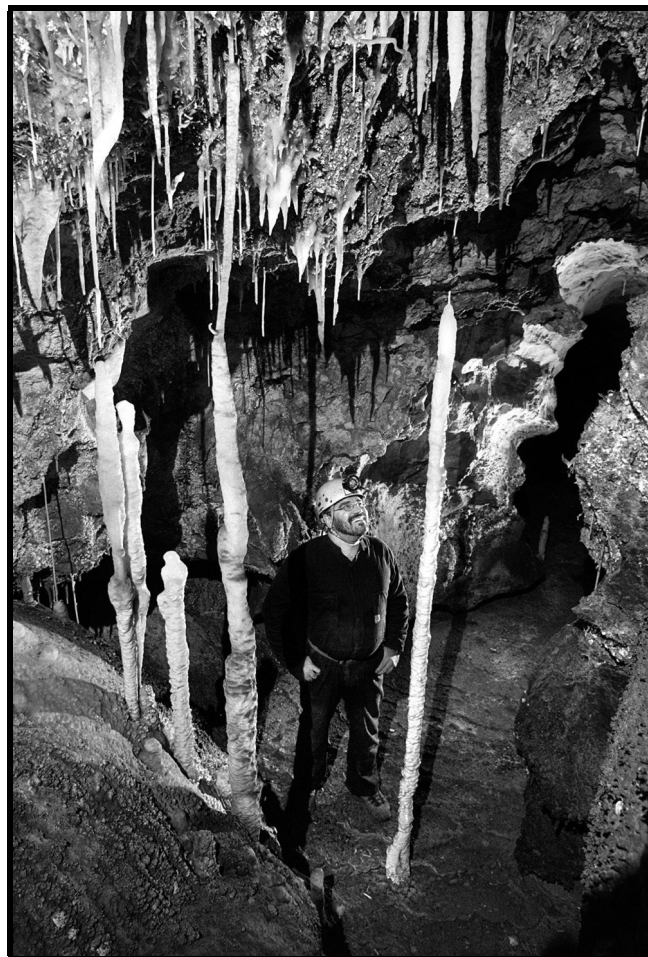
I drew up the in-cave maps mostly at 1:100 so I could note the mineralogy and other items of interest. Phil Maynard put together the overall 1:200 map sheets.

A bit of spectacular climbing by Geoff McDonnell added the high passage which leads past the dark shawls near Fallaway Drop / creek area. This led to some speculation as to where did Tattered Shawl Cave fit into the scheme of things.

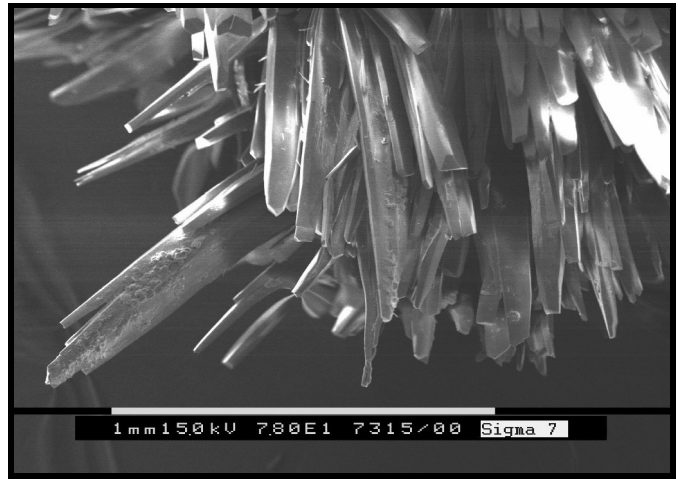
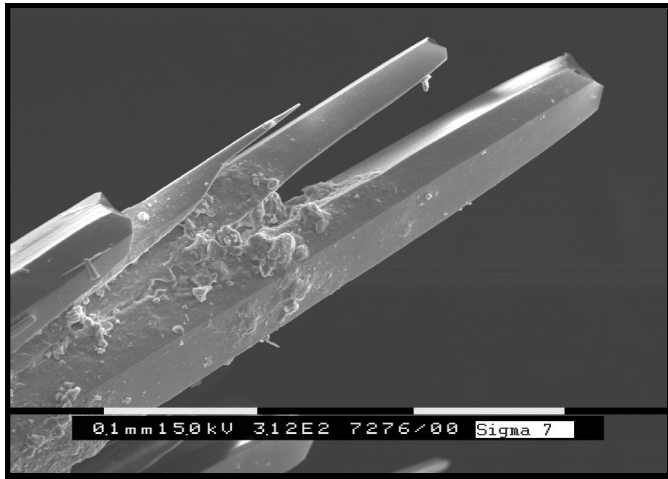
So SUSS also surveyed Tattered Shawl Cave. I didn't lead those trips but I do recall doing some surface surveys and part of the entrance. I went on a non-surveying SUSS trip once and was impressed with the nice little pitch (yes, Wombeyan does have some vertical stuff) but wasn't so impressed with the cloying mud at the bottom of the second drop.

I sent some of this mud to the Australian Museum along with a small bit from J41 (Dwyers Cave, Jenolan) that I picked off the SUSS ladders one time. I actually needed to know what it was for my MSc work on Cave Aragonites and it turned out to be Kaolinite. [From *volcanic rocks?* ed] This is the same stuff that you make ceramics from. Kaolinite has this amazing ability to absorb water, and the crystals tend to glide over each other, so it is incredibly sticky and cloying. The colour of the mud samples was mostly due to hydrated iron oxides.

After the Tattered Shawl survey was completed, the distance between the two caves was examined. It was only about 3 to 5 metres at the closest point, which is near the top of the Pointed Finger chamber and the dark shawl room. The connection must not be made because it would destroy the Pointed Finger room by changing Sigma cave's atmosphere. So I guess one could say that Sigma has swallowed a Tattered Shawl.



Kevin Moore at The Pointed Finger



Aragonite from W45. Electron Microscope Imagery by Jill Rowling

Mineralogy of Sigma Cave

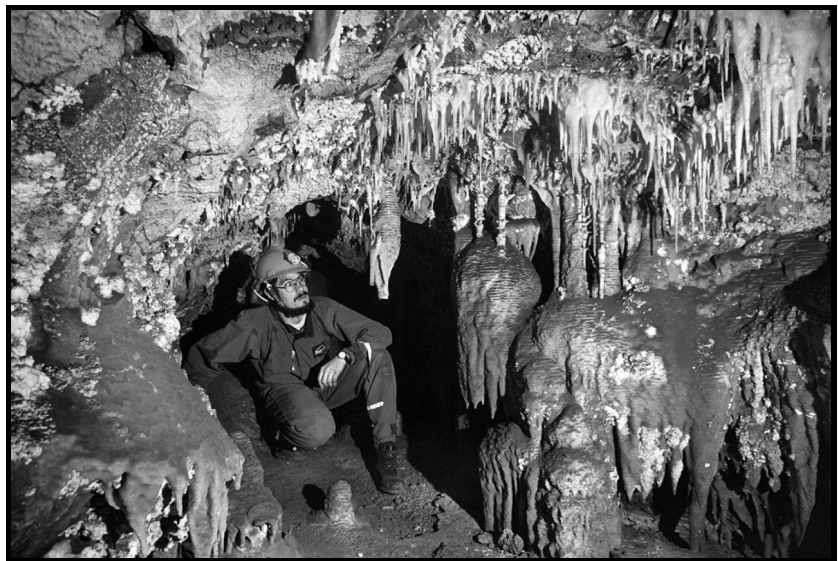
Sigma Cave is located in the most south-easterly portion of the Wombeyan Caves Reserve, very close to the eastern boundary of the marble.

I am still studying the geology and mineralogy of Sigma Cave. The aragonite is definitely aragonite (from X-Ray Diffraction) but sad to say any material that gets onto the floor seems to be reverting to calcite.

Geoff McDonnell might be interested to know that the white 'pigeon poo' that occurs here and there in the cave (especially in Iota Grotto) is a mixture of calcite and calcium silicates like Wollastonite. The white chalky stuff in Aragonite Canyon is a mixture of calcite, aragonite, hydromagnesite and a number of phosphates.

During my aragonite studies field work, I drove to Wombeyan to do some mostly surface work on 29th June 2002 (this was also a SUSS trip). I paced out the cave on the surface, and found that where Ohno Drop is (the last drop before Psi Pit and Omega Chamber), there is an amazing change of vegetation associated with this spot on the surface. It is like a jungle, with clematis, blackthorn, acacia and eucalyptus on a steep scree slope of volcanoclastics. The soil is rich, and the scree slope resembles the pleistocene mass-movement slopes such as the one at Hockey Gully to the north of the park. I came across pigs on that trip, too.

Another item of contention is the land ownership. Most of Sigma is under private property, with the entrance up to about Iota Grotto being under the Trust's land. Mike Chalker always notes that the actual boundary is vague; this appears to be the case on the CMA maps, too.



Martin Pfeil in Iota Grotto

Leads in Sigma Cave

The upper and lower entrance routes join in a small chamber which overlooks the main chamber. Looking upwards at the top of this drop one can see a high room but we were unable to get into it. The thought of bringing scaling poles all this way was daunting.

There may be high leads off the 42/Medusa ramp area leading back over the main chamber but it seemed suicidal to push them.

Still in the Medusa Area, Upper Kappa Canyon has a potential lead in the floor if you follow the floor canyon north-westwards. It has a fair bit of dark coralloidal decoration and is small, so a thin person with a clean set of

clothes might find something. Then again it might just end up as a drop into Lower Kappa Canyon but cemented in with flowstone. Either way, you have to walk across fairly nice flowstone and avoid the clay areas.

The leads off Omega Chamber have been pretty well pushed. They seem to be going off the marble and into the igneous rocks, as does the upstream area of Aragonite Canyon. The only tantalising thing is the apparent air and streams reported at times.

Rigging information for Sigma

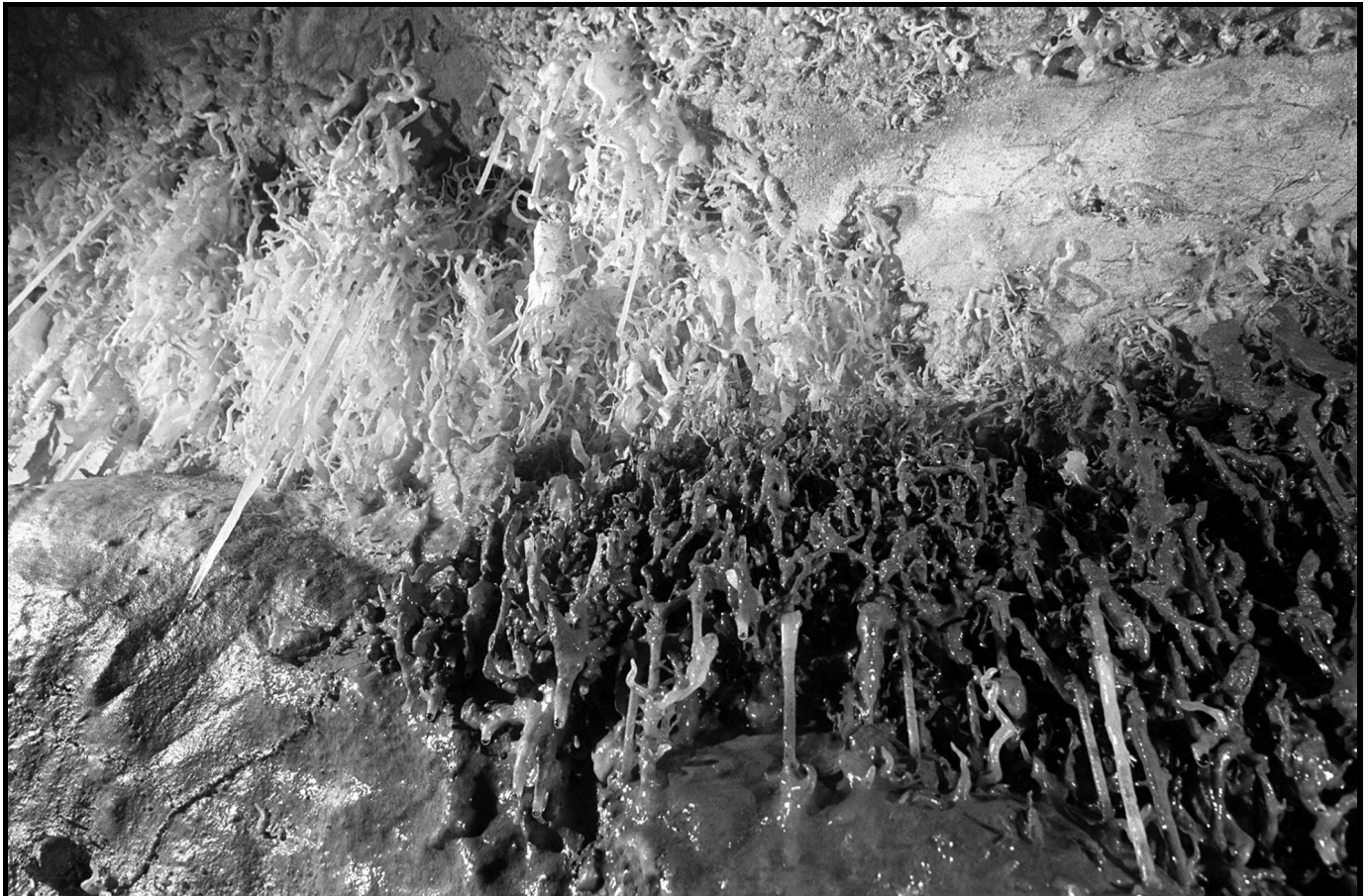
Sigma cave has quite a few short climbs, which mostly need handlines. There are two ladders required; one at the top entrance and one for Ohno drop. All handlines are 50 mm tape:

- 10 metre ladder for top entrance (6 metres would do);
- 5 metre handline for drop near main chamber;
- 6 metre handline for final drop into main chamber to stop people walking on the flowstone;
- 5 metre handline to assist people getting on and off the climb down to the Funnell Room; some people may like a ladder but it really is free climbable;
- 12 metre handline for the Funnell Room. This is to stop the substrate from being destroyed.
- 7 metre handline for Fallaway Drop.
- 5 metre handline, krab and 5 metre ladder for Ohno Drop (to Psi Pit).

If the party goes past the Pointed Finger Chamber they need a change of shoes coming back, because the mud in the creek can be terrible.

If you want to go past Aragonite Canyon you might want another handline, say about 6 m.

If you want to get to the top area of Nu Dome, you need to lasso a stalagmite so another line might be useful. If you want to go to the Medusa Series, the first person up should put about 15 m of handline down for others so that the substrate does not get destroyed. Also there is a lot of flowstone up there so wetsuit booties or socks might be preferable to wearing boots on the flowstone.



Helictites beyond Omega Chamber

Aragonite Canyon, Sigma Cave:

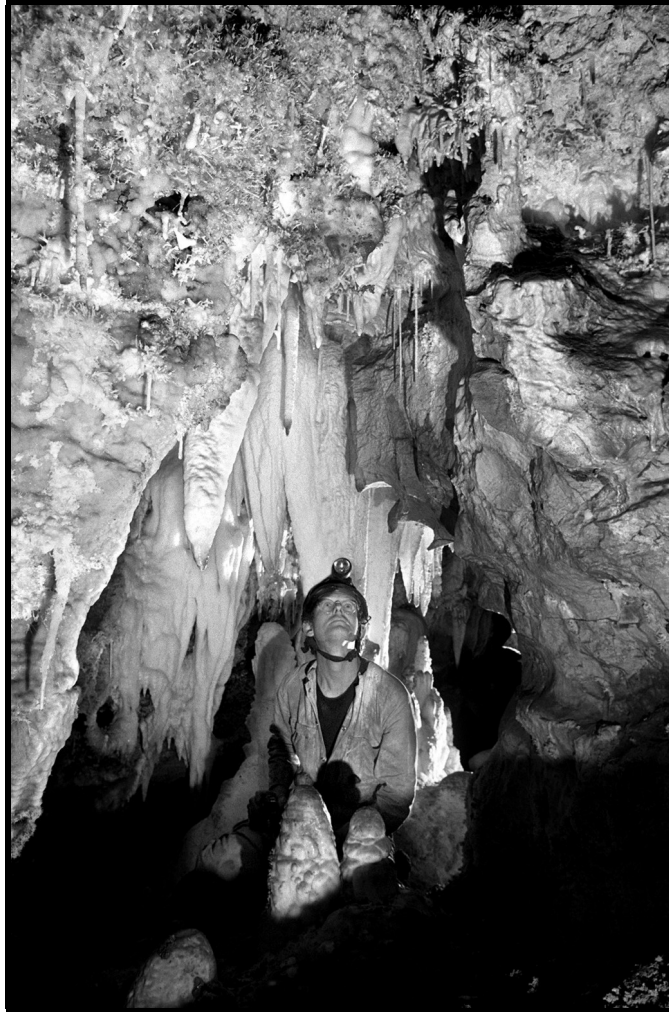


Lots of aragonite



Phil Maynard in Aragonite Canyon

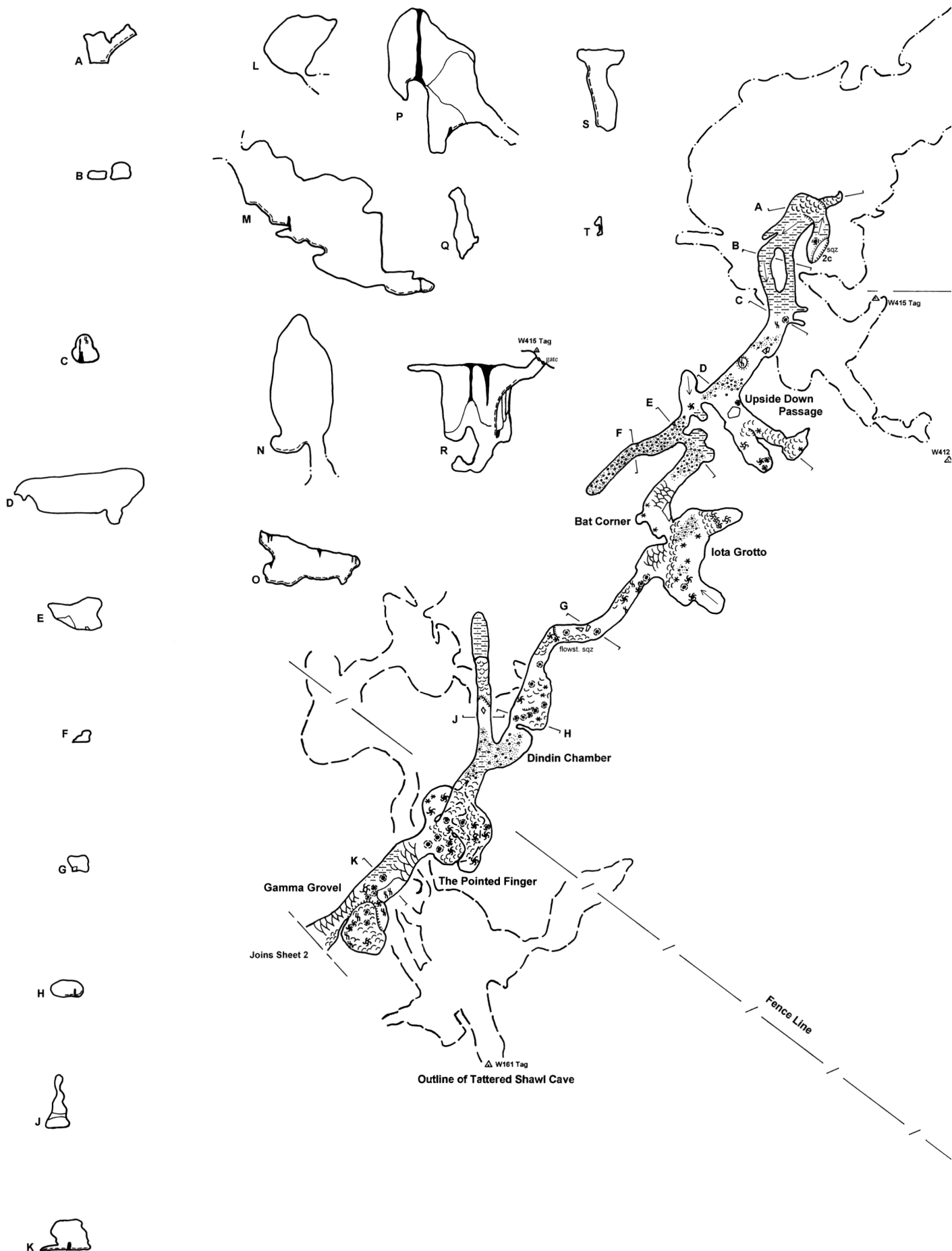
Aragonite Canyon, Sigma Cave:

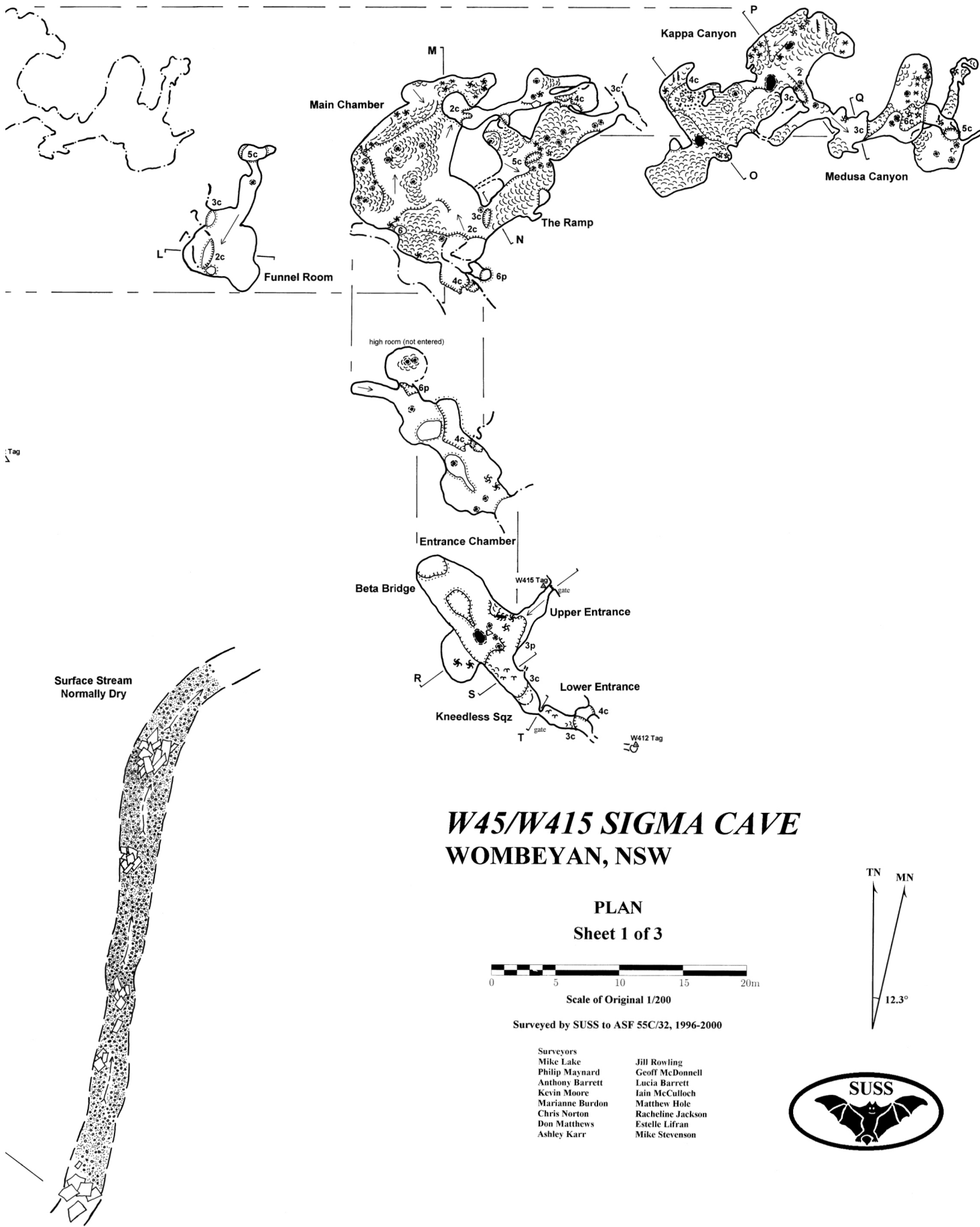


Geoff McDonnell in Aragonite Canyon



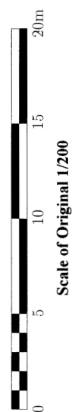
Still More Aragonite





W45/W415 SIGMA CAVE **WOMBEGAN, NSW**

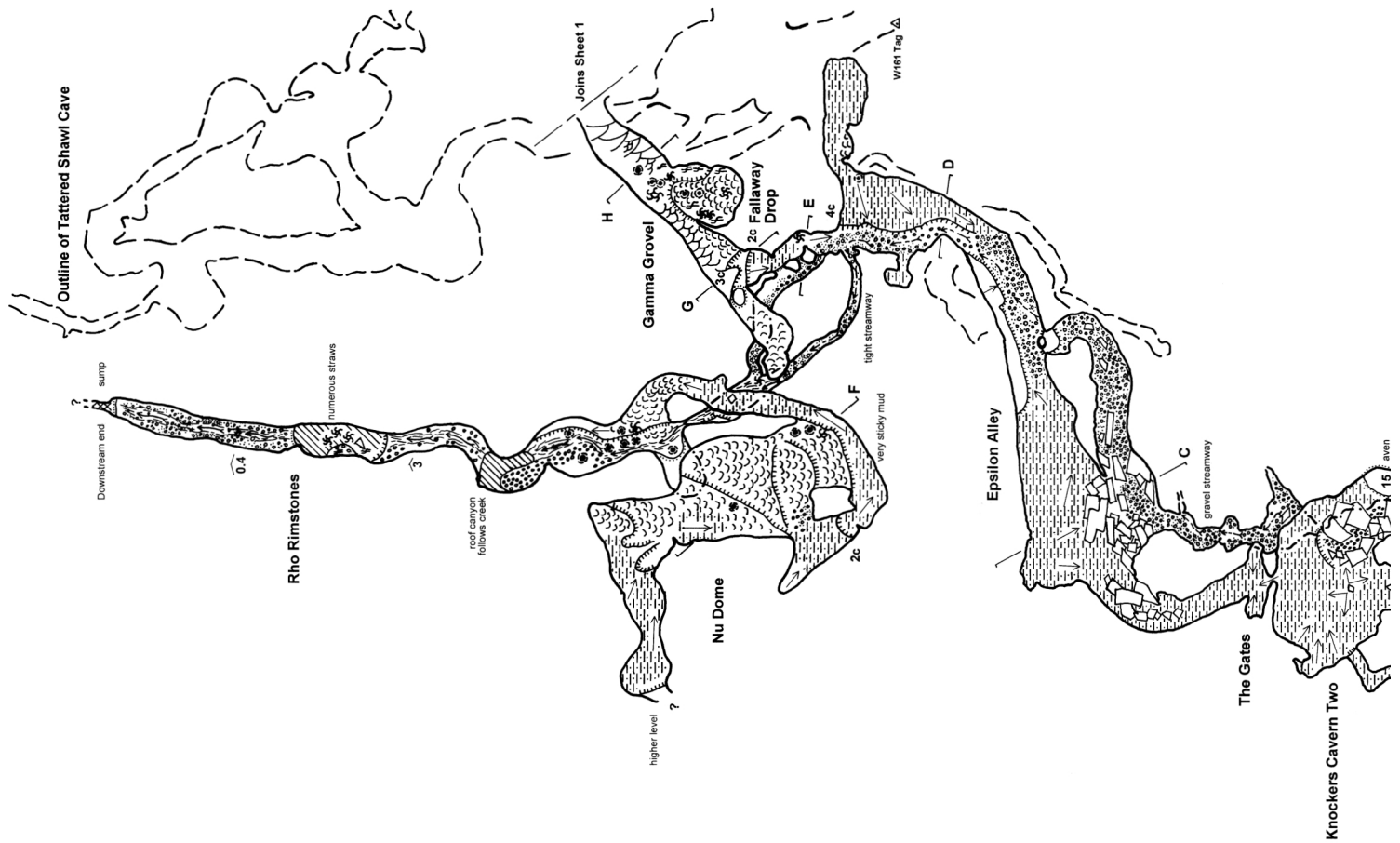
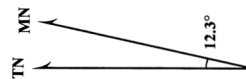
PLAN **Sheet 2 of 3**

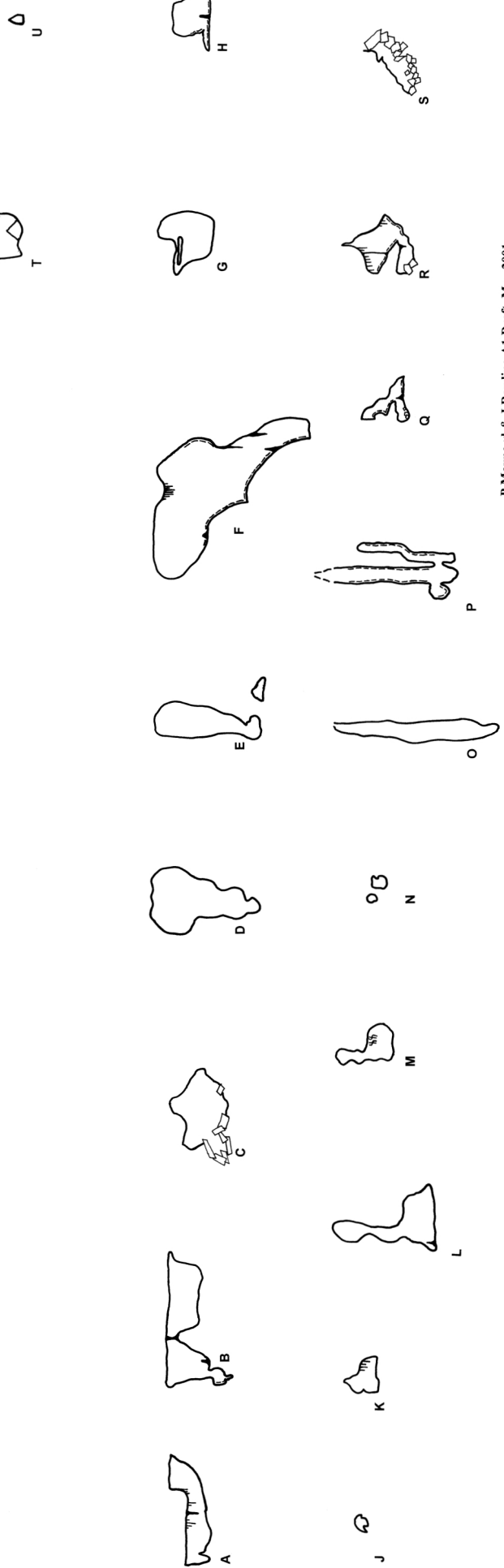
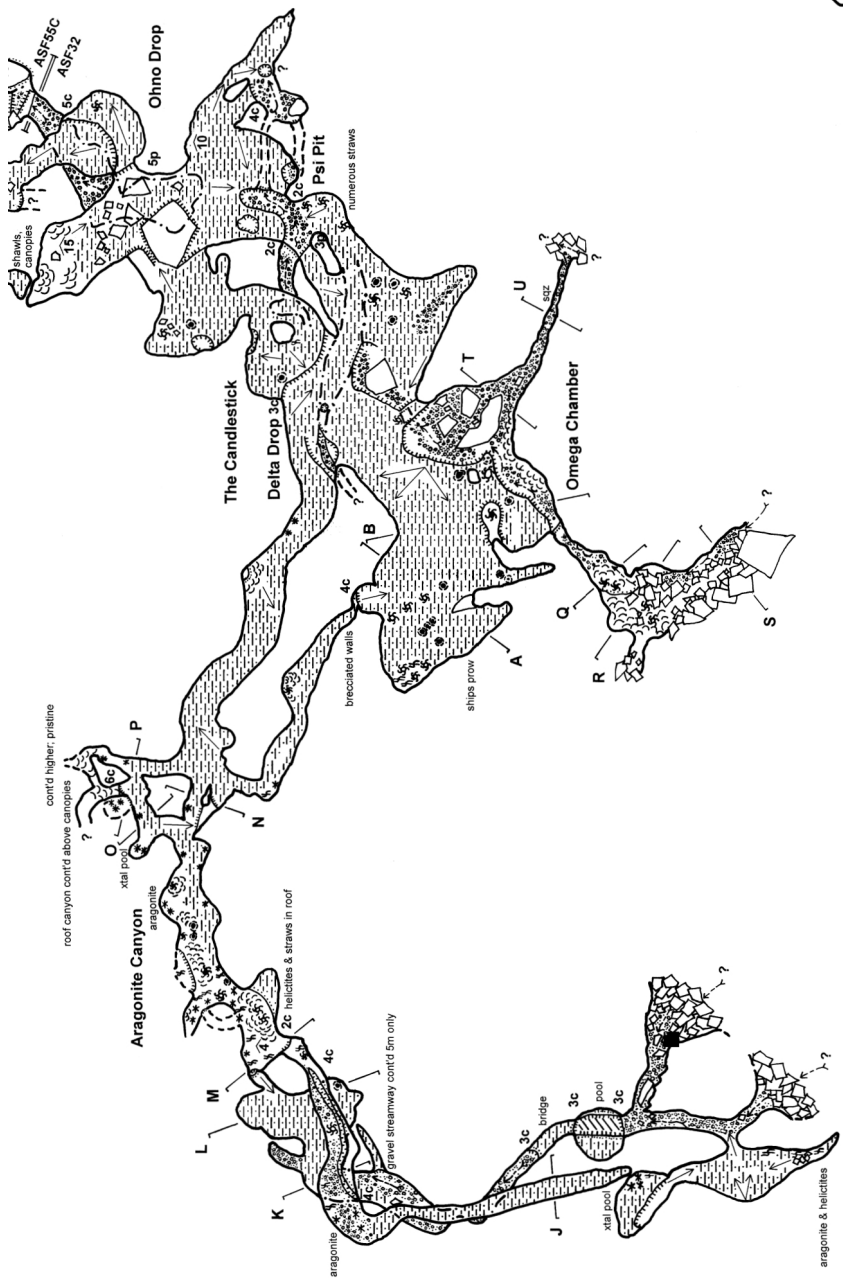


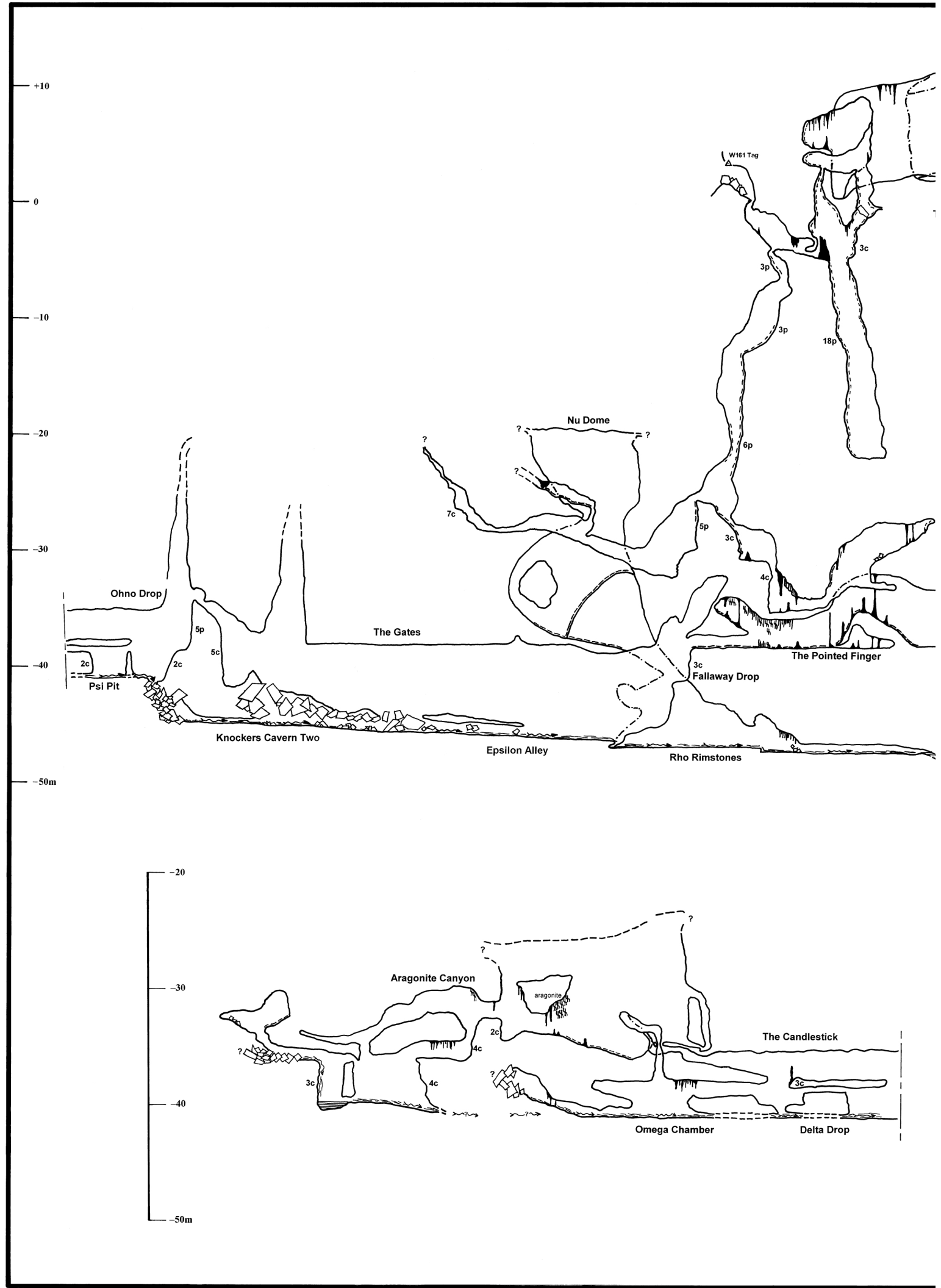
Surveyed by SUSS to ASF 55C/32, 1996-2000

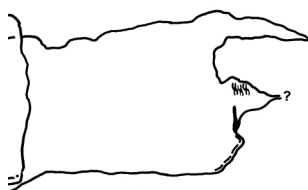
Surveyors
 Mike Lake
 Philip Maynard
 Anthony Barrett
 Kevin Moore
 Marianne Burdon
 Chris Norton
 Don Matthews
 Ashley Karr

Jill Rowling
 Geoff McDonnell
 Linda Barrett
 Ian McCulloch
 Matthew Hole
 Rachelle Jackson
 Estelle Liffman
 Mike Stevenson

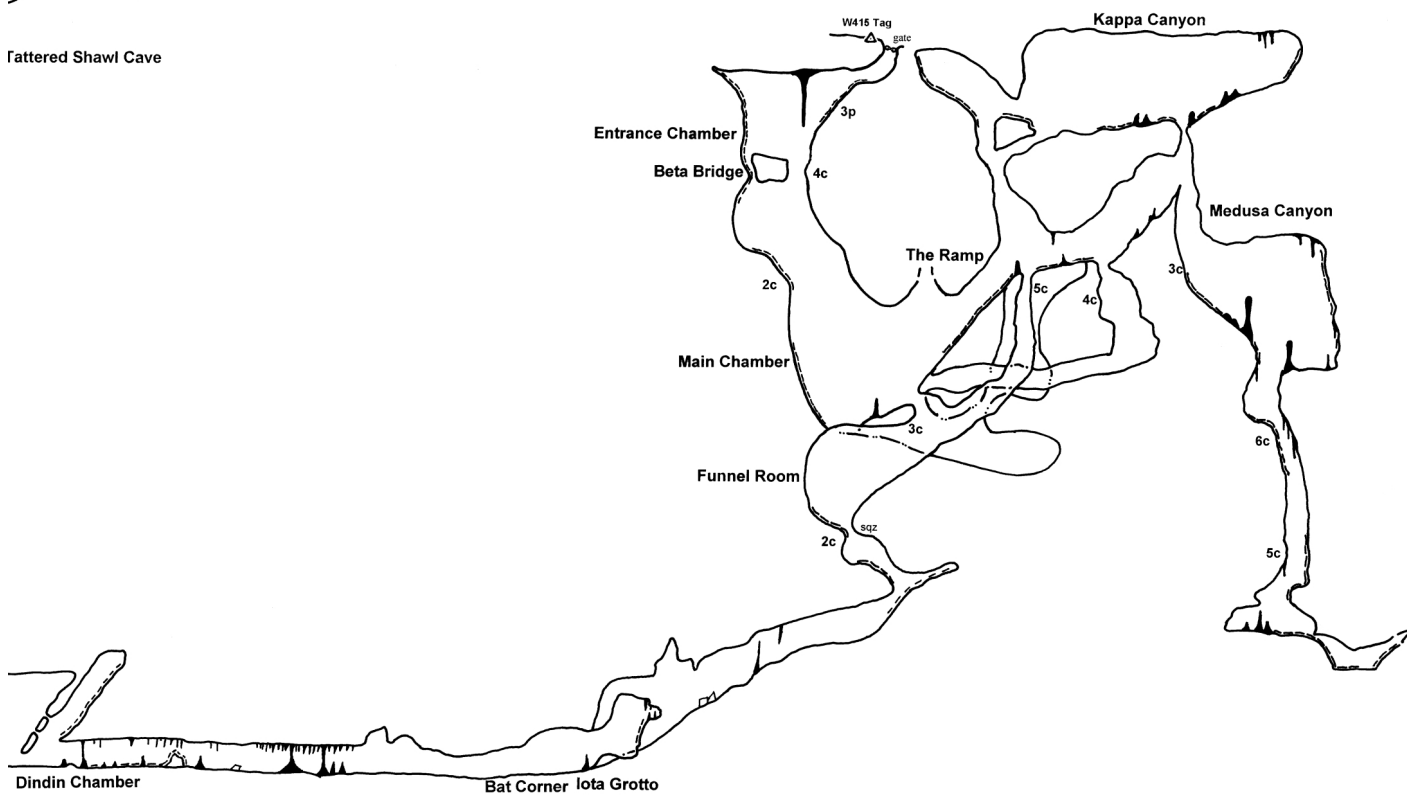








Fattered Shawl Cave



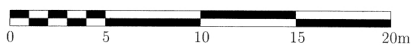
Sump
?



W45/W415 SIGMA CAVE WOMBEYAN, NSW

ELEVATION 315° TRUE

Sheet 3 of 3



Scale of Original 1/200 No Vertical Exaggeration

Surveyed by SUSS to ASF 55C/32, 1996-2000

Surveyors
Mike Lake
Philip Maynard
Anthony Barrett
Kevin Moore
Marianne Burdon
Chris Norton
Don Matthews
Ashley Karr

Jill Rowling
Geoff McDonnell
Lucia Barrett
Iain McCulloch
Matthew Hole
Racheline Jackson
Estelle Lifran
Mike Stevenson

WAY OUT BACK IN WYANBENE

AUGUST 24 – 25, 2002

BY MEGAN PRYKE

Participants: Matt Fischer, Michael Fraser, Felise Azevedo, Megan Pryke

After a few trips of intending to get to the back of Wyanbene yet not getting further than Caesar's Hall, our objective was go directly to the Frustration Lake. No side trips were allowed until the return trip. We managed the climbs over the obstacles past Caesar's Hall to arrive at Anderson's Wall. It was a good thing that Matt came along, as I doubt that I would have liked to try the chimney up. Well, we got there, to see the deep blue-green depths of Frustration Lake and the amazing aragonite with greenish tinges. Of course in usual Wyanbene fashion we were damp and muddy, but it was worth it! A few months before on another SUSS Wyanbene trip with Carol, Michael, Felise, Iain McCulloch and myself explored Barking Dog chamber, the Helictite room and the Gunbarrel Aven. We also discovered a efficient way of negotiating the climb up Cleopatra's Bath – boosting up the smallest caver, being Felise. Felise was keen to repeat the experience on this trip so we had another look.

Rig the Big: The Big Hole

'The Big Hole', one of those apt but not very imaginative names. It is a big hole. Its geology I won't attempt to describe though there is mention on signs that scientists believe that there must be limestone underneath the hole. It is not the sort of thing you expect to find randomly on a hillside. A platform makes for safe viewing by tourists. The hole's dimensions are about 50 m wide at the maximum by 100 m deep, depending on the floor slope.

I found the thought of rigging the Big Hole more daunting than actually doing it. Prior experience in rigging and exposure to pitches helped. As I was on rope, tourists came and went. I was unaware of them as I focused on the task, however for some strange reason they referred to me as a bloke. There is one problem that I had been told about when rigging the Big Hole, that was a rub point that was only 3 – 5 metres from the top. I have been told that most people rig with a rope protector, but I found the idea of 9 mm rope (a 200 metre length of yet-uncut rope) and rub point not the nicest of things to think about while prusiking up 90 metres, hoping the protector was in place. Having done much quality pfaffing on a Big Hole trip in June with Carol, Michael and Felise I knew how to tackle this problem! It was rigged with a large redirection, but with the redirection anchored on both sides of the hole to hold it in place. It took a bit longer to put in place, but it was worth it for the comfort factor.

Matt, Michael and myself completed the whole trip. Michael found his SRT setup not the most efficient on the way up, generally not a good thing to find out with a 100 m prusik!

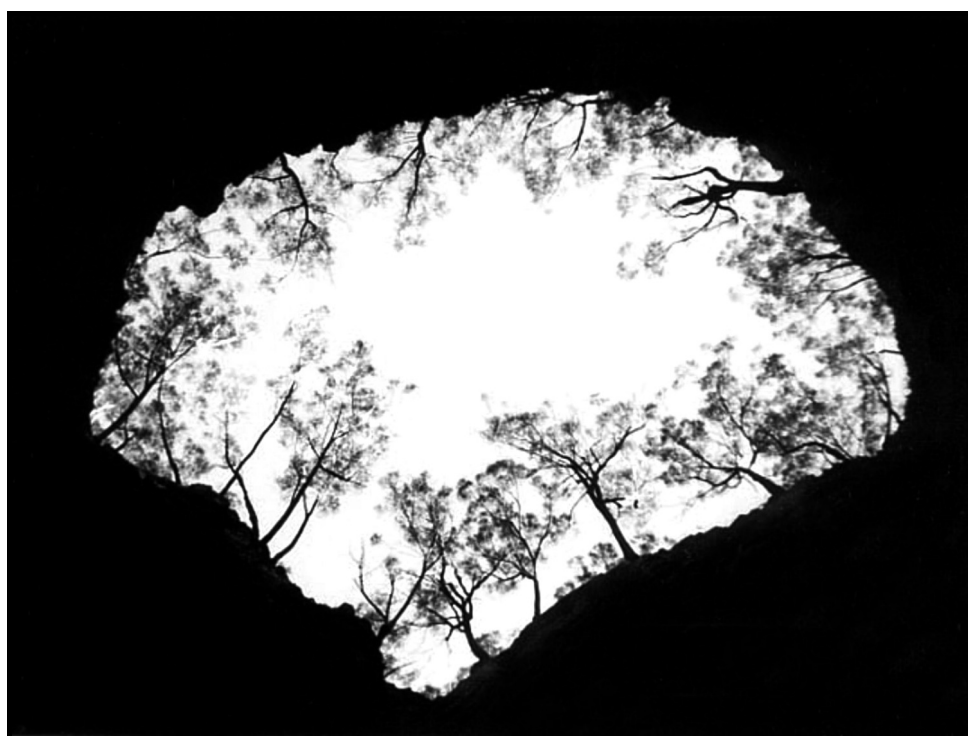


PHOTO GALLERY



Kuratahi
photo Paul Nelson

TRIP LIST: APRIL 2003

SUSS General Meetings are held on the first Thursday of the month at 7:00pm (for a 7.30pm start) in the Common Room of the Holme Building at the University of Sydney. The Holme Building is close to the Parramatta Rd footbridge on the northern side of campus. The Common room is on the first floor (enter from Science Rd).

For updates to this list, check out the SUSS Website: <http://0.7/ee.usyd.edu.au/0.8u/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.

April

5–6 Jenolan. SUSS's most visited spot. Enjoy the delights of Aladdin or help out on the Mammoth Survey. Accommodation in the cosy Cavers Cottage. Contact Don Matthews don.matthews@transport.alstom.com or 8879 1316 (home).

12–13 Colong. A fabulous cave with more passage than you can poke a stick at. Help Alan find more! Contact Alan Pryke meganandalan@optusnet.com.au or at home on 9524 0317.

18–21 Yarangobilly. A chance to find more wonderful caves over the Easter break. Contact Megan Pryke meganandalan@optusnet.com.au or at home on 9524 0317.

23 Committee Meeting. Last meeting of the current committee. Forest Lodge 6pm.

25–27 Canyoning. Three days of canyoning from a base camp on the Newnes Plateau. Contact David Connard dconnard@access.com.au or at home on 9428 1608.

May

1 Annual General Meeting. Vote off the old committee and put a new one in! If you are interested in helping in the club admin and want some more information contact Annalisa 9557 9475 (home) or just turn up!

3–4 Jenolan. Fun and frolic or slog on the survey its your choice! Contact to be advised.

10–11 Fordham Canyon. Experienced abseilers only. Contact Martin Pfeil hpfeil@bigpond.net.au or 9713 9460 (home).

17–18 Wee Jasper. A weekend of Fun, games, laughter, ropes, metal, scouts, mud and batshit. Abseiling equipment required. Contact Chris Norton chris.norton@nigelbowen.com.au or 9959 3613 (home).

24–25 Colong. The last great unexplored area! Contact Alan Pryke meganandalan@optusnet.com.au or at home on 9524 0317.

June

7–9 Church Creek. Contact Matthew Ridley m.ridley@acfr.usyd.edu.au 9489 6675 (home).

14–15 Walli. (Permit pending).

21–22 Bungonia. Visiting some of the vertical caves. You will need to have some SRT exposure (i.e. going down and up rope) for this trip. Contact Megan Pryke meganandalan@optusnet.com.au or at home on 9524 0317.

Christmas/New Year — Two Tasmanian trips:

20–25 December Mole Creek. Some very pretty caves, some vertical experience needed for some caves.

26 Dec–4 Jan 2004 Junee – Florentine caves. Competent SRT cavers only to see these vertical, wet caves. For both trips contact Megan Pryke meganandalan@optusnet.com.au or phone 9524 0317 (home).
