

**BULLETIN** *of the*

**S***ydney*

**U***niversity*

**S***peleological*



**S***ociety*

SUSS BULL.30(1)  
APR-JUN 1990

# SUSS TRIPS AND MEETINGS

- JUNE**
- 9-11 **Jenolan Caves** for the June long weekend. Jill Rowling 8882927h, 4289555w.
- 23-24 **Wyanbene Caves.** Permit pending for this wonderful streamway cave which has not had the pleasure of SUSS visiting it for years. Ron Allum is planning to dive Frustration Lake, be on the push trip of the decade! Big Hole on the Sunday - Francis Chee 5462687h, 6922351uni.
- JULY**
- 29-30 **Cross Country Skiing** trip for uni holidays. Mike Gibian 6602782h, 8588177w
- 1-2
- 30-1 **Timor Caves** with Hills Speleo Club followed by more exploratory caving in the New England area, including **Pigna Barney!** Contact Ian Cooper 682 6790h.
- 2-4
- 5 **SUSS General Meeting.** 7.30pm at Common Room, Holme Building. Wine & Cheese. Hopefully, John Oxley will show slides of his recent caving trip to Ida Bay in Tasmania, or otherwise Ian Cooper will show slides with vivid descriptions of recent megadiscoveries in the Ellis Basin.
- 7-8 Find out at the meeting!
- 9-13 **Tuglow Caves** for a week prior to Jenolan. Come up for the whole time or just part of it. Keir Vaughan-Taylor 5199769h, 6923516uni.
- 14-17 **Jenolan Caves** during Uni Holidays. Igor Jazbec 569 7276.
- 21-22 **Wombeyan Caves** - Jill Rowling 8882927h, 4289555w
- AUGUST**
- 2 **SUSS General Meeting.** 7.30pm at Common Room, Holme Building. Wine & Cheese. Spectacular Slides to be organised
- 11-12 **SUSS SRT & TRIP LEADER TRAINING AT BUNGONIA** Safety Officer, Mike Lake is running this weekend for all cavers who would like to learn SRT, acquire all the skills for leading trips and brushing up on rescues off ropes. A **SUSS First Aid course** is trying to be organised for August, so that in one month you can become a trip leader. Mike Lake 524 5229h, 7634154w
- 17 **Centenary Reception** for the **Sports Union** at the Great Hall - \$25. SU Sports Union, Univ. Sydney 2006.
- 18-19 **Jenolan Caves.** Mark Staraj 042 296760, 2387715w 2377800w.
- SEPTEMBER**
- 6 **SUSS General Meeting.** 7.30pm at Common Room, Holme Building. Wine & Cheese. More slides and caving talk.
- 14 **1990 CAVERS BALL** - Friday night in the Anne Whight Room, Level 1, Manning House 7.30pm, \$25.00. Your chance to dress up and dance and dine the night away with the cavers of Sydney. See the big advert in the SUSS BULL.
- 22-23 **Jenolan Caves.**

The next SUSS bull is being compiled by Sarah Gillis, our hard working editor. She needs articles now! Contact Sarah on 4385662h 2626188w. There are **more trips** being organised all the time. Come to the SUSS meetings to get your updated list, or call the SUSS /OTCCCC caving hotline 5520944 (tone dialling) or otherwise 522 0940

# NEWS AND NOTES

The SUSS Bull. is gratefully subsidised by the University of Sydney Union, and published by the University of Sydney Union Publication Centre.

## OBITUARY- RON WARDROP

Sadly, I read of the death of Ron Wardrop, as reported in the J. Syd. Speleol. Soc. 34(1) p21 in Jan 1990 at the age of about 59 (said to be about 55 but he was about 23 when he left to join SSS). Ron was a member of SUSS in the early fifties (ex Sydney Rockclimbers) until his defection as a founding member of the Sydney Speleological Society in 1953 (due to a clause in the SUSS constitution of the day that limited non-university membership to 25% of total membership). One of his contributions while at SUSS was the discovery and exploration by dinghy of Slug Lake in Mammoth Cave (Wardrop and Tattersall, 1953). Although unknown to most in SUSS, on behalf of the Society I express our condolences to his family and friends.

Mark Staraj.

Ron Wardrop and Les Tattersall (1954): "The Two Lakes in the Mammoth Cave", SUSS J. 2(1) pp17-19.

## NEST GATHERERS OF TIGER CAVE: NATIONAL GEOGRAPHIC 177(1)

The gathering of the nests of swiftlets for sale as the ingredient in Birds' Nest Soup is worth almost US\$50 million annually - 100 imperial tons worth of nests. At the grass roots of the business are the nest gatherers who take incredible risks to get them.

Using a combination of bamboo bundles and liana vines these men scale over 100m in gigantic caves to reach the nests. Fantastic photos bring home these amazing feats where a handheld flaming torch is the only light source and death is frequent even among these expert climbers (no belays of course!). Four times the bamboos crumbled beneath the Geographic team and they were saved by safety harnesses (SRT was being used for some of the photography). One three page spread photo in vertical format shows clearly from the base of the bamboo scaling poles to where they continue past the top of the third page - on it can be seen the gatherers on their way up with one not far from the top. A quick estimate using a man's height as 2m put the visible height of the scaffolding at 75m (!) with the highest climber at 62m !! This article is worth a good long look.

PS. Obviously there is no market for Bonwick scaling poles in South East Asia!

## Mt. ANNE

A recent Speleo Spiel (from Tasmanian Caverneering Club) reports a major extension to yet another long known Junee-Florentine cave, Niagara Pot to a depth of 222m. What this has to do with Mt. Anne is that SUSS's deepest find there, Deep Thought, with a depth of 183m (note: not 187m as in the list reprinted in SUSS Bull. 29(2)) has been pushed out of the Australian deep 20.

Perhaps it is now time to launch the long mooted return expedition to Mt. Anne to tidy up our leads and continue the friendly rivalry with TCC. Perhaps by that time TCC will be tirelessly resurveying Exit Cave for other but related reasons??

Further material from the 1987 Mt. Anne expedition has been slow in coming as its producer, Martin Scott, has been temporarily swamped

by work at Tuglow and New Zealand (and even perhaps the odd Masters thesis?) but hopefully more will be forthcoming. Also on the subject, a letter from Keir Vaughan-Taylor was printed in Australian Geographic 17 in defense of unspecified allegations of an improper negative impact upon the environs of Mt. Anne as a result of the expedition. I thought that he put our case well.

#### JENOLAN: SOUTHERN LIMESTONE

As mentioned in a letter by Troy Magennis of Blue Mts. Speleological Society printed in SUSS Bull. 29(3), BMSC are attempting to collate information on the Southern Limestone preparatory to publishing a book on it. If you have any information that you think is relevant, particularly if it is unpublished, please contact myself - Mark Staraj (ph.(042) 296 760) or at a meeting. The material can be anything - a trip report, map, surface/cave observations, history, fauna/flora, geology, myth, slander or scandal. We are interested in all of it.

Furthermore it is proposed that SUSS assist occasionally with some of the fieldwork. BMSC intend to run SL trips every 3rd weekend of the month and SUSS members who wish to assist are welcome - contact Troy on (02) 632 3258.

#### ERRATA/OMISSIONS AND "ABUSIVE INTRUSIVE"

Unfortunately I made a small error in my article entitled A Peculiarly Good Trip appearing in SUSS Bull. 29(3). On page 8 I typed "quartzite" (a metamorphosed sandstone that is very hard) and "quartz" instead of "quartz porphyry" (a medium grained igneous rock similar to granite in properties and commonly found in igneous intrusions). But furthermore an analysis has been carried out by Ian Cooper and his results appear in this Bulletin, Intrusive Control Of Speleogenesis, Mammoth Cave, Jenolan. On the basis of this very important work I suggested to Ian that he appropriately name the deep rocky chamber beyond Skull and Crossbones, which has been in bad need of a name for many years. I fully endorse his choice. The work itself is exceedingly important in its implications for Northern Limestone geomorphology and a revision of the part played by faulting is required. Hopefully this work will be followed up.

The title itself was erroneously mistyped in the contents as A Particularly Good Trip. And for those that don't know, the mysterious Danielf who authored Operation Tomo Thyme is none other than Danielle Gemenis.

#### SUSS BULLETIN

If you thought the SUSS Bull. has been getting better then you are right. Although erratically produced, three issues last year delivered more than 150 pages - a healthy output. At the same time there has been a concerted effort on quality and presentation that makes it a delight to read, while the publishing costs have been cut by a massive %60 subsidy thanks to a University of Sydney Union initiative.

As something a bit different this year we should see the following in special editions in addition to the regular Bulletins.

1) NZ Expedition Issue: Martin Scott has been busy drawing up maps in the wake of a successful trip. In particular a complete map of Falcon Cave showing the 1/2 km extension to a new depth of -497m found by SUSS. Also details of a new major NZ cave, Exhale Air found by

Kieran McKay, a NZ caver who involved SUSS in the exploration of his find, as well as details of exploration in the Mount Bell karst area. Recent news has it that the Kiwis have been back and pushed it down to find the stream from Tomo Thyme (Keir Vaughan-Taylor, pers. comms.).

## BUNGONIA

On May 19 was the Bungonia open day and a protest that was organised by Kier Vaughan-Taylor and Sue Willis against the degradation of the Gorge due to the mining operations. This had airplay earlier in the year on The Investigators.

Unfortunately I was sick and unable to attend. However I did get to see the ABC News coverage of it and it was given a good run. Special mention should be given to the placard-collage successfully displaying the message "Save Our Gorge" in huge letters across the giant scree and rubble slope running into the canyon from the mine. There was a good turn out from SUSS members. This issue could not receive too much publicity.

Mark Staraj.

## SUSS COMMITTEE MEMBERS

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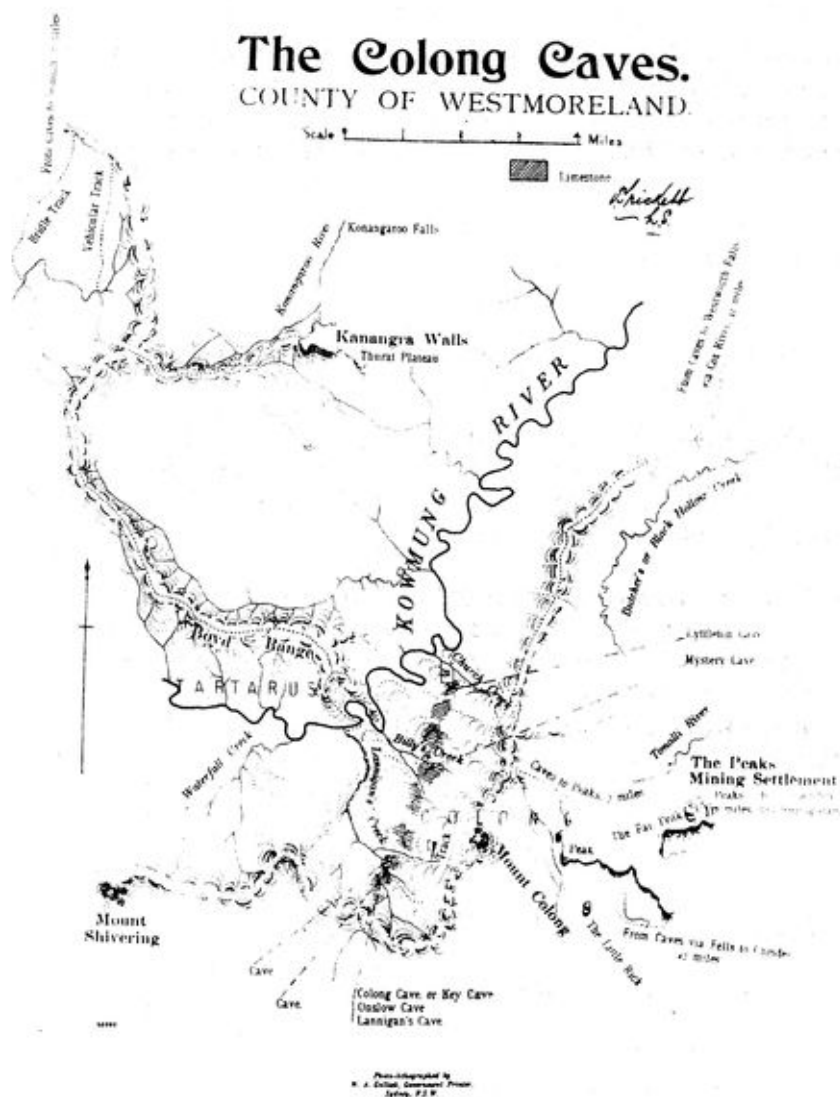
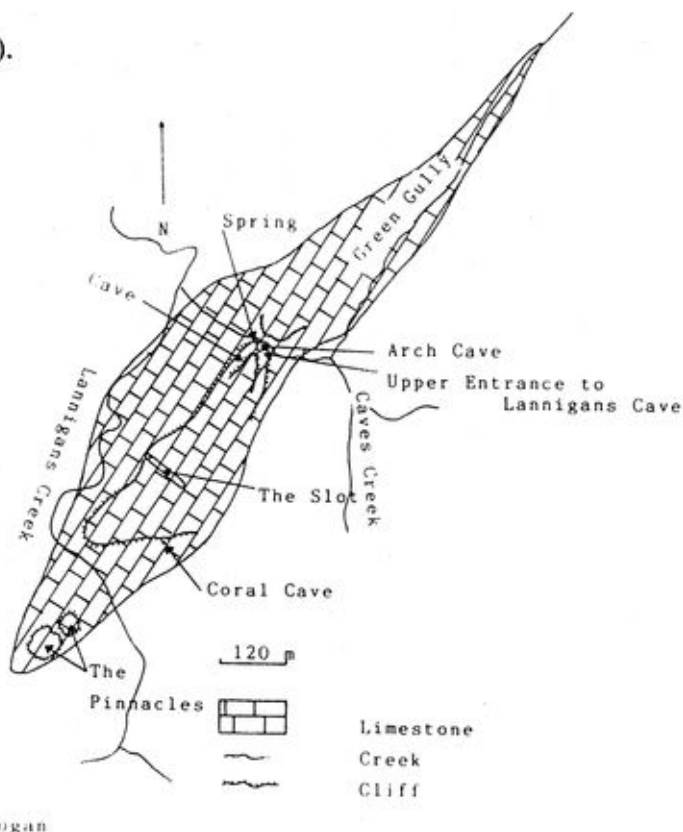


Fig. 2 Limestone at Colong Caves, showing cave locations and major topographic features (Osborne, 1987).



## Coral Cave and other Nomenclature Problems at Colong, Billy's Creek and Church Creek

Colong Caves were probably first reported by Trickett(1900), describing caves at Colong, Billy's Creek and Church Creek. His map of the region shows the three karst areas occurring in a single continuous band of limestone striking NNE (Fig. 1), although more detailed geological mapping subsequently indicates that the karsts occur in separated outcrops. Trickett suggested that the three karst areas be called the Colong Caves after Mt. Colong, a name "derived from the native word 'Colung', signifying the home of the bandicoot".

At Billy's Creek, Trickett describes a small cavern, "200ft. above Billy's Creek on its southern side, ..... which contains an oval and symmetrical bunch of the 'mystery' type of dripstone formation", which is shown on the cover of *Anthodite 2* (1984). The cave was called Mystery Cave by Trickett and today is called Tricketts Mystery Cave (Kates, 1984). Similarly, Trickett positions a "not particularly interesting" cave at Church Creek which was called Lyttleton Cave (Fig. 1).

At Colong, Trickett visited the main Key Cave, Onslow and Lannigan's Cave and also two smaller caves (Fig. 1). Key Cave is today called The Arch, and Onslow and Lannigan's Caves are the entrances to the main Colong Cave. One of the smaller caves is described by Trickett - "A quarter of a mile south of Key Cave is a small cavern ornamented with coral-like formations". This description matches the cave mapped by Armstrong Osborne, Bruce Patterson and I in 1985 and called Coral Cave (Fig. 3). The location of the Coral Cave is shown on Fig. 2, which matches the position of the cave shown on Tricketts map (Fig. 1).

The description of the Coral Cave (CG-6, untagged) in the Australian Karst Index by Peter Wellings (SSS), states that it has a pothole entrance and is a steeply inclined small cave with some good decoration. This description does not match the cave mapped by us, which has a large walk-in entrance with passage that initially slopes downwards, but is essentially a narrow horizontal vadose rift with extensive cave coral development on its walls. I believe the description in the Karst Index is incorrect, and the Coral Cave shown in Fig. 2 & 3 is the cave visited by Trickett(1900) and the only Coral Cave at Colong. A failing of the Karst Index is that frequently no references are given with the description for a cave or a karst area, giving the reader no way to check the information.

Trickett(1900) also visited another cave at Colong - "a small hole, high up in the limestone bluff, leads down into a cavern which contains crystalline reddish and amber tinted dripstone growths." This cave is today called Red Cave (CG-7, untagged), but its locality is unknown, being rumoured to have had its entrance blocked by cavers after its rediscovery in the 1960's. Trickett(1900) describes the location of the cave as being "north of the Key Cave, and about 10 chains (1 chain=22 yards) east of tree broad-arrow over P3". The main caves at Colong are positioned by Trickett about 9 chains SE of marked tree (broad-arrow over P3). We should be able to find the entrance to Red Cave from Trickett's description, and maybe the marked tree is still standing, probably beside Lannigans Creek downstream of its junction with Caves Creek.

Martin Scott

### References

- Kates, G., 1984: Report on Billy's Creek Caves. *Anthodite 2*, 8-17.
- Matthews, P.G.,(ed.)1985: Australian Karst Index 1985. ASF Inc.
- Osborne, R.A.L.O., 1987: Multiple Karstification - The Geological History of Karsts and Caves in NSW. PhD thesis, Univ. Syd. (*unpubl.*).
- Trickett, O., 1900: Report on Colong Caves. *Ann. Rep. Dept. Mines. NSW* 1899.

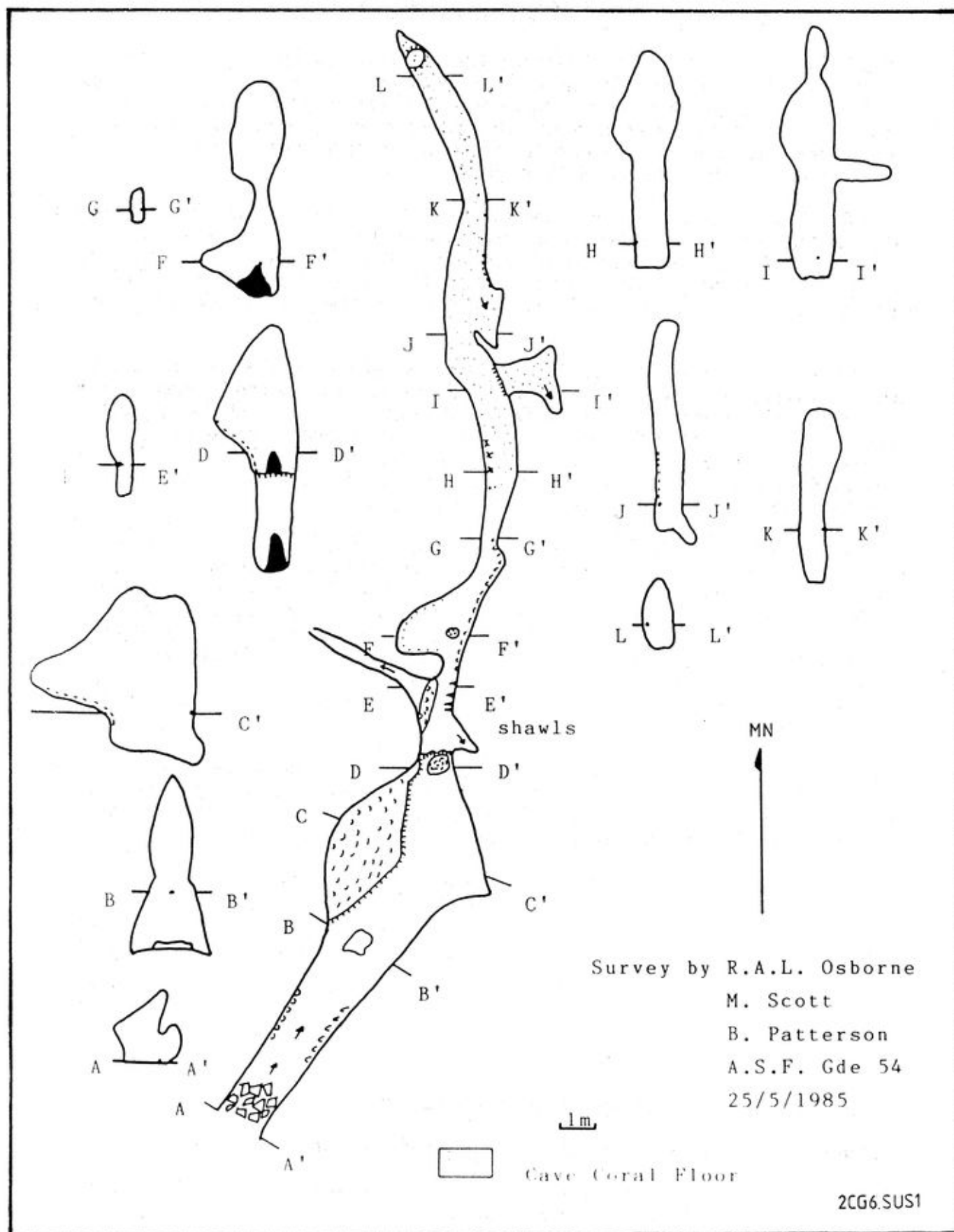


Fig. 3 Coral Cave, Colong Caves, adapted from Osborne(1987).

## Two Dives to Sydney's Sewerage Dispersal Units

The Water Board's solution to Sydney's off shore pollution is to move it further off shore. The controversial \$400,000,000 project involved cutting a tunnel 3 kilometres in length under the ocean floor where holes in the ocean floor were sunk by an oil platform drilling rig. Into the mouth of each hole a concrete cap called a dispersing unit was fitted. The drill hole will later be connected to the subseafloor tunnel and sewage will be pumped through these passages and hidden from the view of tourists and residents.

Our "green" dive team wanted to film one of the dispersal units to provide a television station with material that would help focus attention on problems of our outfall pollution. Officials at the Waterboard were reluctant to grant permission to dive on the site but finally they gave their consent with a number of conditions attached. We had to use their fishing trawler while a Waterboard official was present and we were not to drop anchor inside the dispersal unit zone. These conditions contributed to the fiasco that was to follow.

The Water Board had supplied us with a photocopy of an ocean floor topographical map with the location of one of the shallowest dispersal units marked in pencil with a cross. We planned to track a search pattern across this location and locate the unit on the depth sounder. Once we had a contact we would drop a shot line and marker buoy and then move out of the restricted zone to drop anchor.

There were six divers to go in pairs which gave us three chances at locating the unit. Each diver used independent twin tanks and had the decompression depths and times written on their fins. Additional to this the last divers into the water carried a pair of 250 watt diving lights and a video camera.

Two divers were to swim out to the marker buoy, follow the shot line to the bottom where they would fix a guideline to the shotline anchor. The guideline would then be spooled out 20 meters and an arc searched on a circle surrounding the shot line. By swimming this circle the line should catch on large unnatural obstacles since the ocean floor off North Head is fairly flat.

Our decompression tables provided an absolute maximum of 15 minutes bottom time and we planned to stay for six. If the dispersal unit had not been found the divers would drop the dive reel return back up the shot line and the second pair would go, followed in turn by the

camera team. If the unit was found it was agreed that the divers would inflate a white marker buoy enabling all the remaining divers to enter the water and save some waiting time.

White is not a good colour for a marker on a sea churned with white chop. The beautiful Sydney morning gave way to a stiff westerly that caused the trawler to yaw and pitch in the swell and sea sickness aggravated the problems of the support crew. The boat's chart recorder was not of the precision, divers come to expect from commercial dive boats. It was a moving pen type, solidly built, marked in fathoms and totally incapable of resolving an object 50 meters deep about the size of a Mini Minor. We could only "guestimate" the position of the disperser.

The first pair of divers into the water were Greg and Greg. It had been only five minutes since they splashed backwards over the deck railing into the water and someone on the boat spotted the white buoy. "They've found it !" The remaining divers started kitting up with enthusiasm despite the puzzling fact that the shotline marker buoy where they had descended had disappeared beneath the surface of the water. There was no sign of it. The buoy was connected to the boat with a line so we could find it....but it was odd ?

At fifty five meters Greg and Greg aborted the dive. In the water, visibility was only a hand span but of greater concern was the finning necessary to resist the powerful ingoing current. This is presumably not the current that will carry the effluent away from our coastline. They had not released a white marker and the white buoy sighting must have been a hopeful interpretation of white chop. Although their bottom time was cut short they decided to adhere to the planned decompression stops. This is not overly pleasurable in zero visibility hanging on to a thin shot line.

They ascended to their first deco stop at 9 metres, only to find the buoy, submerged. A check of their depth gauges indicated a rapidly increasing depth. They were being dragged down by the shot line resisting the ingoing current and they were confronted with the options of going back to the bottom, or surrendering the shot line and performing a blind mid water deco stop. They would then inherit the problem of surfacing miles away from the boat, certainly a long way from shore. Instead they fixed a guide line to the sunken buoy and released line from the reel allowing them to ascend to the needed level. Here they hung on against the current trying to maintain correct depth and reluctantly paying out line as was necessary. The shotline marker buoy was still dragging below the surface held under by Greg and Greg and couldn't be seen from the boat.

The divers on the boat plunged into the water expecting the line to lead to the dispersal unit, little realising that they were chasing an ever lengthening piece of string. It was a very long swim through chop and spray made more challenging by the handicap of the lights, cameras and twin tanks. Finally the swimmers encountered two divers finning along at their final 3 meter deco stop wondering why there were so many divers materialising in the middle of nowhere. A great deal of line had been payed out and Greg and Greg were quite pleased that the surface world had located their position. The camera team on the other hand still believed that the two divers were connected to a sewage dispersal unit by a long piece of string that was difficult to find in the poor visibility ! It was a long dive to the three meter mark that day for a confused exchange of information with pencil on the perspex slate. We finally understood what was going on, and then faced retracing the line back to our vessel and then reboarded with the high deck rising and falling in the rolling seas.

One week later we tried again , this time with perfect weather, only three of us and in a properly outfitted dive boat from Fun Dive, equipped with a colour sounder. We were using a shot line again but with a very large buoy on it. We traced a search pattern around the position shown on our map but were dismayed by the lack of a reassuring lump shown on the sounder screen. We began circling and increasing the radius finally discovering a contact completely in the opposite direction to the bearing shown on our Water Board map. They must have made a trigonometrical mistake !

There was only one chance this time and we allowed ourselves six minutes bottom time. We dropped over the edge of the boat fully equipped for filming. Fortunately the visibility was reasonable. Unfortunately we found the bottom a long way down at 65 meters. There was no disperser in sight. I tied off the guide reel line to the shot line, headed along an arbitrary compass bearing across a flat and fairly barren surface. Three minutes later there it was, like a very large rook off a chess board, battlements circling the roof and bits of paraphernalia inside. Not like in the advertisements clean and gleaming but instead concrete, covered with barnacles and algae. The others were close behind me following the line and I turned the video lights on signalling success.

There are a number of uncertainties in my mind regarding the effectiveness of our new sewage dispersal system. The dive clearly illustrates the existence of a powerful ingoing current which in certain weather conditions will carry the effluent right back against the coastline. Since the dive I have noticed the site where the sewage presently rises immediately off North Head.

There is a clear line of fresh blue water separating the shoreline from the brown and this I believe is the inward going current running along the sea floor and rising as it meets shore.

It is possible to convert effluent to fertilisers but unfortunately the real problem of effluent is not human waste but toxic waste. Sydney's industrial complexes have expanded over the years and increased toxic dumping into the sewerage system. The North head toxic waste problem is only minor compared to Malabar. Here the same design of tunnels and dispersal units have also been installed but here in Sydney's industrial wonderland the toxic waste problem can only be described as a nightmare.

The Water Board is presently using the Red Morwong for monitoring toxic build up in fish. Recently they reported there was "a reasonable" level of heavy metal contamination, about 10% above the allowable limit and gave them a clean bill of health. However they did not report that the same fish specimens show 300 times the allowable limit of pesticides and in particular a pesticide banned in many countries, hexochlorobenzine. This week the newspapers reported that an independent analysis of fish samples confirms this finding.

....and so I shudder and worry to see fishermen off North Head, along the cliffs of Malabar or with their line dipped in the beautiful waters of Botany Bay. Perhaps its better than swimming in it.

## Five Dives to the X Window.

Louise Devine, Ian Houghton, Steve Keenleyside, Pat Larkin, Simon McCartney, Keir Vaughan-Taylor, Greg Wilkins,

The upstream spider sump was dived first by Ron Allum shortly after the cave was first discovered. He was apparently prevented from upstream progress by a slot too narrow to pass through with a vast quantity of water being forced at high pressure through the slot. The stories about what Ron found on this trip grew over the years and the depth at which he found the slot descended more each year and the pressure of the water grew more dramatic. Well it's not like SUSS to let the truth get in the way of a good story especially when the truth is on the other side of three squeezes, a sump duck and submerged at the bottom of an underground river. The story gets better with every telling. Nevertheless interest in this sump was not high since it seemed a lost cause.

It was not until one night during a pub discussion that someone mentioned that Ron had apparently dived upstream from where the water emerges from the northern rockpile. If you proceed actually through the rockpile first passing through an easy squeeze there is a small chamber with a beautiful crystal pool of water clearly, very deep and possibly bypassing the dreaded slot.

We set off for the sump dragging gear in cave packs all the way to the distant sump. Pirates Delight the most famous of all squeezes was first widened to facilitate movement of gear on a trip specifically for the purpose. On a previous occasion I had spent half an hour stuck in there discovering that the squeeze that I knew I could easily pass had filled somewhat with sediment and was now not so easily passable.

It rained and rained and rained at Jenolan prior to the diving trip. Each planned diving trip was postponed due to the floods and inclement weather but finally the rain eased and it appeared as though we had found a window in the weather.

Pirates delight was full of water and even more unfortunately it wasn't completely full. There was enough air in the squeeze to nose sniff through. Steve groaned with despair when he saw the sump (err squeeze) and we, following behind did not realise how much water was in it and called out to Steve urging him on calling him a wimp. With this spur in his ego he emerged himself into the brown goop, totally emerging himself and kissing the roof for the life-giving air...and crossed to the other side.....Now, we were all committed. Each person soaked up some of the water and carried it through the other side. I was the last person on every trip and therefore enjoyed slightly lower water levels.

More challenging than the squeeze was the steeply inclined flattener rising to the Bus Stop Chamber. After two or three people had caterpillared up this tube, the water enriched overalls dribbled over the mud floor lubricating it so effectively that the friction necessary to push up the steep slope no longer existed and even pulling hard on the rope was no help in the tight confines of the tube. It seemed as though the mud eliminated the traction to fight your way up and yet somehow retained the cohesive qualities adhering to our overalls and retraining what progress we might make. It was ridiculous !

The gear had to be hauled around the bend in Pirates delight and up the slippery slope. The tanks and packs were attached part way along the line and when the okay shout was heard at the far end, the gear was towed down into the slop. Steve and Pat stationed themselves part

way along the tunnels and helped manoeuvre the lumpy artifacts round obstacles and constrictions. As the packs and gear scraped up the ramp this distributed even more water over the ever more slippery ramp. From difficulty to advantage, Steve turned our slippery problem into a popular mode of transport. We merely hung onto the gear rope and like our gear we were hauled by express Steve power down the roller coaster on to the end of the gear line and hauled elevator style up to the bus stop. The last person along the cable car (me) enjoyed the combined power of the entire group interested in giving the last freeloader a really fast ride.

From the Bus Stop onwards we formed a human chain passing gear through the rock pile. The effort of lifting and hauling, masked the totally disgusting feeling of our soggy wet overalls. With mud through our hair and every possible bodily cranny we were comforted by the thought that once we arrived at the streamway we could take our overalls off and put on nice warm wet suits and jump in the freezing water.

For those of you that have not seen the upstream spider streamway, it is classically similar to the Imperial. Smooth limestone floor covered with gravel and a high vaulted roof. Most of Imperial is streamway like in Spider and then there is a phreatic sump that dips down and then back up again to yet more streamway. When you head upstream in Spider you encounter Pike Lake where there is a short duck-under leading to a continuation of the streamway. This shortly afterwards end in a rockpile which is so far unpenetrated. The nature of the Imperial streamway is high walkthrough passage broken by short sumps dipping to about 15 meters then back to more walkthrough passage. The pub time discussions has surmised that it was not unreasonable to expect this nature to continue but events have shown this hopeful surmise to be completely incorrect.

The upstream spider sump is about two meters square, rectangular in shape with clear emerald water descending as far as the penetration of a cave light. The limestone is clean and smooth on all sides with a geological fault running through the rock on each side of the well like sump. The fault signals a complete change in the streamways character. Below the surface the sump is like a skylight in the roof of a canyon running along the fault with its bottom 15 meters below the surface. Here an obvious current emerges from a horizontal slot in the limestone.

The floor is gravel and easily dug despite the furious current that forces its way through this constriction. The slot is composed of solid limestone too small to pass through with a tank. Through the slot clearly the passage continues onwards. We dubbed this hole the X Window because of the mystery that lies on the other side. Passage through the slot may be obtained

with a little work with a shovel but the water is full on into your face possible running at 12 knots. Digging into the floor the water picks all the gravel up off the shovel and carries it away behind silting out the canyon to blind oblivion. The powerful current is in fact an advantage for digging since any siltation is immediately swept away and the visibility in front of the X Window remains. Simon spent the entire first trip digging but did not feel it was prudent to proceed through the X window. There was still some work in front of us.

On the second trip I dug away at the gravel until I was nearly at the one third air consumption. I decide to squeeze through as far as I could to see as much as I could before leaving. I was able to get through the X Window far enough that my head poked through the hole on the other side but it was quite apparent that more digging was required. On this trip I wasn't going any further but at least I caught a restricted view of the other side. The tunnel/chamber ahead is large and disappears off into the distance. The X Window is a balcony overlooking a field of gravel that spreads out and down into the room beyond. All of the river flow carried by the Hairy Diprotodon forces it way up the gravel and through the X Window. There would be at least one more digging trip before we could explore beyond.

I wanted to run another trip before leaving for New Zealand. It seemed to me that one more visit would see the X window problem solved. This third trip found Pirates Delight with marginally less water and just as wet and awful. There had been yet more rain at Jenolan and we discovered the river must have risen considerably. We planted a small cylinder of reserve air at the bottom of the sump where we discovered that all of the gravel that had been carefully extracted from the X Window had been replaced. Yet again we failed to make the X Window negotiation safe enough for a long penetration dive despite independent dives by both Simon and myself working at clearing the floor.

For the fourth attempt we carried two pairs of the new Catalina cylinders to the sump. Each tank when full contains 90 cubic foot of air yet are marginally larger than the old 62s. This gives us a greater working time in the sump and time to explore whatever lies beyond. This trip the river level was up and the visibility in the water maybe a meter. Greg alone dropped to the bottom of the sump to retrieve some gear that had been left there and also to get a first hand look at what this X Window was all about . He returned after a much longer period of time than I expected. He had found the gear at the end of the guideline but buried under a pile of gravel that had been swept through the X Window. He was obliged to dig it all out whilst buffeted by an extreme turbulence. He returned to the surface dropped the reg from his mouth "Now I see what the excitement is all about on this hole." We decided that it would be a second

class attempt to proceed under the prevailing conditions and instead of diving left the sump chamber stacked with the full tanks and scuba gear ready to go on the next trip, and returned to the hut and its warm cups of coffee.

So the X Window still holds its secret but the sump is loaded and ready for a penetration dive as soon as the water level drops. We merely have to journey back and jump in the water. Logistically we can improve gear transport times by running trips to run the gear only and a separate trip to dive. The groups carrying gear should be smaller with less gear to carry and maybe even multiple groups separated by at least three to four hours. The distance to the sump and back is too far to run as a single event. The diving itself is demanding and by the time you get to the sump a sizable proportion of energy has been burned lifting dragging and carrying. We may need to run many more trips if this continues and the main problem facing us is logistics.

Stay tuned .....

Keir Vaughan-Taylor.

## Yet Another Attempt to Open the X Window.

16th March 1990.

This weekend we make another attempt at the X Window and on the following day help Ron Allum get his gear to Slug Lake to investigate the disappearance of Lower River from Mammoth. This is the site where we hope to eventually come out.

It seems to me there is good chance of a Mammoth and Spider connection. It is difficult to say how long it will take especially with the incessant rain, flooding and busy schedules of all the divers, it could take years. In anticipation of the connection a large bottle of Malt Whiskey has been deposited with the Guides and labelled with the instructions, "To Be Opened upon the Crossing of The Mammothodon Connection".

Within the confines of the chamber atop the X Window sump I discovered to my dismay that since leaving the bottles behind on the last journey, half the air had emptied from one of my tanks and the other was almost completely empty. I still don't know how this may have happened but I will close the valves off much more tightly in future. This time only Simon would be able to dive. One has to be philosophical about these moments and

nevertheless I accompanied him to the X Window and watched as he crossed to the other side to explore beyond. Before proceeding very far he dug away at the gravel slope from the inside with the advantage of a slope to pull the gravel down. Although this increased the ease of passing through the X Window the digging billowed silt clouds through the portal where I sat watching and Simon was left to fend for himself as his form disappeared behind the wall. Within the large chamber where Simon worked the visibility also reduced to zero. Mounds of gravel pulled down the slope cascaded to the floor and the silt clouds filled the chamber. Despite the considerable water flow Simon's chamber did not clear soon enough to confirm or deny if there was a surface. Simon chose to follow the floor against the water flow blind and with upstream progress the water cleared again. At 30 meters depth the passage was blocked by yet another X Window with the whole of the Jenolan River forcing through it. Another digging session began and X Window 2 was rapidly widened. The cost of digging is high air consumption and soon Simon had to return.

## Dive Slug Lake, Mammoth Cave, Jenolan

Ron Allum 7th March 1990.

The objective of this dive trip was to formalise my previous 3 dives by way of fixing permanent lines into the sump and carrying out a survey of the previously dived passage, exploration was also on the agenda however was the lowest priority.

### History of my past 3 dives into Slug Lake:

Dive 1 - was a check out dive.

Using only small tanks and soon after entering the crystal clear water of Slug Lake silty flowing water could be seen entering from the left and disappearing down and to the right, this down stream passage was followed to a depth of - 27mtrs. As visibility was poor and getting worse as the silt that I'm causing is now starting to overtake myself and having consumed a reasonable quantity of my available air, I returned elated to tell the others of the flowing water (which was concluded to be Lower River) and that the passage continues.

Dive 2 - to continue exploration downstream.

Care was taken to cross Lower River on route to Slug Lake without silting the water as this was believed to be the cause of the silty water on dive 1, it was also intended to descend fast to stay ahead of the silt. The dive continued past that point reached on dive 1 it soon reaching a rocky obstruction, this was past reasonably comfortably using back mounted tanks and continued in much larger passage. The right hand wall was followed and an ascent followed to another air chamber, dive gear was removed however exploration was limited to a fairly small area as it seemed blocked by rock collapse emanating from the ceiling. On the return dive, although now quite silted it in fact was becoming clearer as I reached again -27 meters. Here it was observed that the water was flowing to the right and down a prominent passage. I avoided the temptation so as not to prolong this repetitive deep dive already requiring decompression and returned to Slug Lake.

Dive 3 - to take the prominent passage.

Peter Roger's joined myself on this dive, again the aim was to descend fast keeping ahead of the silt but on this occasion to take the prominent passage to the left left and continue exploration downstream. I continued descent to -40 meters (by max depth indication on my depth gauge) here the gravel floor of the passage started to boil as the water gained speed to pass around my body which was restricting the passage size. I backed out and turned around before the force become too great, various attempts to cut and secure the guideline went astray resulting in a bit of a mess, as it turned out the line was not cut. Peter had past the -27 meter restriction (after having taken off his dive tanks to do so) and met myself at about -30 meters. We sorted the loose line back onto the reel and then turned around to exit the dive. During deco we had a quick look upstream however found the passage to be too low to negotiate with our back mounted tanks. Nitrogen narcosis, brought on by my rapid descent in the chilly water certainly compounded the manual tasks that were necessary on this dive.

Dive 4 -17th March 90.

As mentioned earlier the objective of this dive trip was to formalise my previous 3 dives by way of fixing permanent lines into the sump and carrying out a survey of the previously dived passage. We entered Mammoth Cave with 3 caving sacs and 2 by 102 cubic ft cylinders helped by Keir, Carol, Steve and Robyn. We managed a successful crossing of Lower River

despite being a climbing rope short to assist those cavers with short legs and to aid in getting the gear across. The sump was reached soon after and was up in level by possibly 2 to 3 meters, this was some what of a concern as the flow at Lower River did not appear to be much higher (if at all) than on my previous dive attempts.

Visibility wasn't wonderful and expecting that I would be away for over an hour I proceeded at a more normal descent rate. I reached the -30 meter restriction (previously -27 meter) then proceeded along the right hand wall to continue through to the air chamber. After a few more meters the passage was again restricted this time by a gravel floor, despite trying the complete perimeter of this passage I was able to identify the best way through but unable to continue. The line was tied off, further searching failed to find the prominent passage left (although could still be beyond the restriction, but I'm not so sure). I returned completing a survey on the way out using divers compass, depth gauge, and my dive line knotted at 3 meter intervals. Upstream was also entered, and after about 10 meters it also was restricted by a gravel floor (as was encountered on the dive 3).

A change to the hydrography must have occurred to result in the back up of water level at Slug Lake as experienced on dive 4 and given the same apparent flow experienced previously. A possible scenario is that the prominent passage (described in dive 2 and dived in dive 3). is now full of gravel and that the water is now flowing via the passage leading to the air chamber (entered on dive 2) and possibly being held back trying to percolate through a rockpile that lay beneath the dry floor of that chamber. The flow is maintaining a passage for the water to pass at -30 meters but unfortunately not enough to keep the gravel clear thereby causing a new restriction. On previous dives back mounted tanks have been used as these are more comfortable especially for deep diving when large buoyancy volumes are necessary, this however has not been the limiting factor stopping exploration on dives 1, 2, or 3. One good omen that has come to light is that the way on to Spider Cave may be via the shallower passage leading towards the air chamber rather than the deeper passage where depths could well exceed -40 meters. Whilst the current situation continues, side mounts will be required to continue exploration down-stream Lower River from Slug lake.

Ron Allum,  
12th April 90.

# SCALING POLES IN JUBILEE CAVE

Present: Greg Wilkins (T.L.), Brendon Hyde, Mark Staraj, Jacob Michelson, (someone else?).

Date: 13th-14th June 1987.

## 1. Introduction

As Pat Larkin has now published the maps of Bell Chamber and Far Country, I feel compelled to report on a follow up trip lead supposedly by Greg Wilkins but since the aim was to check out avens in the Bell Chamber area surveyed just a month beforehand, I had to show the way as I was the only one to have been there. This report is especially necessary in view of the thorough job being done on the Jenolan Show Cave survey.

## 2. The Adventure

We made very quick time to Bell Chamber (see map). The side chamber was checked first. The two avens shown on the map comprise the entry and exit points of a large roof canyon. Scaling poles up a rift gave access to the easternmost of these. Jacob ascended and soon called for backup, and up I went. At the top an impressive tube of 1.5m diameter ascended steeply at about 30° for approximately 8m. At this point it enters either a small chamber or the base of a shaft. This could not be determined as a large rock was perched there at the entrance with only enough room to fit an arm past - this made viewing beyond difficult. By climbing in the rift Jacob was able to report that the other aven did not go at all. Estimated height gained is 9m.

Moving back to Bell Chamber proper we proceeded to check out the two avens here. After 20 comical minutes of staggering all over the chamber holding on to the base of the 5m pole while it bumped off dips in the ceiling, then bounced off walls while we fell over rocks and each other (it really was very funny but most frustrating), we finally positioned it into the more central of the two avens. It only just reached and since it was by necessity nearly vertical then an appreciable bend in the pole gave Greg much to think about. It needed to be longer to give Greg a chance of getting off into the aven but by all accounts the chances looked slim for any passage.

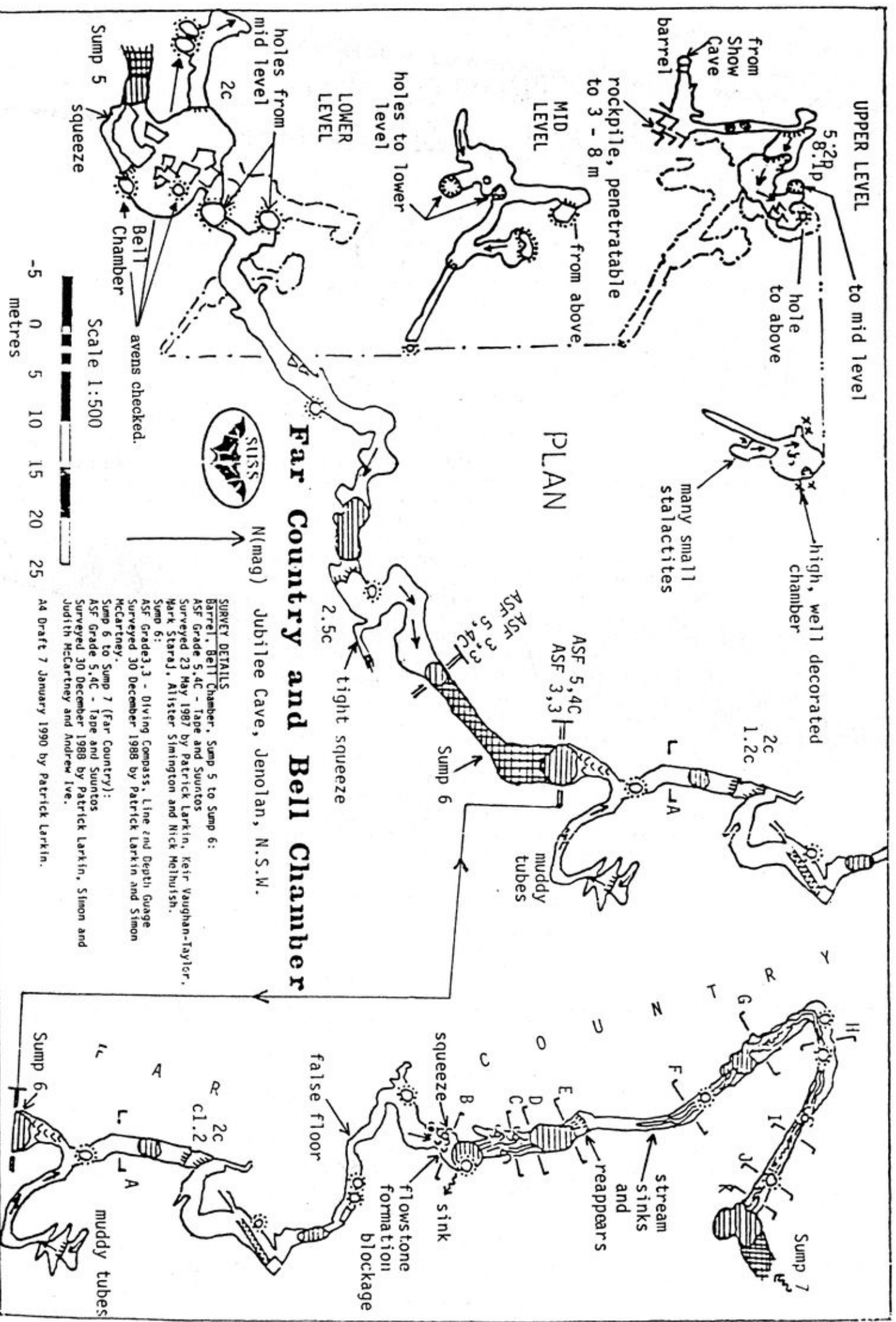
Lastly I climbed the aven against the wall where a passage leads off from the top of a ledge about 4m up. The passage blocks off after only a few metres without leaving sight of Bell Chamber.

## 3. Prospects

The large tube and chamber serve promise of substantial cave in this area. Unfortunately the rock prevents access (we did not try to push it, being rather freaked at the time by its size and position) and is unlikely to be dislodged. However a good possibility of reaching this area is by pushing the rockpile in the vicinity of the drum as it it heads in the right direction and does not appear to be much more than 15-20m away.

One aven still remains to be looked at on the mid level. I have not seen it and so cannot coment on whether it is worthy of scaling poles.

4. References Patrick Larkin and Simon McCartney (1990): "Far Country", SUSS Bull. 29(3) ppl4-21.



# INTRUSIVE CONTROL OF SPELEOGENESIS, MAMMOTH CAVE, JENOLAN.

Ian Cooper

The following is based on observations made on a recent trip in Mammoth Cave accompanied by Mark Staraj and Danielle Gemenis. This article is primarily a description of features observed and will hopefully encourage people to record any similar observations.

## 1. Deep Rocky Chamber Between Skull and Crossbones and Snakes Gut.

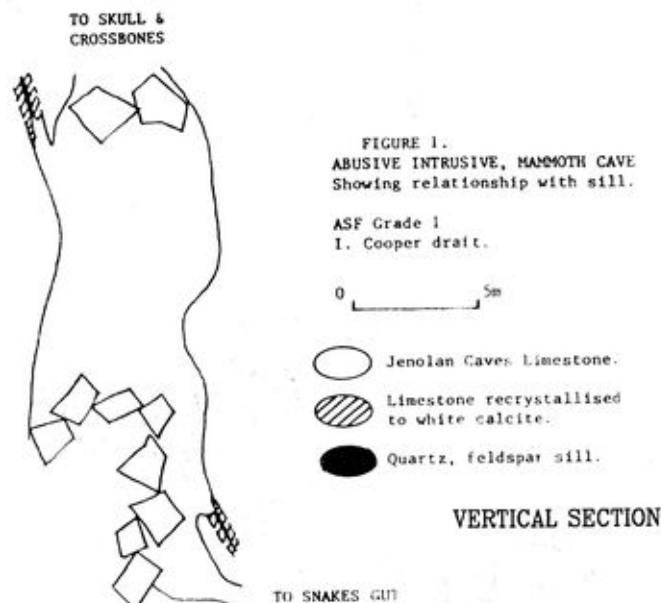
Refer: Page 61, Mammoth Book  
Figures 1 and 2

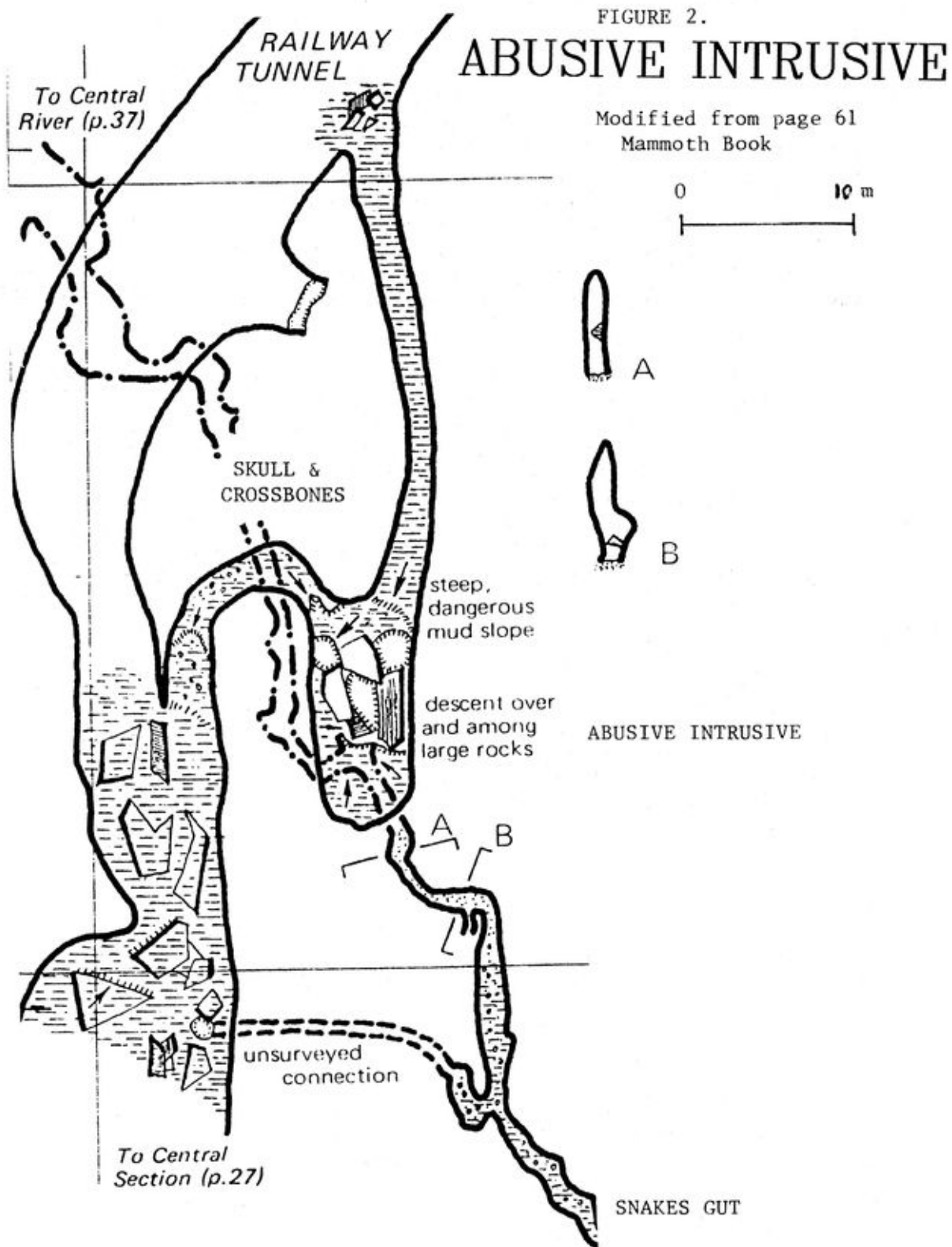
Upon entering this chamber from Snakes Gut one observes the lower exposure of an intrusion with 0.3m to 0.5m wide zones of recrystallised limestone bounding a 0.1m to 0.5m thick intrusion. The intrusion is generally parallel to bedding, (dipping 70° westwards), with only minor crosscutting. Hence strictly speaking it is an inclined sill. The sill may be traced for at least 40m along strike and vertically for 15m.

The intrusive is generally a highly weathered light brown coloured rock containing quartz, plagioclase, and potassium feldspar. The rock is fine grained with an average grainsize of 0.1mm. The limestone margins have been altered to coarse grained, milky white calcite crystals up to 80mm across. The perfect cleavage of calcite is the only structure visible in the recrystallised areas, no sedimentary structures or metamorphic cleavage are preserved. The intrusion itself appears undeformed.

To the author it appears that this chamber has initially formed by removal of the sill and it's contact zone. The sill forms a plane of weakness within the limestone. The pure calcite alteration zone is more easily dissolved than the limestone whilst in the intrusive feldspars rapidly breakdown to clay minerals. In the chamber roof this process is illustrated by the sill having been removed up to 3m in advance of the general roof outline, (figure 1).

Currently this chamber is not named and has been traditionally referred to as "deep rocky chamber below Skull and Crossbones". In recognition of this areas geology it is proposed that the chamber be henceforth known as ABUSIVE INTRUSIVE.





## 2. Sand Passage.

Refer: Page 26, Mammoth Book  
Figure 3.

Large sections of Sand Passage are formed along a plane of weakness, generally parallel to bedding, (dipping 70° westwards). Figure 3 shows an 18' chimney formed along this weakness. In this area the roof shows signs of intrusion with recrystallisation of limestone to coarse grained calcite crystals up to 60mm across. This calcite is identical to that observed in Abusive Intrusive. This recrystallised limestone is visible for at least 40m of Sand Passage. Marginal to the pure calcite areas are dark grey reaction rims of silicified limestone which grade into unaltered limestone.

Figure 3 also shows an outcrop of "mudstone". This rock is almost certainly a fine grained quartz, feldspar intrusive similar to that seen in Abusive Intrusive. Alteration zones are up to 0.6m wide whilst the intrusion is only 0.1m thick. A noteworthy feature is the lack of intrusive rock compared to the amount of recrystallised limestone. To the author this suggests that the intrusions were more of a fluid - degassing event that mostly recrystallised limestone with little deposition of intrusive rock. The silic, highly differentiated nature of the intrusions tends to support this.

Sand Passage appears to have formed along an inclined sill in a similar manner to Abusive Intrusive. This inclined sill has formed along a preexisting bedding plane weakness, (or "bedding plane joint set"). The combination of this joint set and the sill accounts entirely for the linear nature and orientation of Sand Passage.

## 3. Some Geological Speculations

The two intrusions described in this article are considered to be Carboniferous in age and genetically related to the Kanimblan granites that outcrop around Jenolan. Firstly the geochemistry of the intrusions suggests a link to the granites. Secondly the sills appear undeformed as are the granites. This lack of deformation also suggests that these intrusions occurred after folding of the limestone once the Jenolan Caves Limestone was in its current orientation.

It appears that intrusion controlled speleogenesis is much more common at Jenolan than previously thought. To the authors knowledge intrusions occur within the Jenolan Caves Limestone at the following locations:-

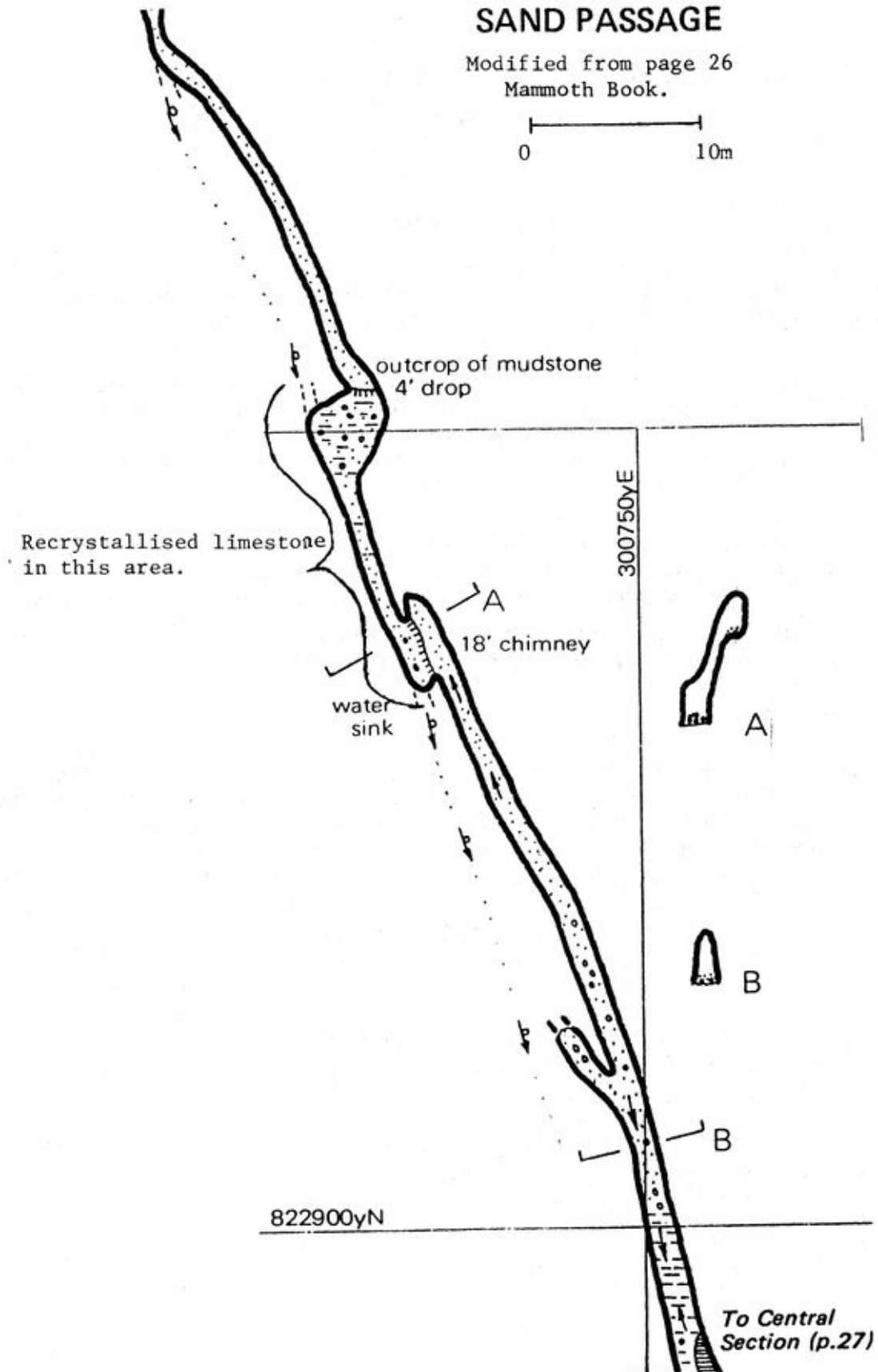
- i) On the surface between Hennings, (J39) & Serpentine, (J72) caves.
- ii) In Wiburds Lake Cave, (J58).
- iii) In Hennings Cave, (J39).
- iv) In Mammoth Cave, (J13).
- v) In Spider Cave, (J174).
- vi) In Lucas Cave, (J7).

No doubt many other intrusions exist and need to be recorded.

FIGURE 3.

# SAND PASSAGE

Modified from page 26  
Mammoth Book.



# WEIRD

From the JOURNAL of the AMERICAN PSYCHOANALYTIC ASSOCIATION;  
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## SPELUNKING AS A MANIFESTATION OF A COUNTERCLAUSTROPHOBIA

Wayne A. Myers, M.D.†

### ABSTRACT

Material is presented from the case history of a patient whose interest in spelunking (cave exploration) was found to be an unconscious expression of a type of counterclaustrophobia. Both oedipal and preoedipal determinants of the claustrophobic anxieties are delineated.

Of particular note, in this instance, is the testicular element in the genesis of the patient's claustrophobia. His confusion of the movements of his testicles into his inguinal canals during childhood defecation with the movements of the feces themselves lent a special intensity to his fear of being flushed away from the mother by an expulsive anal birth from the claustrum. Childhood anxiety, aroused when his testicles would become trapped in the inguinal canals, was an important forerunner of the adult fear of being trapped in confined spaces.

A counterphobic element of the spelunker 'per se' was his enjoyment of hanging suspended by a rope in caves. In this manner, he was able to act out (by virtue of his body-testicle equation) his identification with, and control over, the disappearing testicles in the settling of a claustrophilic union with his mother.

In this brief presentation, I shall describe a case of a man whose interest in spelunking (exploring caves) was seen to be an unconscious expression of a type of counterclaustrophobia.

### *Clinical Material*

Mr. A was a thirty-seven-year-old single man, who came to me because of an anxiety attack while spelunking. He has often descended into caves before, but this time had lost his footing and fallen into space. While swinging on his safety rope, he felt terror and was barely able to pull himself to safety. His mother had become depressed when he was five, after his eight-year-old brother had fallen to his death in an elevator shaft. The mother was never the same, despite the patient's efforts to ease her sorrow. In adolescence, he gave up trying to soothe her and became passionately involved in spelunking. In his seventh analytic session, he presented a dream.

*I was in a dark place. It felt like a cold room at first, and then I realized that it must be a cave of some sort. I had the sensation of hanging from a rope tied around my body and swinging back and forth across a space so vast that I felt dwarfed in comparison. There was no real light source in the dream, so I couldn't make things out very clearly. I called out then, though I'm not exactly sure what I said, and it seemed as if my echo got lost and didn't come back to me. Then I began to feel anxious and I woke up.*

In his few associations to the dream, the anxious swinging on the rope recalled the recent fall in the cave and his anxiety attack. He had also lost his light source in the past. The next day, it became clear to us as he spoke of himself as a child (the dwarf in the dream), that the dream was a visual representation of the mother's years of unresponsiveness (the loss of his echo) to him after his brother's death. Also clear, was his anger at his mother for rejecting his efforts to pry her out of her depression. He had been angry at both

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the mother and the older sibling even prior to the brother's death, for the sibling's having always been the mother's favorite. The anxiety in the large cave had occurred at age thirty-seven, the mother's age at the time of the brother's death. Attaining that age and being seriously involved with a woman, who had previously been involved with a friend, evoked memories of the early wishes to be rid of the brother and possess the mother. The anxiety and guilt aroused led to ideas that he should have been the one to have died, instead of the brother. In the transference, I was seen as a deadly revenant, the vengeful spirit of the older brother who would exact some fearful retribution from him. At the end of the first year of treatment he had a hypnopompic fantasy of opening the door to my office and falling down a deep, black shaft, like the color of my couch. As he called out to me for help I angrily withheld it. Much material about his "survivor guilt" emerged, with hints of his love for his brother encased within the wish to replace him -- a wishful union with the lost love object by becoming him. After some months, allusions to the brother were replaced by ones about the father. He and I were presumed to object to Mr. A.'s girlfriend, on the grounds that she was not Jewish. In this setting, he experienced erectile impotence during intercourse. He was at a loss to explain this, and then had another dream.

*I'm in a dark place, a cave, and I seem to be walking around on the bottom of it. Suddenly I hear some rumbling noises and the walls of the cave look as if they're moving in on me. I feel frightened and wake up.*

Mr. A.'s thoughts went to having spoken with his girlfriend about joining him on a cave trip, his first since the attack. He said he had not mentioned it to me, as he felt I would object because spelunking wasn't something a nice Jewish boy did. The cave walls moving in recalled a scene in a STAR WARS film in which the protagonists are trapped in a garbage compactor room as the walls move in on them. They put a pole across the room to slow the process down, but are finally saved by the help of their friendly robot outside. The failure of the pole to prevent the walls from closing in was akin to the erectile failure. In the film, it was Luke Skywalker's father, Darth Vader, who attempted to kill the protagonists. Mr. A. suggested that it was his fear of his father's (and my) retaliation for his wishes to marry his lover that led to the impotence, a symbolic castration geared to ward off a feared real one. I added the idea that his affection and sexual feelings for his lover evoked memories of like desires toward the mother during his childhood. The proposed trip to the cave (= mother) had intensified his fear of castration. Mr. A. noted the film cycle corroborated what I had said, inasmuch as the older brother figure in the films, Han Solo, obtains the princess's hand, because Luke turns out to be her real brother and cannot cross the incestuous barrier. After working through some of the fear of the father and brother, the patient began to perceive me as an indifferent, depressed mother, in the transference. Mr. A. would try to cajole me out of my presumed "black moods" (my silences); when this failed, he became angry and missed some sessions. His acts were meant to make me experience the pain of worrying about his well-being, as he had done about mine. In sessions, he had trouble remaining still on the couch and jumped around or swung his legs over the side of the couch in an attempt to sit up. After one absence, he told me he had gone spelunking again, with no anxiety. He spoke about termination, saying he had cleared up his problems. My attempts to link his return to spelunking with his adolescent denial of the wished-for closeness with mother (as reactivated in the transference by my silences), fell on deaf ears. He soon announced that his lover had agreed to marry him and they had set a wedding date during the summer vacation. Shortly before I left for vacation, he returned to the original cave where he had the attack and again felt anxious. He slept poorly and then had a nightmare which awakened him.

*I was back in a cave again, and the only light source seemed to be coming from behind me. I felt good being there at first, as if my anxieties were all a thing of the past. I was hanging on a rope, and then the light source was gone and it was pitch black in the cave. Suddenly everything began to shake and I felt certain that the walls of the cave were converging on me, as in my earlier dream. I tried to swing the rope back in the direction where I'd come from, but my body got trapped by the walls. It was horrible, feeling the walls closing in on me and being unable to move. My feet got stuck, and I woke up feeling terrified.*

In his thoughts about the dream, Mr. A. spoke of his fears of being without me (the light source in the dream), either by his terminating prematurely or by my getting rid of him for marrying without my consent. He wanted my assurance that I would maintain his hours in the fall, and that I was not angry with him.

When I asked about the walls closing in on him, he noted:

*At least if you have a chance to run for it, it's not so bad... Being trapped is the worst thing. You have no control.. It's like what used to happen to my testicles as a kid. They'd go up the cord in my groin, just like the rope I'm always swinging on in my dreams, and I'd have to wait for them to come down. Half the time I didn't know if they dropped down in the bowl and would be flushed away or if they were mired in shit there. It was a nightmare....*

In a subsequent session, he linked his testicles moving up in the inguinal canal with the brother's fall down the elevator shaft (the caves he explored in a search for the loved and hated sibling), and his own hypnopompic fantasy of falling down a shaft. If I would "tie up" his analytic hours for him with an umbilical-spermatic cord, I would save him and his brother, both equated here with the loved and hated mobile testicles of childhood. On his return to analysis in the fall, Mr. A. spoke of having dreamed again of swinging on the rope and of the walls closing in on him the night of his wedding. The anxiety was less this time. Though he still feared some retaliation from me, in terms of my being the father/brother revenant figure of the past, most of his fears regarding me now centered on my being the mother whom he saw as having wished to squeeze him to death in utero, so that she would have the favored older brother/father all for herself. He saw, however, that the fear of being squeezed to death within the mother contained both a wish to merge with her and a fear concerning the integrity of his testicles (= himself and the dead brother whom he had identified with) as a child. The level of the fear/wish was so strong for a while that he could barely lie still on my couch. He also often tore a napkin to pieces and asked my forgiveness for "making a mess" and acting "shitty." He became aware of further childhood memories of his testicles moving into the inguinal canal when he moved his bowels. He realized that part of his interest in spelunking, especially the descents on ropes, came from his confusion of his feces, his testicles and his dead brother, and from his wishes to regulate the ascent of his testicles into the canals and the descent of his feces into the toilet bowl. He also came to recognize that part of his anxiety in caves derived from the fear that he would be flushed down the toilet by the rejecting mother (as he envisioned her flushing away/killing the brother) and would be unable to find his way back to her or to me during vacations.

When Mr. A.'s wife became pregnant, he had the fantasy of her having twins in utero (the dead brother and himself) and of her squeezing the younger, smaller one (whom he was identified with both as himself and as the mobile testicles of his childhood) to death by lying on her belly during her sleep. Shortly after he was offered an excellent job out of town, which he could not refuse. In this setting, the treatment was terminated prematurely. I should note here that Mr. A. regained his avid interest in spelunking.

#### *Review of the Literature:*

Lewin's (1935) article on claustrophobia describes two different fears, (1) fear of entering an enclosed space and (2) fear of something dreadful happening within that space. He sees these as phallic-level anxieties, with the self-representation being equated with the phallus. The main fantasy in claustrophobia is a fear of being crushed or flushed from the mother's body by the father's penis during intercourse. Gehl (1964) notes that the anxiety in claustrophobia is linked specifically to the inability to move or feel movement. Asch (1966) delineates two more primitive fears than castration anxiety in claustrophobia. He sees the identification with the fetus in utero as being linked up with the dread of being squeezed out and flushed away as a smelly stool and also of being chewed up, digested, and fused with the mother, with a loss of identity. Asch sees projection and displacement of the ambivalently perceived maternal object onto the enclosing space, and wonders if this is the origin of the symbol of the cave as first object. He notes that when the anxiety of claustrophobia is libidinized, the tension becomes an aim in itself, and may give rise to spelunking as a pursuit. This case supports that view. Fenichel (1939) sees the counterphobic attitude as a never-ending attempt at conquest of an infantile anxiety. He feels that in sports one actively brings about in play tensions, formerly feared, in order to emerge triumphant. He cites mountaineering as an example, but spelunking certainly pertains as well.

### *Discussion*

From the material presented, it seems clear that Mr. A.'s interest in spelunking is related both to his claustrophobic wish to be reunited with his mother (loved dead brother)-cave and his counterphobic denial of his claustrophobic fears of entering into, and remaining within, the cave-mother (feared dead brother). The claustrophobic fear has oedipal and preoedipal determinants. The preoedipal anxieties are of separation from the mother via an expulsive anal birth (as in the fantasied death of the brother in the elevator shaft/birth canal) and of a crushing merger with her, and loss of the sense of self. Of special note here, is the testicular component seen in the genesis of the claustrophobia. The description of the anxiety aroused in boys by the frequent movement of testicles into the inguinal canal, during bowel movement, etc. has also been noted by Bell (1961, 1964) and Myers (1976). The confused identification in Mr. A.'s childhood between the movement of his testicles, and of feces into the bowl, and of his total body and his testicles (body-testicle equation), lent an intensity to a fear of being flushed away from the mother (as he had envisioned the dead brother being separated from = killed by her) in the expulsion from the claustrum. In addition, during moments as a child when his testicles were trapped in the canal, he had to have a warm bath or to wait passively for them to descend, an important contribution to his later fears of his total self being trapped in a confined space was established.

In spelunking, Mr. A. especially enjoyed hanging suspended by a rope (a variant of the inguinal and umbilical cords) in the air in dark caves. In so doing he became the mobile testicles, the fetus, the phallus, and the resurrected dead brother in utero -- all riding up in the inguinal canal in a manner he could now control by pulling himself down to safety at will, a form of identification with the aggressor. The patient's childhood understanding of the connection of the sperm-producing function of the testicles and the issue of procreation helped to link separation and castration issues in his mind. Spelunking thus served a multiply determined counterphobic purpose for Mr. A. and helped him to deny anxieties from a variety of psychosexual and ego-developmental levels.

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# THE 1990 NEW YEAR JENOLAN EXPEDITION

Present: (Mon-Tue) Mark Staraj, Pat Larkin, Derek Hobbs.  
(Wed) Mark Staraj, Pat Larkin.  
(Thu) Mark Staraj.  
(Fri) Mark Staraj, Igor Jazbec.  
(Sat-Sun) Igor Jazbec, Mike Lake, Jill Rowling.

Date: 1st-7th January, 1990.

## 1st January - ARRIVAL

This took the whole day. Derek picked us up from Pat's place at about 3pm, arrived John Bonwick's place a bit later, left some time later still (thanks for the New Year cuppa John!), arrived at Dino's pizza place at Katoomba at about 7pm, left after an extremely involved and interesting discussion on intelligence/life and finally arrived at Jenolan at about 11pm.

## 2nd January - SPIDER CAVE

Essentially the idea was to further investigate the Downstairs Rockpile with a view to bypassing the sump towards Mammoth Cave and to retrieve diving gear left from the last attempt to push the Upstream Sump. However Pat wished to see the chamber known as Inspired Point, which is off the Cloisters/Upstairs Rockpile area. Pat would then take us via the connection between the two Rockpile sections into Beach Chamber.

In the entrance crawl into Spider was evidence of the Newcastle earthquake - a small conical mound of loose earth shaken from a crack in the ceiling. It was about 7cms high and was soon obliterated by passing cavers.

At Pirates Delight the first test of our mettle awaited us. A pool of water sat here despite 6 weeks of dry conditions. Further, the pool was deep enough to submerge one ear on passing through it and as it did so you felt the stirred up silt settling back down inside it! But worst of all the pool stank something horrible! Just like the water in a vase of flowers that has been left till the stems rotted. And of course since the clothing soaked it up we had to contend with this stink wherever we went. Puke! The top of the Ramp gave Derek some trouble but having conquered it we all proceeded to the next squeeze - the infamous "The Shredded Wait" (name according to the map by Guy McKenna et al.) which marks the start of the dreaded Crystal Crawl. We certainly could all have done with less Christmas cheer.

Nevertheless we persevered and reached the Colosseum. This is quite an impressive chamber and a just reward for pushing the Crystal Crawl. Here I showed Pat a dig I had commenced for all of ten minutes when I had found a water scalloped tube heading up and away from the chamber on a trip with Martin Scott (on the same weekend as the Spider-Imperial breakthrough). Pat expressed something less than enthusiasm for its prospects and I disagreed.

Pat now tried to lead us to the Cloisters and after a number of false starts we got there. This chamber seems more like a section of major passage than a mere chamber. In which case the rockpile at the south end indicates it continues into the Colosseum and the northern rockpile suggests good possibilities. A search was commenced for the passage to Inspired Point. Derek found it. Meanwhile I had found the

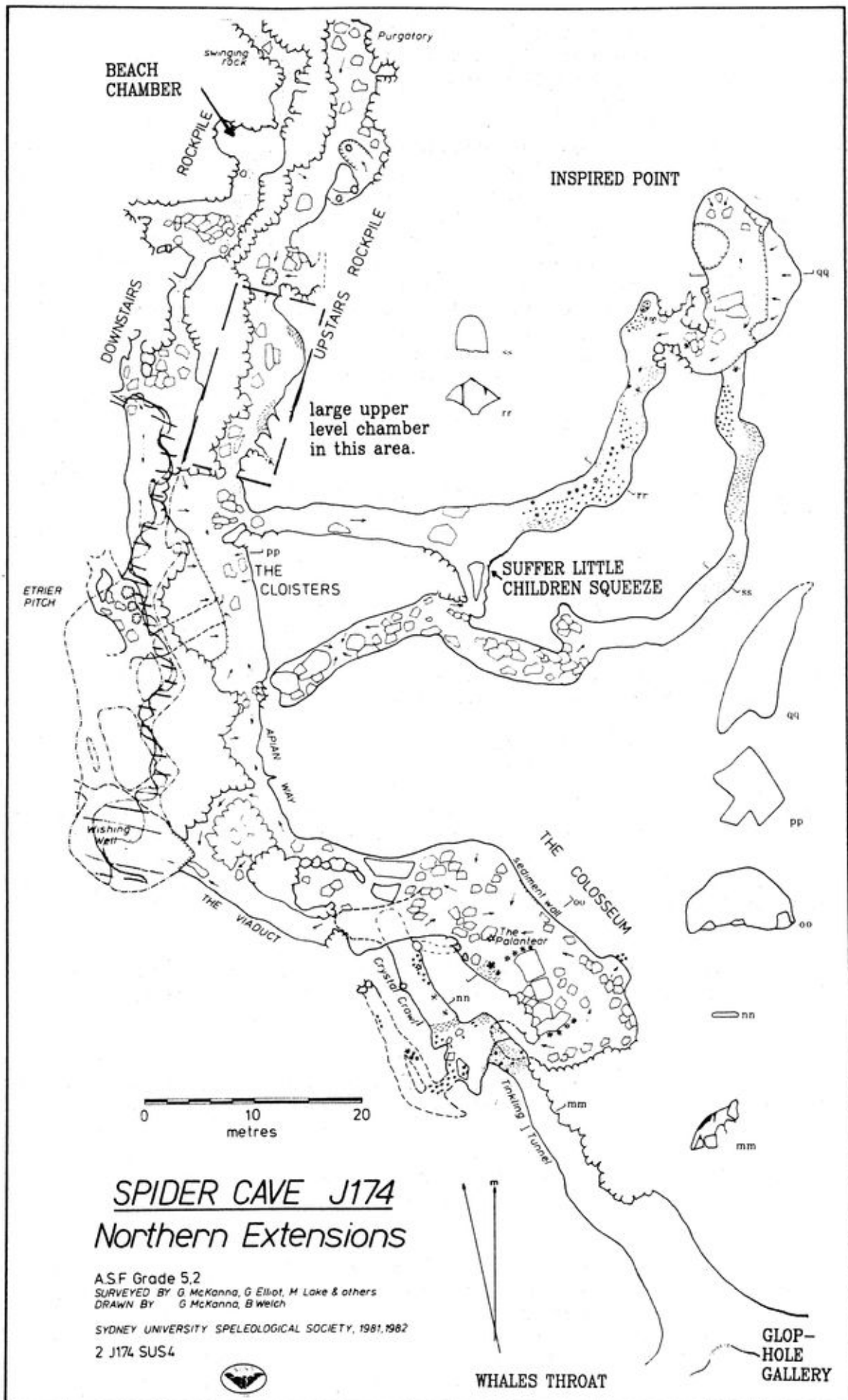


Figure 3 (above). Plan of the northern extensions of Spider Cave.

Upstairs Rockpile route and followed it almost to its end when I was rejoined by a relieved Pat who had climbed up to find a large chamber above this rockpile and had temporarily become lost (see below for Pat's description of it).

Having rejoined Derek we followed a well decorated passage until further progress was no longer possible without risk to the formations. Closeby the passage had widened into something of a chamber and an obvious inviting tube lead up from the ceiling towards the upper passage. The unclimbable tube was bypassed by a tricky climb. Too tricky for Derek or I. As Pat climbed he partially dislodged a very large slab of the wall and Pat was very shortly on his own! After Pat completed the climb and visited Inspired Point he returned and fortunately we were there to guide him back down this difficult climb. He raved and raved about this chamber and so I guess we'll be back, better prepared in order to use the lower passage. After seeing Inspired Point, Pat reassessed the prospects of my tube to "fair" - in other words there is a substantial amount of passage and formation on this level and every reason to expect more.

We then pushed along the Upstairs Rockpile to where it ends in rift. While Pat looked for the way into the Downstairs Rockpile I thoroughly explored the rockpile area known as Purgatory. Purgatory has no prospects that I could find. Pat found his way into a lower level while Derek slept. Shortly the way on was a squeeze which Pat pushed through but Beach Chamber was not in sight and then it was decided to head out of the cave. Pat had last been here in May of 1984 when Judy Clarke had first found the connection between this area and Beach Chamber (R.McNeall, 1984). Many obstacles later we were enjoying some beer and reflecting on a satisfying 7 hour or so trip.

### 3rd January - LITTLE CANYON CAVE

Derek left in the morning back to Sydney. Someone turned up the oven and bushfires broke out near Wombeyan and Junee to name a couple. Pat and I decided that Little Canyon Cave was the go, where we would take a look at the Nibicon Dig, scene of an impressive water sink during flood (Larkin and McCartney, 1988) and a good breeze. In slow motion we made our way up the valley, finally reaching the cave where we then changed into caving gear.

In the cave it was beautiful and cool, probably at least 20° cooler than outside. We proceeded quickly to the canyon. In the direction that water emerges from Serpentine Cave the bottom of the canyon slopes down 3m to where it appeared totally blocked by gravel. However a 2cm gap to one side at the bottom admits to more passage beyond and a breeze blowing out. Just here I noticed something very peculiar in the limestone. From a distinct level and downwards there existed bands of white - of varying thickness, but uniform and parallel. They ran nearly horizontal and from the way they appeared and their apparent absence on the southern wall they are apparently part of the wall, not just a coating onto it. A geologist should examine them.

At the downstream end the canyon ends and gives way to a fill constricted slot, perpendicular to the canyon. This is the dig and the breeze continues through here. Pat got stuck into the dig using his hands as shovels while I used my helmet as a bucket. In about an hour and a half Pat reckoned it ready. The face of the dig was now a foot deeper than the floor of the narrow, 2m long slot. Pat levelled it off

and eased through the slot. However I quickly found that head first was not possible. Feet first it felt like it would go but required constant wriggling up and down to find space. Poised to push through for the sake of backing up Pat, Pat returned to say any more gains would require further hard work. Oh - what bad luck I wasn't needed! Perhaps it should be dug further although the problem rested with negotiating wall projections simultaneously. We left the cave.

Pat left for Sydney that evening and I was on my own. Well not quite. I was imposed upon by a few thousand insects and they made very trying company. Being very hot and bored I had the light on while I read a book and gradually the room filled up with all sorts of creepies and crawlies. Every now and again I would get up and commit insecticide. Every other time I was the subject of a thorough surface traverse by would-be insect speleologists.

#### 4th January - RIVER CAVE

A day on my own so what better time to take a courtesy cave tour? None! With thanks to the guides I was on my way to see River Cave - one of the very few tourist caves I had not visited. It was a good 2hr tour and an impressive cave. For anyone interested in Jenolan it should be high on their list for the simple reason that River Cave forms the backbone of the Show Caves south of the Grand Arch linking Lucas Cave/Pool Of Cerberus (careful- the spelling is tricky! A Jenolan in-joke) to the Temple Of Baal/Orient Cave/Barralong Cave series. As such it gives you an idea of the trend of the cave in this part of the system. It is characterised by much formation, especially flowstone, many large passages and lofty chambers. A good day.

#### 5th January - MAMMOTH CAVE

Igor arrived and I decided we would check off and clean up some leads in Mammoth. Firstly I wanted to see for myself where the passage dug out and entered by Martin Scott in 1987 connected into the Debouchement Detour/Davey Jones Locker area (Staraj, 1987). At that time Martin had shortly reappeared in the Railway Tunnel from the Debouchement Detour but in my subsequent exploration of the area I had not located his connection. The reason I had not followed him was that the snug tube he pushed down dropped 3m and I was wary of returning up it without assistance. This proved well founded! I could not see the bottom without severely risking disappearing head first, but Martin had survived hadn't he? After lowering myself down it I ran out of holds and dangled like washing on the line (Martin, What on earth did you think you were doing?!). Soon after the holds were no longer and I was unceremoniously dumped a metre onto the floor. A short awkward clamber along the passage connects via a further 3m drop to the Debouchement Detour beneath the aven just prior to the Slop Trough. So for anyone looking for a bit of that 'free fall into the unknown' feeling I recommend this One Way Ticket passage.

As Igor hadn't been in this area before we continued on to see Central Lake before heading off to Ice Pick Lake via Snakes Gut. Once there we looked in particular at the possible passage noted on a previous trip (Staraj, 1990) which turned out to be a part of an extensive upper level developed on a false floor. The upper level is profusely covered in speleothems - mostly stalactites. Evidence that this chamber floods regularly to the roof was evident everywhere in the form of liberal organic debris and mud staining on the formations and roof surface.

Next destination was the passage that I had noted as a goer on a previous trip with John Morris (Staraj, 1990) in the Naked Lady Chamber area. After negotiating the first corner (a right angle bend) the passage decreased from sitting up size to lie down with comfortable headroom. Presently it bent again past a 4m aven that was almost blocked. The way on narrowed to sideways at sitting height but was immediately blocked by a false floor half way up. All the signs were there. This was looking very, very good. Plentiful scalloping on the walls indicated the flow that produced the false floor and a good breeze spoke of things to come as the passage beckoned on and steadily downwards. After testing of below and above the false floor boots were put to use and in short time it was no more. Cautiously I eased through the squeeze and on to where it became roomier and bent back the other way beneath more false floor at ceiling level. Suddenly it did a tight S-bend and dipped more steeply downwards. I would have to take out the false ceiling to buy more height advantage around the corner. I sneaked a look around the corner and saw that it bent left again after 4m. I decided it was prudent to come back with more practical tools than boots. This was the most promising new lead I had seen to date. It was a reluctant pair of satisfied cavers that left Mammoth that day.

(see next article for map of area on p39)

#### 6th January - HOME

Igor very kindly gave me a lift back to Katoomba before returning to cave with Mike and Jill who had arrived the previous night.

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Mark Staraj.

#### Chambers above Upstairs Rockpile near the Cloisters.

To the left of the entrance of the passage to Inspired Point is an obvious climb over a high muddy boulder choke. At the top is a series of largish chambers with an irregular rockpile floor. The height of this series of chambers is about 25m above the floor of the Cloisters. In particular, there is one large chamber generally exceeding the size of the Cloisters. The area is complex and there are many routes down through the floor, some are unnegotiable. I was confused and unable to find my way back down into the Cloisters and ended up instead some distance along the Upstairs Rockpile, where fortunately I found Mark. There was no sign of previous entry, however the area is obvious, but not previously recorded. The high series ends in bedrock and was fairly well explored, leaving possibilities at the intermediate level.

pers. comms. from Pat Larkin.

(a report on the Nibicon Dig is being prepared  
by Pat Larkin for the next Bull.)

# THE FINAL WORD

Present: Mark Staraj (T.L.), John Morris, Jill Rowling, Mike Lake.  
Date: 9th-10th December 1989.

## 1. Introduction

Jill Rowling would be most caving club editors' and (their prey) the hassled and frequently illiterate trip leaders' idea of a pot of gold - an enthusiastic and unrestrainable trip report writer. However for this trip leader (read Editor's whip- the Librarian), conscience weighs heavy and each report hangs like an albatross from the neck. Hence Jill's verve is welcome but on this occasion it was almost a case of a pot of iron pyrites with me for the fool.

Imagine this- two separate reports written for the same trip and appearing in the same bulletin!!! This very almost happened. The only reason it didn't was because I decided I had carried on quite enough with 20 pages in the last Bull. (ie. this one could wait!). However after reading her enjoyable reports I felt there were some points that could be made- the final word.

Therefore this report should be read in conjunction/following the reports by Jill in SUSS Bull. 29(3):

- 1) Frenchmans Cave: Another Silly Trip
- 2) Mammoth Cave: A Scaling Pole Attempt, And More Surveying.

## 2. Frenchman's Cave

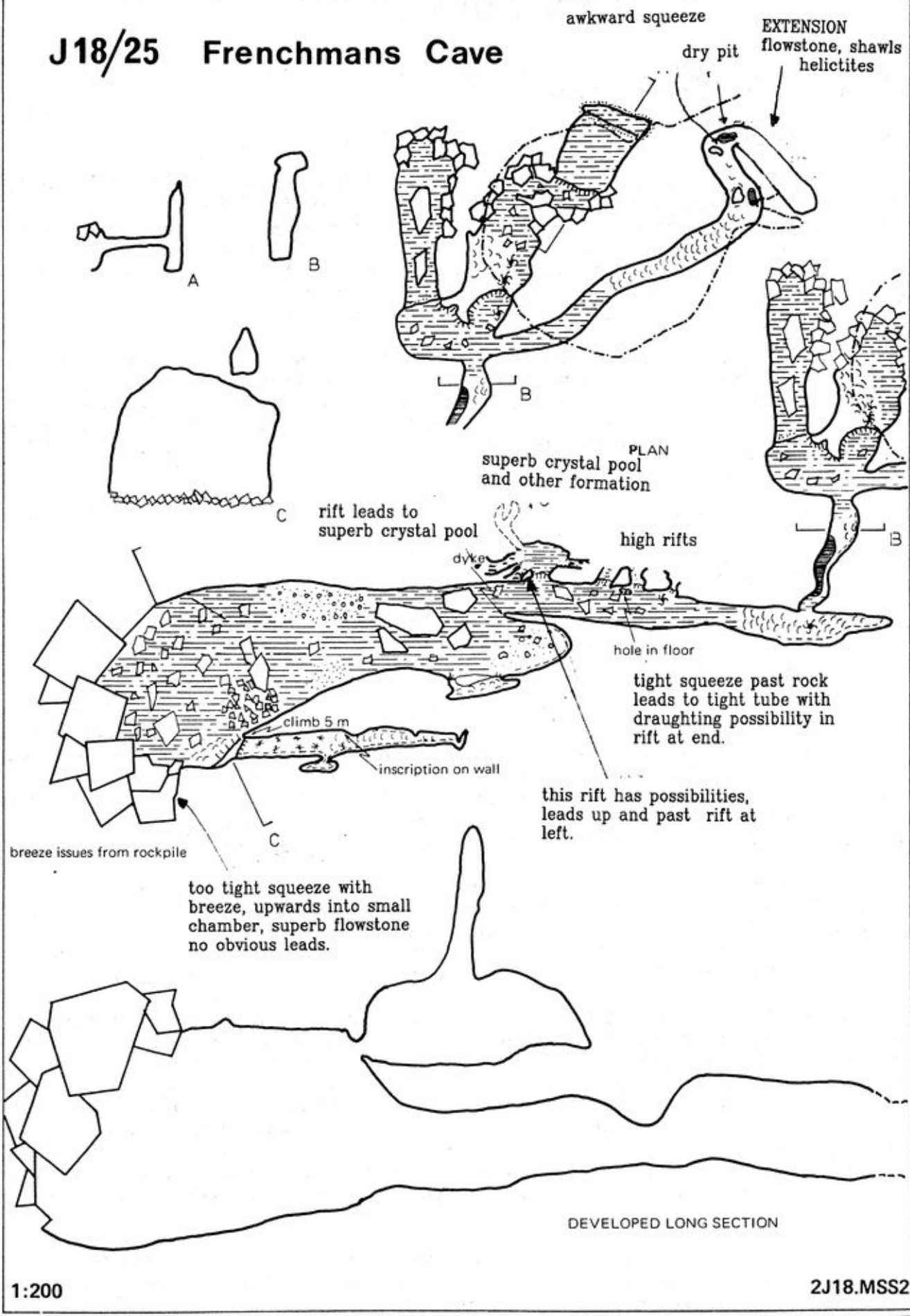
Refer to map. This cave has long been known and as such contains more historical graffiti than any cave I have ever seen. The cave has two entrances although historically there was only one: corresponding to a 20m abseil. The origins of the second one are unknown but it conveniently reduces entry to an 8m pitch. The massive rock at this entrance that is used as anchor looks very much out of place on a grassy slope otherwise bare of rock. Perhaps it was placed there?

The formation in the entrance chamber is good but damaged and muddled by careless visitors. In particular there is a large and impressive flowstone wall (reminiscent of the Snow Wall in Ian Carpenter Cave) that was obviously the victim of a climbing attempt. Most of this damage is apparently the result of many years ago.

While Mike and Jill proceeded directly to the blowing rockpile, John and I explored upstream in an old dry stream passage. At the furthest surveyed point is a pool beyond an awkward squeeze. The pool was dry enabling me to pass the squeeze into the 0.5m deep pit and through into going passage! No! Around a bend it blocked off. This small room was nicely decorated however with flowstone, straws and helictites. Returning to the start of it John espied a very low passage leading to a pit in the floor after 3m. John was keen and tried to squeeze in and was unsuccessful. It all looked pretty silly to me.

By the time we reached the draughting rockpile, Jill and Mike had left it and begun exploring the floorhole. We started on the rockpile. It is quite dissappointing. The whole is compact and offers no incentive for excavation. It is sealed except for one low passage on

# J18/25 Frenchmans Cave



J 18/25

## Frenchmans Cave

inscriptions on  
p43 Jenolan Book

helictites

bone deposit

choked with soil  
and rock, faint breeze?

PLAN

live lizard!!

crystal pool

drop 3 m

A

steep slopes

holes to surface

tag J18

tag J25

DEVELOPED LONG SECTION

1:200

2J18.MSS2

the left rising on a slant to a 2m shaft above which can be seen a low chamber and an outstandingly pristine white flowstone. It is immediately evident that the breeze flows through this, and just as evident after 5 minutes that I wouldn't pass the corner into the shaft. Retreat. John then climbed on the outside of the rockpile looking to connect into the continuation- but no luck.

After looking/speaking to Mike about the floorhole (details in Rowling 1990a), it was back to the task at hand. I'm not sure what the high passage is that Jill states John avoided, but he lassoed a knob and climbed into a well decorated upper passage that was not extended. In the meantime on the opposite side of the passage I found my way into an extension containing one superb crystal pool with crystals on the order of 1cm in length. Jill followed me up and descried a crystal ball (okay a small pun), which I did not see (drawing in Rowling, 1990a). As Jill noted there has been a careless visitor here also. Fortunately not too many of them. I also explored some steep unsurveyed rifts in the vicinity. A couple were tricky and still hold a possibility of leading somewhere but there is no draught.

Mike was dragged back to the blowing squeeze in the rockpile and put to productive use. With some effort it was passed and the low chamber was reached but found to be walled in loose rock. A cursory look was given.

On the way out John coaxed Mike into his little silly passage whereupon the only thing found was that Mike has a little silly head.

A tape was used to gain entry to a pit in the entrance chamber. At its base was a lot of rotten surface debris and a rather large lizard! Although quite sluggish it appeared totally unharmed- probably just slow because of its cave equilibrated body temperature. Because of its size and undamaged state it may have arrived via a low and almost choked passage leading off from here. Or perhaps it fell and was "lucky"? A very slight draught was noted/fancied here.

Conclusions: Frenchman's Cave is impressive if somewhat disappointing. The main passage is reached only to have it blocked after 40m. The breeze, which can be felt in the main passage, points to better things with a connection somewhere to Spider Cave below. By survey the Bus Stop at the start of the Rockpile in Spider Cave is just 20m distant horizontally. A connection would add possibly 200m to the Jenolan Show Cave System. However the only chances left are "slim" ones. For my mind the breeze is the one to follow but all precautions should be taken to preserve the superb flowstone.

## 2. Mammoth Cave

The major object of the weekend was to explore an aven in The Rockpile in Mammoth Cave found by myself previously (Staraj, 1990).

An early start was supplied by Ernst Holland who paid us a wakeup call at 11am! Mike and Jill were still sorting themselves out so John and I headed off for Mammoth with 6 scaling poles, brackets and bolts, and two 5m ladders and one cave pack. For future reference, ignore John, and split the gear between two packs and then alternate with the poles. Warning: two man scaling pole teams should be both fit, stubborn and stupid. But we showed it is possible. Mind you we did not take them much further than the bottom of the Entrance Chamber!

By the time we were only 10m from our destination lo and behold ! we were joined by our support crew - demonstrating the wisdom of being Thirty and Something. The attempt is recounted in (Rowling, 1990b). A small blocked off chamber in rockpile was found.

After this John and I set off via Davey Jones' Locker and the Unsurveyed Connection (UC) to Ice Pick Lake (IPL). The overflow of water from the Horseshoe Cavern has been seen to enter the UC. A stream passage in the UC takes this under large boulders forming the start of the lofty and deep chamber beyond the Skull and Crossbones (see map), to a narrow and snug rift that connects via a squeeze quite close to the start of the Snakes Gut and so to the IPL system of submerged passages. The rift route of reaching IPL has been known about since at least 1952 (Fairlie-Cuninghame, 1953).

Further along Snakes Gut a small chamber can be reached via a low and short crawl. This chamber has two leads. One is at the top of a mudslope overlooking the entrance. John was unable to reach this tight looking passage. Meantime I pushed down a narrow passage beginning a metre up the wall on the western side. A fan of sand at the top of a sloping tube seemed to indicate that water may rise out of it. Alas, after pushing down 5m into a sit up sized room it was choked by fill.

Next, the "hole to water" was checked and water levels were found to be back to normal (ie. as indicated on the map), and the hole to be an impossible dive site. Following this I sent John up to check out the high bypass to the "micromeander bedrock squeeze" discovered in 1953 by (Wardrop and Tattersall, 1954). This was found and is shown on the map.

A possible passage to the left of the entry passage to Ice Pick Lake was noted but was left because of certain damage that would result. IPL was also at normal levels and I collected from its muddy shore a blue flashbulb, shaped somewhat like a capsule - if anyone knows where it came from then I would be most interested. A return via Naked Lady Chamber was then made and some exploration done at its lower level. A low and narrow passage was traversed for 4m to a corner and seen to continue (albeit smaller) however it was getting very late and so we left the cave with all the gear bar a ladder carried out by Mike. Both passages will be checked out in future. A very energetic day but it did demonstrate the viability of "heavyweight" exploration by a small dedicated team with definite objectives.

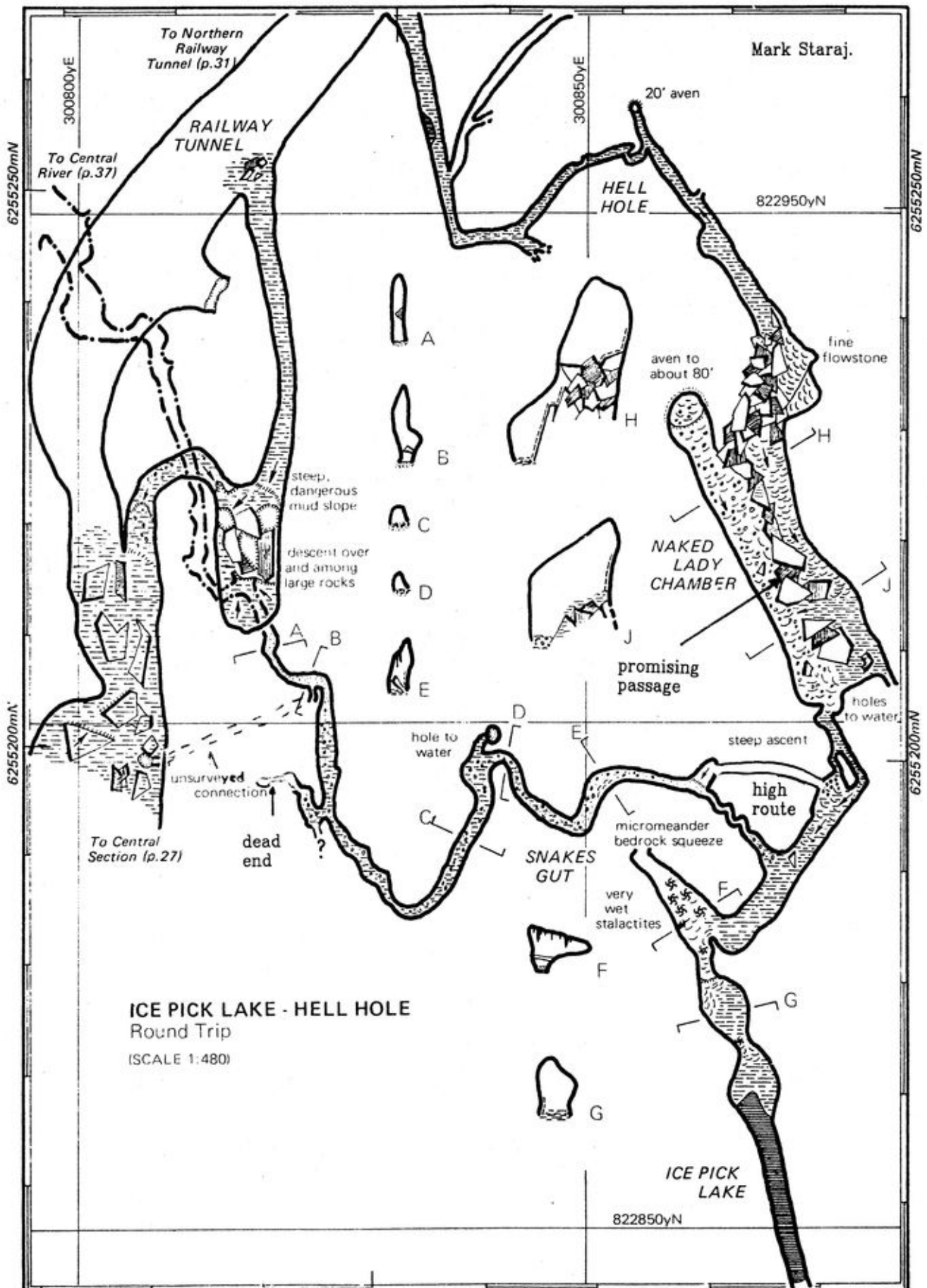
PS. Mike, we also noticed that someone had "broken into" your chocolate stash. The rumour has it that *Voss lives!*

### 3. References

- 1) The Exploration And Speleogeography Of Mammoth Cave, Jenolan, 2nd Edition, (J.Dunkley 1971, P.Winglee 1978).
- 2) Henry Fairlie-Cuninghame (1953): Trip Report, SUSS J. 1(3) p3.
- 3) Jill Rowling (1990a): "Frenchmans Cave: Another Silly Trip", SUSS Bull. 29(3) pp49-51.
- 4) Jill Rowling (1990b): "Mammoth Cave: A Scaling Pole Attempt, And More Surveying", SUSS Bull. 29(3) pp54-56.

5) Mark Staraj (1990): "A Peculiarly Good Trip", SUSS Bull. 29(3) pp 5-9.

6) Ron Wardrop and Les Tattersall (1954): "The Two Lakes in the Mammoth Cave", SUSS J. 2(1) pp17-19.



# The End of the Tuglow Cave Survey?

Catherine Gautier, Ian Gordon, Dierdre Hargreaves, Phillip Harrison, Scott Lloyd, Chris Morris, Martin Scott, Alan Skea, Keir Vaughan-Taylor, Sue Willis. 24-25th March, 1990.

## Introduction

After nearly a century of speleologists knowing about Tuglow Cave, no complete map of the cave was available. So, the survey of Tuglow Cave was commenced by SUSS in September 1987, and finally I can say there is nothing else really worth surveying. Well, almost.

The weekend did not start well, with torrential rain on the Friday night making driving hazardous. In the wee hours of night I decided to crash at the Jenolan Cottage garage, being constantly woken by the rain on the corrugated iron roof. Saturday morning at Boss Peak saw lots of wet cavers sitting around in their cars and not much enthusiasm for going caving, so we decided to try the possibility of approaching Tuglow from the palatial comfort of Iona. With no one answering at Iona, we descended on the Jenolan Caves House for an early-opener drink. Suitably warmed and imbibed, everyone was keen to go caving despite the drizzle still falling.

Back at Boss Peak saw Scott's Subaru 4WD filled with heavy caving gear and anything else we didn't want to carry, and the rest of us walking to Horse Gully Sinks. The Subaru crossed the Kowmung, with water lapping at the windscreen, and upon reaching the other side its distributor decided it was far too wet to climb the hill. Much later, with us wondering where the Subaru and our lunch was, Phillip could be heard shouting "we've got a flat tyre" from the hill above the Sinks. With the rain continuing to fall, the more enthusiastic of us headed up to offer our help. They had managed to break the seal of the tyre on the steepest, rockiest part of the hill, making jacking the car precarious to say the least, with Phillip praying in the front seat of the car with his foot strongly on the brake and only two wheels left on the road. By a combination of brute force, geology hammers and dangerous jacking practises, the tyre was changed and our gear arrived at the Sinks.

Late afternoon, with low cloud and fog rolling in, Ian, Chris, Scott and Phillip were still keen to go caving, so set off to rig the pitches to the streamway and check out the downstream sump. The rest of us scoured the paddock for wet-damp firewood and started a fire with the aid of copious amounts of metho. Keir and Sue arrived after an interesting crossing of the Kowmung River via the track, just before the others emerged from the cave.

## Surveying & New Streamway Passage

The main objective for me for the weekend was to survey a 30m long side passage off the overhead loop at the back of the cave. Alan, Phillip and I surveyed the side passage in no time, revealing that it used to drain water from some avens to the southeast of the loop, probably from shallow dolines near the northeast corner of the paddock. We met up with Ian, Chris and Scott who had been climbing the rift downstream, and continued around the loop to the westernmost tributary of the Tuglow Cave stream. The tributary emerges from a low-roofed passage filled with gravel almost to the roof. I considered this streamway passage to be the best prospect for continuation towards the Sinks, after the upstream sump of the Tuglow stream, which has been found to be choked with gravel (Scott, 1988; Vaughan-Taylor, *pers. comm.*).

Fortunately, the streamway was completely dry on this occasion and a narrow passage could be seen continuing 'upstream'. I squeezed along the passage after removing some offending gravels in the way and emerged 2 bodylengths later into a small chamber, big enough for Phillip and Chris who followed me, to just sit in. The passage continued in a straight line onwards only just bigger than my bodysize. I squeezed along until a constriction jammed my shoulders, although the passage continued for probably another 10m. I guess we will have to back and survey it! By removing the loose gravel in the floor of this passage, further progress could be made in the future to hopefully bypass the blocked sump of the main Tuglow stream. The tributary is just below the large phreatic-vadose passage of the overhead loop which used to take the main Tuglow stream. The large passage is presently blocked by rockpile, but the tributary may give access to the passage upstream of the rockpile.

## Exit via the Waterfall

Phillip, Chris and I quickly exited along the tributary passage to the main stream, which was followed down to the waterfalls. Ian, Alan and Scott had rigged the waterfall for abseiling, allowing a bypass of the upper chamber that instead requires a cold immersion in the Tuglow stream. An old ring bolt was used as a belay, with a 2m. tape bringing the rope to just above waterfall lip, allowing the rope to be pulled down easily (canyon style), without snagging as has happened before. The climbing down of the short waterfalls followed by abseiling of the 13m waterfall pitch is a real hoot and adrenalin pump. The rope was pulled down, and then we plunged into the water passing beneath the flowstone constriction and along the well decorated streamway all the way down to the sump. Surprisingly, we met up with Keir and Sue who had spent the earlier part of the day digging in one of the Horse Gully Sinks. They were taking photos using expensive looking camera gear, perilously close to the streamway. We were later to hear that Keir had accidentally dropped his flash in the stream, making it non-functional, and just to top it off, he opened the back of his camera without unwinding the film. The ladders and ropes were pulled up, and we emerged on the surface before dark.

We quickly packed up, filled the Subaru with gear and walked down the hill to the Kowmung River. The Subaru crossed without event, and we continued walking up the road to the cars at Boss Peak. The gear was unloaded, and rendezvous made for the Mt. Victoria Hotel. Another great weekend at Tuglow was over. The finding of some new passage, finishing the survey and abseiling the waterfall made this trip one of the most enjoyable I have had since commencing the SUSS Tuglow survey. Abseiling the waterfall and the plunge into the Tuglow stream should be made obligatory for all future SUSS trips to this cave!

## Tuglow Cave

Tuglow Cave now has 2 pretty solid looking gates, one just below the usual entrance and another on the vertical entrance which has a grate covering it. The gates are not locked at present, although I can see National Parks locking them soon.

The SUSS survey of Tuglow Cave has produced the following statistics:-

1948m of passage surveyed using suuntos/sistecos and fibreglass tape, and toposil down the 40m pitch.

20m of passage surveyed using the a general bearing of diving and ropelength in the upstream Tuglow sump by Keir Vaughan-Taylor (Scott, 1988).

The depth of the cave is 72m to the level of the sump from the level of the Tuglow doline. This figure is deeper than determined by Pavey in the Aust. Karst Index, which quotes a depth of 67+/-1m. This anomaly is so far unexplained.

The downstream sump in Tuglow is a likely diving site and is probably worth rediving, if only to determine the maximum depth of Tuglow Cave. Is 100m. depth a possibility?

Martin Scott

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*SUSS Bull.* 28(2), 9-11.

# LECHUGUILLA CAVE AND THE NSS NEWS

The NSS NEWS is the monthly magazine of the National Speleological Society. The NSS represents the majority of caving clubs in the USA in an intrinsically different way to the Australian Speleological Federation (ASF). The NSS is more of a top down approach whereas the ASF is bottom up (reflected in the terms "society" and "federation"). In the USA you are first and foremost a member of the NSS, and your caving club is seen as the local branch of the NSS and are all denoted "Grottoes". As such the NSS NEWS is basically a sprawling membership magazine that supplements the grotto's own local content (in its own magazine) with the USA scene. As an organisation it has had outstanding success. In contrast our ASF receives its loyalties second after the local club. If the ASF is seen not to serve the club's interests then support is often withheld and the ASF becomes a forum for inter club politics rather than speleological matters of national concern. I have the feeling that the ASF will only achieve its aims when it is perceived by its members to be a separate entity whose decisions do not smack of factionism and can always be seen to be in the best interests of Australian Speleology.

Anyway, ASF aside, the success of the NSS has enabled it to achieve many things. Amongst these is the regular cover photos of outstanding quality - many in full colour. Inside there are frequent feature articles on the major US caves as well as expedition reports and wrap-ups (primarily Mexico and Central America). Which happen to be just the sort of articles that interest international readers like SUSS. As librarian I thought I would distill some of these issues on any major international news from the USA in particular. Without a doubt the successful explorations in Lechuguilla Cave demand such an article.

## 1. INTRODUCTION

If you are not familiar with the US caving scene at all then there are a few facts you should know. Firstly it is home to the longest cave in the world: Mammoth Cave is 530-odd kilometres long! There are also some other caves in the vicinity of 100km in length such as Jewel Cave and Wind Cave, and numerous caves over 20km (by comparison Australia's longest caves have yet to officially register over 20km).

The deepest cave in the US is Columbine Crawl at about 1550ft or about 450m. Australian caves are not too far behind this at just under 400m deep but this is chicken feed on the world scale where the deepest is 1535m deep! The Americans know this and have been concentrating on the deep caves in Mexico with considerable success (as have the Australians).

## 2. LECHUGUILLA CAVE

Against this backdrop Lechuguilla Cave has emerged as the most significant discovery for a long time. The cave had been known about many, many years as mostly an entrance cavern with a strong breeze blowing out of breakdown. However big things could be expected as it is located in the Guadalupe Mountains in New Mexico, not far from the world famous Carlsbad Cavern, renowned for its size and beautiful formations.

Persistence in digging won out in 1986 and the cave has not

looked back. Every year sees at least one major expedition and every expedition has been responsible for major discoveries and breakthroughs. To date (as reported) the length of the cave stands at over 66km! And the depth at 1501ft! Thus it now in the short list of the US longest list and the second deepest as well - a very distinguished double. Furthermore the leads are not yet exhausted - ,so where it all ends no one knows!

Other things to note are that it is the first cave in this region to reach the water table and the first to have a flowing stream (it lies under a desert). It also has major development in every direction.

In spite of all this the singularly most important feature of the cave is the size, abundance, quality and uniqueness of its formations. This is what has had it featured on international news bulletins and magazines across the world, including at least three photos in the superb Speleo Projects calendar that features the best cave photos from all over the globe. This has put at the centre of a huge conservation battle between tourism development and wilderness status (wilderness seems to have won) that has meant the term "underground wilderness" has become a legal reality in the US - providing the protections afforded to the famous national parks.

Perhaps these following exerpts can convey the incomperable experience that is exploring in Lechuguilla.

*"Every trip seemed to bring exhilarating new discoveries. "Borehole Lust" and "Virgin Passage Fever" swept the camp like a smallpox epidemic!"*

*The delirium built upon itself until a fever pitch was reached. Then it would go to the next higher level, the memorable became commonplace and we began to believe that anything was possible. Hundred foot diameter rooms were a dime a dozen, large boreholes the only passages anyone would map, spectacular formations were unimportant, unless they were unique in the world or in extraordinary quantities. It was crazy, nuts, insane - and it was reality!"*

*"We surveyed and photographed until we almost fell flat on our faces from exhaustion. It would not end! We all now knew how Art Wiggins had felt on the previous trip, when he prayed the for the borehole to end so he could leave the cave!"*

I for one, will await further developments with a keen interest.

### 3. REFERENCES

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NSS News Nov. 1988  
NSS News Jul. 1988  
NSS News Dec. 1989  
NSS News Jan. 1990

Mark Staraj.

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## *1990 CAVERS BALL*

### **CAVERS ANNUAL DINNER & DANCE**

7.30pm FRIDAY 14TH SEPTEMBER 1990.

ANNE WHIGHT ROOM, LEVEL 1 MANNING HOUSE,

MANNING ROAD, UNIVERSITY OF SYDNEY.

Dress: Formal

Tickets \$25.00 each.

Drinks at student bar prices.

Tickets must be purchased before 7th September.

Tickets available at SUSS meetings, from SUSS committee members, or mail reply and cheques to

1990 Cavers Ball  
Sydney University Speleological Society  
Box 35, Holme Building,  
University of Sydney, 2006.

Enquiries: Mike Gibian - 660 2782h, 858 8177w.

Sponsored by the University of Sydney Union.

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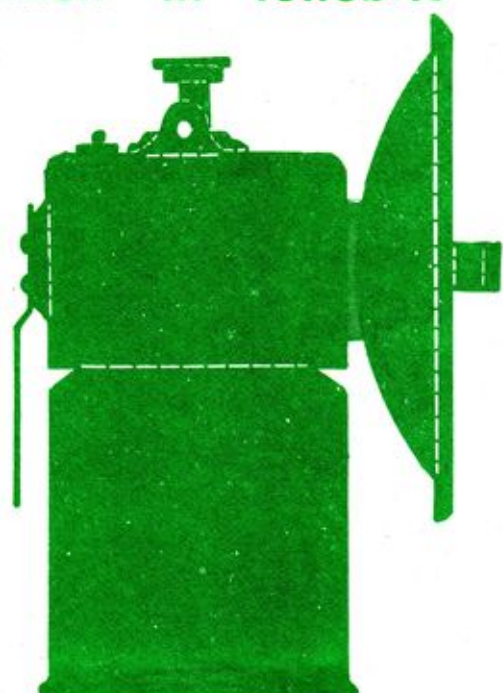
Phone -

Included is a cheque for \_\_\_ ticket(s) at \$25.00 each = \$

Tickets will be sent as soon as possible.

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Lumen in Tenebris



# SUSS

BULLETIN  
of the  
SYDNEY UNIVERSITY  
SPELEOLOGICAL SOCIETY

BOX 35, HOLME BUILDING,  
UNIVERSITY OF SYDNEY,  
N.S.W. 2006

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