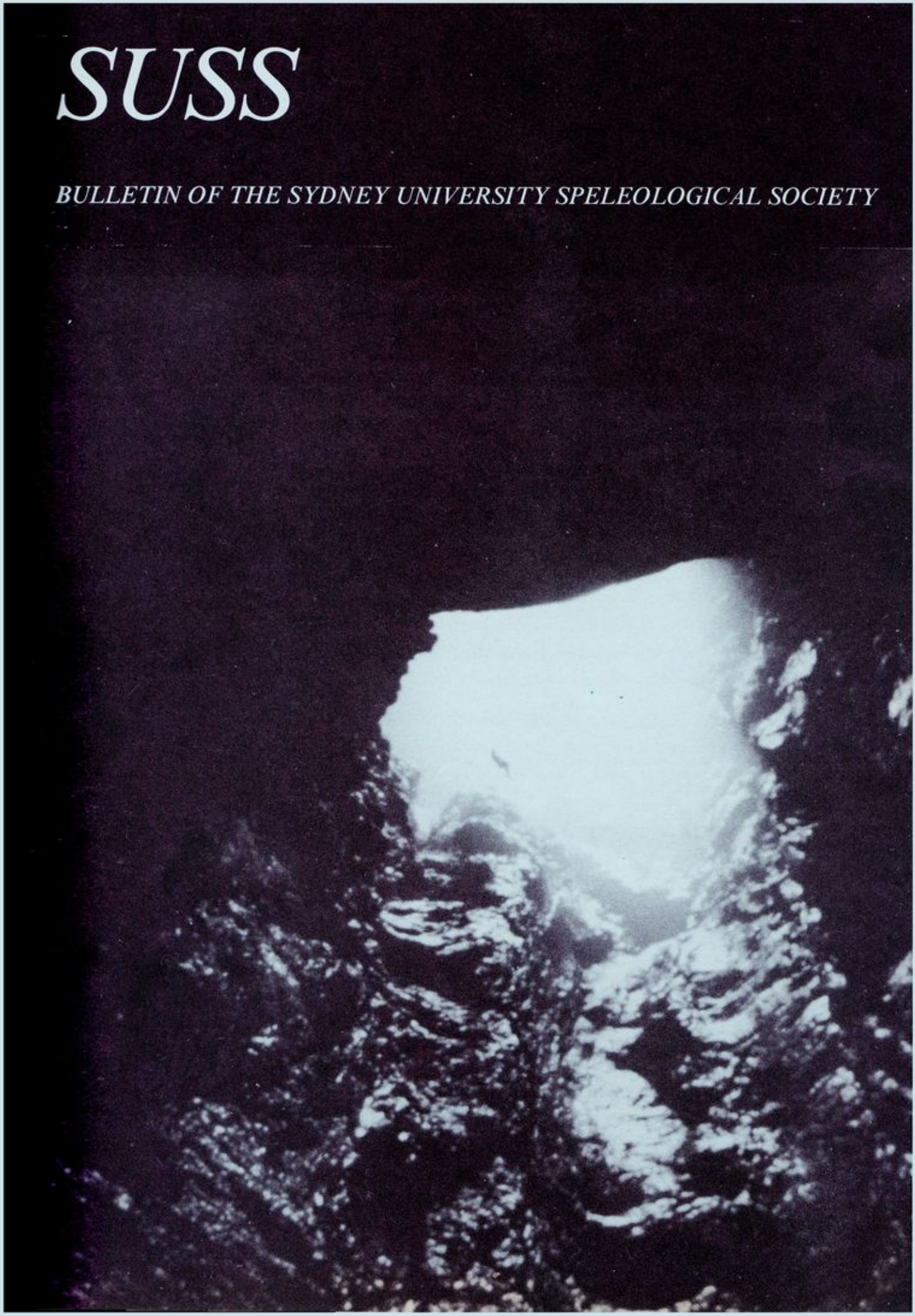
SUSS

BULLETIN OF THE SYDNEY UNIVERSITY SPELEOLOGICAL SOCIETY



Club Calendar

SUSS meetings are held at 7:30 pm in the Common Room of the Holme Building at Sydney University. Security arrangements have changed and it is now necessary to enter from Science Road at the sign to the Function Centre. It will no longer be possible to enter in front of the Footbridge Theatre via the gate at the front of the Holme courtyard. As usual, meetings are held on the first Thursday and third Wednesday of each month, except in the long vacation. There is no December or January meeting, and only one meeting on the first Thursday in February.

When?	What?	Details
17/18 Sep	Wellington	Cave Diving in Peppercorn Cave. For information, contact Keir Vaughan-Taylor 692.2770(Uni) or 519.9769(H).
Wed 21 Sep	Meeting	Martin Scott and Danielle Gemenis present a slide show on last summer's expeditions at Mt Arthur and Mt Owen, New Zealand, where a few deep holes were found.
24/25 Sep	Wee Jasper	This is an OTC trip. For information, contact Robert Brand, 957.6569(W), 018.225698(mobile) or 569.6258(H).
Tue 27 Sep	Committee Meeting	At Mike Gibian's home, 240 Pyrmont Bridge Road, Forest Lodge; 660.2782(H).
1/2/3 Oct	Jenolan	Mammoth, Spider, Wiburds Lake Cave, Serpentine, Southern Limestone, etc Mark Staraj 799.9438(H).
1/2/3 Oct	Wellington	Cave Diving. Keir Vaughan-Taylor 692.2770(Uni) or 519.9769(H).
Thu 6 Oct	Meeting	Ross Bannerman will show his long-awaited slide show on his South American adventures.
Sat 8 Oct	NSW Speleo Council	Meeting to consider the proposed Cave Classification System for Jenolan.
Sat 8 Oct	Party	Housewarming party at Pat's: 2/4 McLeod Street, Mosman. 960.4726(H)
15/16 Oct	Jaunter	Lots of new cave to be found and surveyed! Martin Scott 449.4092(H)
22 Oct	Speleosports	Organised by SSS, and to be held at Macquarie University.
Tue 25 Oct	Committee Meeting	At Mike Gibian's home, 240 Pyrmont Bridge Road, Forest Lodge; 660.2782(H).
Thu 3 Nov	Meeting	Martin Scott presents a slide show on Obscene Caving Areas.
Fri 11 Nov	Caver's Dinner	SUSS is hosting the annual Sydney Cavers' Dinner at the Courtyard Restaraunt (next to the Commonwealth Bank), Holme Building, Sydney University. (Just downstairs from where our meetings are usually held.) The Cavers' Dinner is a fun opportunity to socialise with cavers from a range of clubs. Cost is $22, including a surprise door prize. Money raised from the door prize will be donated to the Mt Etna Fighting Fund. There will also be a surprise guest speaker. Trust us! Persons interested in attending should contact Mike Gibian on 660.2782(H) or 858.8186(W). You must let Mike know well in advance if you want to come. Don't leave it until the last minute - at the SUSS 40th Year nearly 70 people left it until too late and missed out!
Wed 19 Nov	Meeting	Keir Vaughan-Taylor presents a slide show on our recent cave diving discoveries.
Fri 2 Dec	SUSS Xmas Party	Forbes Restaraunt, 155 Forbes Street, Woolloomooloo. $10/head, menu includes a wide variety of foods including fish, pasta and veal plus salads. BYOG. If you wish to attend, please contact Mike Gibian on 660.2782(H) or 858.8168(W). You must let Mike know well in advance if you want to come, because there is limited space.
3-6 Dec	Tuglow	More fun in Tuglow surveying, exploring and diving! Martin Scott 449.4092(H).
26-30 Dec	TROPICON	The biennial conference of the Australian Speleological Federation, to be held at Chillagoe, North Queensland.
Jan/Feb	Tasmania	SUSS goes south once again! Martin Scott 449.4092(H).

Cover Photo by Phil Cole: Rolf Adams abseiling the 176 metre entrance pitch into Harwoods Hole, Tataka Hill, New Zealand.

EDITORIAL

Don't they say that life begins at 40? Well SUSS is certainly alive and kicking. So far this anniversary year has been full of success and excitement, and promises to continue.

Birthday celebrations at Jenolan Caves in May were thoroughly enjoyed by everyone who attended, whether attracted by tourist caves, wild caves, wining and dining or chatting to old and new friends. The highlight of the weekend was the after dinner talk by Jack Kelly, SUSS's first president, who kept present members amused by tales of the spirit of early caving, when safety was a factor that came second place to exploring dark holes with only one inch rope (they didn't have any of this new 9mm stuff!). The presentation from one president to another of an original "helmet" topped the evening off.

Jenolan, of course, featured again prominently in SUSS news recently when the long-awaited break-through between Imperial Cave and Spider Cave was made through the rockpile and sumps. (See article within and video replays of the 7:30 Report for our heroes on the small screen.) The possibility of such discoveries inspired half a dozen other members of SUSS to acquire diving certificates. With a bit more experience under their (weight) belts, these may one day join the ranks of the cave diving fraternity within SUSS.

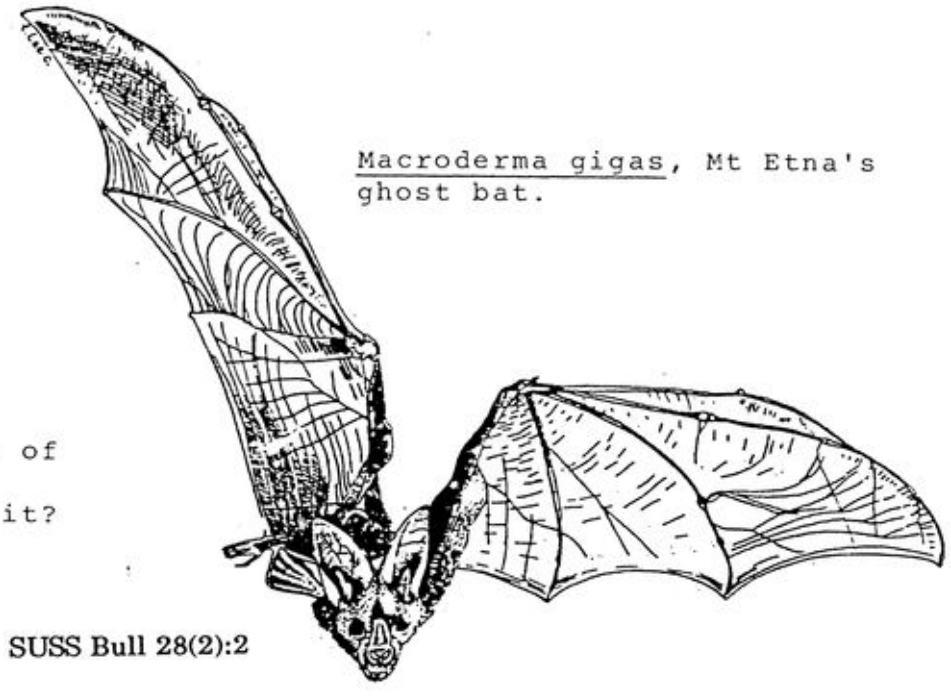
The Tuglow survey saga continues (and continues) but at least we know that a good job is being done by Martin et al. Wellington, too, is playing host to cave exploration (or should that read excavation?) with members hitting the local press.

Thanks to all those who turned up to the Mt Etna fund raising dinner at Macquarie University recently; a cheque for $600 was sent to Queensland and was gratefully welcomed. The situation at Mt. Etna is looking increasingly positive, and hopefully the Queensland Premier, Mike Ahern, will take steps to secure the entire mountain as a reserve.

The only bad news is that our traditional watering hole at the Forest Lodge Hotel is soon to be turned into a restaurant with piped music; the good old jukebox is being tossed, and maybe even the spacies will have to go ...

Anyway, keep up the good work because, there is LIFE after 40!

Sarah Gillis



Macroderma gigas, Mt Etna's ghost bat.

P.S. What do you think of the new cover? Impressive isn't it?

Noticeboard

SUSS 40TH YEAR CELEBRATIONS: From Friday 27 May to Sunday 27 May, 1988, Jenolan Caves played host to SUSS's 40th Birthday Party. The 40th Year Celebrations included caving trips, show cave inspections, a slide show put to music in the Cathedral Cavern of Lucas Cave, a BBQ, a dinner in Caves House, and many impromptu parties. 150 past and present members and friends attended. Everyone had a superb time and there were even calls to do it every year! (Certainly the organisers would die an early death of exhaustion.) Caves House management's fears that we would not be able to fill the 150 spaces were proved hopelessly unfounded: unfortunately the "waiting list" ballooned to nearly 70 unfortunate individuals who could not be accomodated. The weekend was organised with a view to minimising the cost for those attending, and on a buget of $10,077 a small profit ($148) was made. There were many highlights of the weekend, but two deserve particular mention: First, the speech by Professor Jack Kelly, the first President of SUSS, will be remembered by all who attended for many years to come. Secondly but more importantly was the spirit of the weekend. SUSS has always grown by the introduction of new "generations" of cavers every few years from the ranks of freshers. As Professor Kelly remarked, it is the encouragement (tolerance?) of freshers which over the years has kept the club vigorously growing. On that weekend there was a feeling of unity and camaraderie among all of those "generations", even though they are seperated by up to 40 years of SUSS history.

Above: Photo by Bruce Boardman: Mike Lake, President of SUSS (1981-2), on behalf of the present generation of SUSS, presents a length of 9mm rope to Professor Jack Kelly, founding President of SUSS, after Professor Kelly's speech at the dinner of the 40th Year Celebrations.

SPIDER/IMPERIAL CONNECTION: The other major party at Jenolan happened on 28 August 1988, when a connection between Spider Cave and the Imperial streamway in the Jenolan Show Caves System was made via the unstable stream-level rockpile, Rubble Trouble. The connection is extremely significant, principally for two reasons. First, it makes possible one of Australia's most varied and spectacular through-trips. Second, along with the voluminous data emerging from the survey of the Jenolan Show Caves System, it raises the question of whether the system is now the longest cave in Australia. For full details, refer to the Trip Report contained in this Bulletin.

The link-up created quite a deal of interest at Jenolan, in caving circles and in the media. The Sydney Morning Herald and The Australian Financial Review reported the connection. Radio Station 2JJJ interviewed Mike Lake and I about the link-up and caving generally, and the ABC's 7:30 Report ran a 10 minute story on the link-up on Wednesday 7 Spetember, 1988. The 7:30 Report programme was video-taped and will, no doubt, be shown at a future SUSS meeting for those who missed it.

BARALONG DIVING EXTENSION: At the other end of the system, the going has got much tougher. On 4 September, 1988 a diving party pushed beyond upstream sump 3 in Baralong Cave further into the Southern Limestone. The next sump encountered is impassible, but fortunately is very short and easily by-passed via a short, dry tube which runs above the sump. Sump 4 is a submerged phreatic maze which was penetrated about 20m until it constricted to the point where it became impassible. In the zero visibility that followed, it was not possible to find a way on. Above the sump is a steep lead which was climbed by Keir Vaughan-Taylor, but the lead died. The trip, which took some 12 hours, was very tiring. Whilst the Baralong is not dead, it is now apparent that the way into the "Southern Limestone Master Cave" is not at all straight forward, and further progress will only be made after much effort, by divers with very low-profile equipment.

JENOLAN PLAN OF MANAGEMENT - CAVE CLASSIFICATION SYSTEM: An objection has been lodged with the Jenolan Plan of Management Steering Committee to the proposal to introduce a cave classification system at Jenolan Caves. The New South Wales Speleological Council, which consists of a representative of each caving club in NSW and the ACT, will meet on 8 October 1988 to consider the classification system. The Council will vote either to adopt and ratify the objection or to reject it. For further information on the case against the classification system, contact the committee.

WELLINGTON - PEPPERCORN CAVE: The underwater exploration in Peppercorn Cave has yielded a major new lead. The original diving lead was pushed to an end at a collapse, and all of its air domes had been explored as far as possible without resort to scaling poles. (It is interesting to note that in one air dome containing a high aven, the floor is covered in fresh bat guano, and a bat was seen, implying an as yet undiscovered surface connection or a new species of SCUBA-bat.) Subsequent exploration has yielded a major new underwater passage running in an entirely different direction to the original lead. The new passage extends another 100m or so with no air domes yet found, and no end yet in sight. The extensions to Peppercorn cave this year have extended the Cave to the point where its submerged passages rival Cathedral Cave both in length and volume.

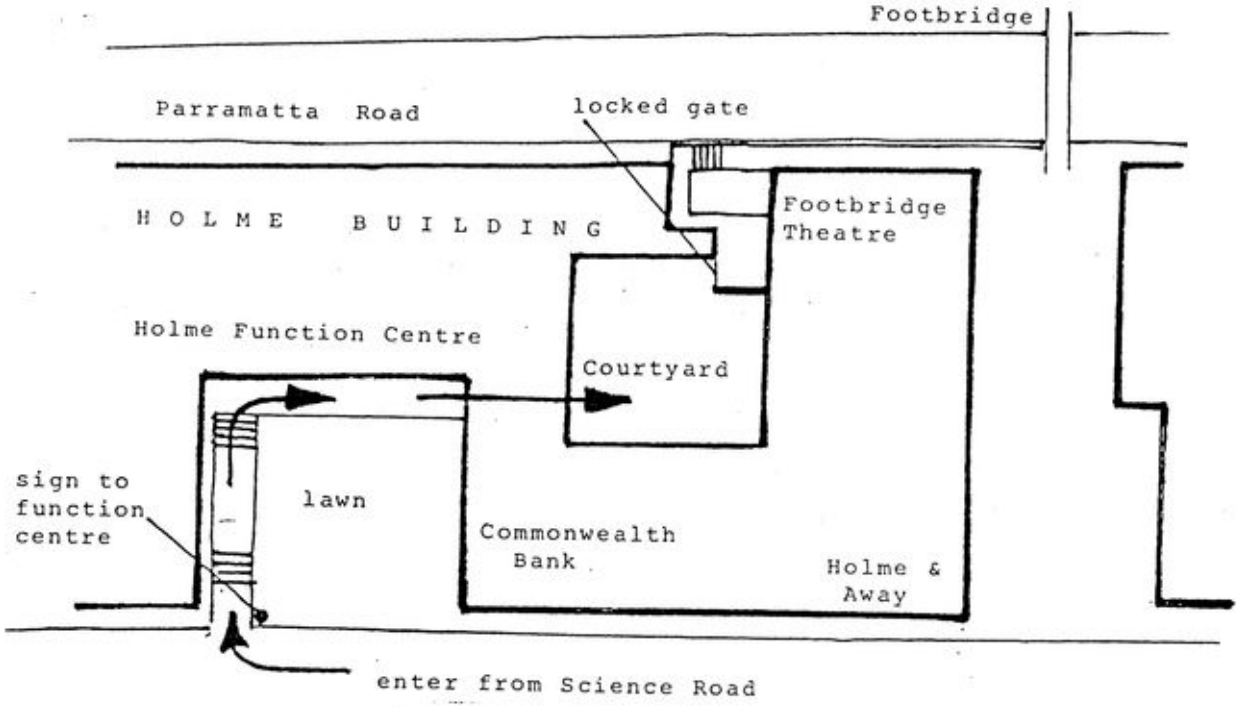
WELLINGTON - LAKE CAVE: The other major news from Wellington is the re-discovery of Lake Cave. Lake cave was buried some 30 years ago under a then newly constructed Caravan Park. Using maps drawn by Oliver Trickett many years ago, Armstrong Osborne surveyed to the approximate location of the buried entrance to Lake Cave. A SUSS trip led by Tony Allan visited Wellington and attempted to uncover the entrance with a back-hoe supplied by Wellington Shire Council. At the end of the day, the cave entrance remained hidden but the Caravan Park had begun to resemble a lunar landscape. Subsequently, Armstrong Osborne uncovered the entrance (with the back-hoe) - it was a mere half metre from one of the trenches dug on the previous trip.

MT ETNA: In May, Central Queensland Cement (a fully owned subsidiary of Queensland Cement Limited) drilled holes in preparation for blasting near the significant caves Elephant Hole and Speaking Tube on the cavernous face of Mt Etna. Cavers and Conservationists responded by "going underground" - sitting in these and other nearby caves to prevent their destruction. The company initially adopted a waiting approach hoping that the blockaders would run out of food and leave the caves. Later, security guards were employed, but they proved ineffective. The security guards only ever suceeded in catching journalists, not cavers, and they didn't venture into the caves at all. The blockade lasted 42 days during which time all mining at Mt Etna ceased. The company called for a meeting two days after Andrew Robson's threat to sue over the share transfers (see below). The meeting was held in Brisbane during the fifth week of the blockade. At that meeting an interim agreement was reached, whereby the company agreed not to mine on the cavernous face for two months. During the two month period, Conservationists compiled a detailed report on the environmental and heritage values of Mt Etna, including consideration of the endangered ghost bats, hydrology, vegetation and the heritage significance of the caves. A report on the changing economics of the Queensland cement industry was also prepared. A large number of academics and other interested people contributed to the report, including Ernie Holland (Senior Guide, Jenolan) who prepared the section of the report dealing with the receation potential and heritage significance of the caves, and possible management strategies for a Mt Etna National Park. The report was well received by the company and the Queensland Government, and the moratorium agreement has been extended. Over the next few months, local cavers will have to be vigilant and monitor the situation to ensure that the moratorium is not violated. All going well, there is room for cautious optimism that victory in the battle to save Mt Etna is at hand. However, I cannot overstress the importance of vigilance! In addition, funds are still needed because the various Mt Etna funds are in debt as a result of the campaign to date.

MT ETNA - THE POSITION OF THE QUEENSLAND GOVERNMENT: In April, shortly before the blockade, a political submission was made to the Queensland Government. The submission was a detailed document covering many aspects of the Mt Etna issue. It apparently had the beneficial effect that the Queensland Government took a step backwards from unqualified support for the company and effectively became neutral. This has enabled a great deal of political pressure to be put on the company. In recent times the Government appears to be swinging to our side. It seems the key questions still to be solved are political: How does the company get out without losing face? And how do you shed 100 or so jobs without political damage to the Government, which would lose the local seat (Broadsound) if it suffers a swing of less than 0.5% of the vote?

QUEENSLAND CEMENT LIMITED (QCL) SHARES: As part of the Mt Etna "battle", Andrew Robson of UQSS purchased a parcel of some 200 shares in QCL, and transfered 199 of them to various cavers and conservationists around Australia. QCL subsequently refused to register the 199 transfers, and wrote to each of the transferees (the people who bought the shares) informing them of its decision. QCL purported to rely on certain provisions of the Australian Stock Exchange Rules to justify the refusal to register the shares. Andrew Robson obtained legal advice that the refusal to register was illegal because the Australian Stock Exchange Rules do not apply to transactions which take place outside of a stock exchange. (You may remember that the some of the transfers took place at a SUSS meeting, which, although full of high-flying tychoons yelling at each other, is not a stock exchange). Andrew was also advised that even if the Stock Exchange rules applied, the refusal was still illegal because the company did not provide "the precise reasons" for its decision to refuse to register the transfers "within 10 days". The company unsuccessfully attempted to cure the illegality created by its failure to give reasons by belatedly sending a second letter to the transferees setting out its reasons for its refusal to register the transfers. The second letter should have been titled "QCL shoots itself in the foot" because it is an admission that no adequate reasons were provided within 10 days of the original refusal. Legal action on the share transfers has been postponed during the moratorium period. However, the possibility of injunction proceedings will be kept "on ice" until the whole of Mt Etna is secured inside a National Park.

NEW ARRANGEMENTS FOR ACCESS TO SUSS MEETINGS: The arrangement for access to the Common Room for SUSS meetings has changed. It will no longer be possible to enter the Holme Building in front of the Footbridge Theatre via the gate at the front of the Holme courtyard. We will have to enter from Science Road at the sign to the Function Centre and around the Commonwealth Bank. As usual, meetings are held on the first Thursday and third Wednesday of each month, except in the long vacation. There is no December or January meeting, and one meeting on the first Thursday in February.



CONGRATULATIONS! to Mike Lake who recently submitted his PhD thesis in applied physics. Mike's thesis was entitled "The Electronic Properties and Microstructure of Hydrogenated, Flurinated and Chlorinated Amorphous Silicon". Mike has subsequently commenced a new job with AWA working on development and production of high-tech silicon chips. We also wish him well with his new job.

PARTY! A housewarming party will be held at my flat, 2/4 McLeod Street Mosman, on Saturday 8 October, 1988, beginning at 7:30pm. BYOG.

CAVERS' DINNER: This year SUSS is hosting the annual Sydney Cavers' Dinner which will be held on Friday evening, 11 November, 1988, at the Courtyard Restaraunt (next to the Commonwealth Bank) at the Holme Building, Sydney University. (Just downstairs from where our meetings are usually held.) The Cavers' Dinner is a fun opportunity to socialise with cavers from a range of clubs. Cost is $22, including a surprise door prize. Money raised from the door prize will be donated to the Mt Etna Fighting Fund. There will also be a surprise guest speaker. Trust us! For further details including the menu, see the insert in this Bulletin. Persons interested in attending should contact Mike Gibian on 660.2782(H) or 858.8186(W). You must let Mike know well in advance if you want to come. Don't leave it until the last minute - at the SUSS 40th Year nearly 70 people left it until too late and missed out!

SUSS CHRISTMAS PARTY! Instead of the December meeting, the SUSS Christmas party will be held on Friday 2 December, 1988 at Forbes Restaraunt, 155 Forbes Street, Woolloomooloo. Cost is $10/head, menu includes a wide variety of foods including fish, pasta and veal plus salads. BYOG. If you wish to attend, please contact Mike Gibian on 660.2782(H) or 858.8168(W). You must let Mike know well in advance if you want to come, because there is limited space.

Pat Larkin

SUSS IN THE NEWS AT WELLINGTON

GET THE FULL STORY ON WATER CAVE AND CAVE-DIVING MEGADISCOVERIES IN PEPPERCORN CAVE AT WELLINGTON IN A SUSS BULL SOON!

Cave mystery remains

By GRANT HATCH

THE mysterious Wellington River Cave continues to clude searchers. It had been hoped that meticulous caving journals drawn up 25 years ago by Bathurst speleologist Eric Tanner may have thrown light on the secret of the cave's location.

But according to Wellington Shire Engineer turned cave sleuth Peter Gesling, while Mr Tanner's documentation did pinpoint a submerged cave, he is certain it is not the river cave which was stumbled over in dusty council records from last century.

In fact, Mr Tanner's description coincides with a cave unearthed only recently by speleologists from Sydney University which they believed they had discovered for the first time.

While his information may have deflated the thrill of the find, the searchers are more than pleased with the information which Mr Tanner volunteered as it allows them to build a far more complete picture of the limestone labyrinth in the Wellington area.

They are appealing to anyone else who may have knowledge of the caves to come forward. They would especially like to hear from people who explored in the 1920s and 30s when the River Cave was last mentioned in records.

Although searchers appear to have struck another dead end, they have not given up, and have decided to rejuventate their efforts with the injection of some young blood.

When the Sydney University speleologists return to the fray at the end of the month they will be joined by a task force of talented students from schools across the Orana region.

Armed with new information from the chief guide at Jenolan Caves, Ernest Holland, the guidance of a Land Department survey based on the nineteenth century records and the confidence that they are getting closer, the searchers hope to make a breakthrough on that weekend.

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New hope offered in cave mystery

By GRANT HATCH

A BATHURST man believes his 25-year-old caving journals could hold the key to the mystery of the lost Wellington River Cave.

Speleologists from the University of Sydney and the Wellington area last month failed to unearth the forgotten cave using council maps from the last century.

Cave enthusiasts are keen to re-discover the unique water-filled cavern which was buried and forgotten several decades ago when a caravan park was established at the caves site, east of the central west of town.

Shortly before that, Eric Tanner, a keen speleologist and part-time CSIRO bird-bander, moved to Dubbo from Kempsey, where he had just started a caving club.

The Wellington district with its bird life, historic phosphate mines and relatively untouched limestone caves, held a great fascination.

After each exploratory venture, the ardent observer of nature made meticulous notes in his journal. His interest and enthusiasm paved the way to a special friendship with the caves caretaker at the time, who amongst other things showed him a wall of natural stone and brick.

Behind that wall, the caretaker told him, was a water-filled cavern which few people had entered. Because of the difficulty of negotiating the murky labyrinth, the cave had been sealed and served the function as an underground tank for water for his gardens and animals caged in the reserve.

Over the years, memories of Wellington faded, until Mr Tanner saw TV news coverage of the quest to rediscover River Cave. Visions of the entrance and pacing out its boundaries were immediately rekindled and he dashed off to rummage for his old journals.

There, sure enough, were the notes and the map, which he hoped could shed some light on the cave.

Of course, it was hard to orient the TV pictures and it was some 22 years since he had been in Wellington, but it appeared the searchers were excavating too deep and were at least 20 metres off target.

"It was right there on the surface," he warned shire officials when he contacted them the next day. "If they cruise backwards and forwards in a D7 bulldozer or something like that they are likely to fall right into it".

"While it was a long time ago, I've got no reason to doubt my map or figures I had on it at the time. In those days it was a widely-known fact where the cave was".

Mr Tanner's data has injected new vigour into the search which was relying on information almost a century old.

But other than the telephone contact and copies of his journal, Mr Tanner doubts that he could be of further assistance.

"In those days it was on flat, open ground below the caretaker's house.

"Now I've got no idea what is there these days, so it would be very hard to pinpoint.

"If it was in natural bush I'm quite certain I could walk up and say 'right, there!', but if they have got man-made things all over the place, then I'm not all that certain that I could locate it".

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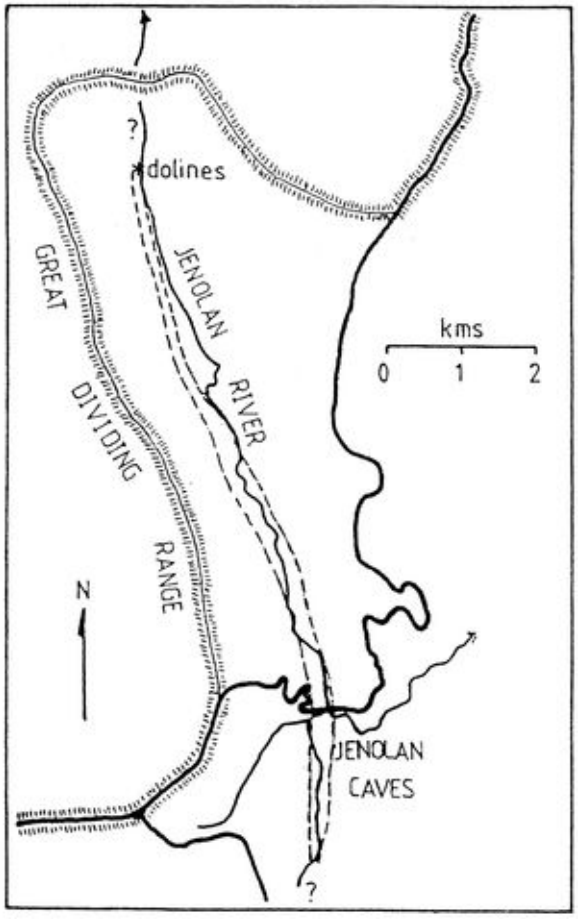
Dolines north of Jenolan

Tony Allan and Martin Scott geologising at Jenolan Caves - 25/4/88

Martin Scott

With no permit and no caving trips on a long weekend, something had to be organised. So why not go to Jenolan to go rock hunting, as part of Tony's continuing Masters degree. Unfortunately, we got sidetracked on the way and arrived at Keirs place for a few drinks. Not to worry, we won't be long, just a few drinks. All plans were forgotten when we woke hungover late on Sunday morning in Keirs lounge room. Most of the day was then spent travelling rather uncomfortably in the "Banger", complaining of the bloody tourists on the road and a severe case of dehydration in the heat. Eventually we got to Jenolan, passing the masses at the Pig Farm, and tramped up the hills in search of the Eastern Limestone for sampling. The following morning was spent wading in the Jenolan River downstream of the Pig Farm, sampling some more of the Eastern Limestone for conodonts. So who wants to carry packs of rocks all weekend?, lets go up to the head of the Jenolan River at the Great Dividing Range and search for limestone (see map).



The Edith 1:25,000 topo map shows a doline at G.R. 773613, beside the Jenolan River. Access to the area is quite easy as it is not far from some good forestry roads and beside the Jenolan River Fire Trail. So we headed south down the trail with both of our eyes peeled for limestone from the relative comfort of the 4WD. The doline marked on the map was not found, but opposite a dam of the Jenolan River at G.R. 774608 is an outcrop of limestone with two dolines 5-10 metres in diameter and 3-4 metres deep.They have been described and sketched (map I) by Dunkley [SUSS BULL 12(7), reprinted SUSS BULL 26(2)], but unfortunately the dolines were choked with vegetation and no caves could be seen. Although lacking in caves, they are interesting in that it is the most northern outcrop of the Jenolan Limestone, and it contains dolines suggestive of underground drainage nearly 8 kms from Jenolan Caves. Does the drainage continue underground southwards for this distance or does it flow north under the Divide towards the limestone at Duckmaloi? Does the Jenolan River capture water from the other side of the Divide? More problems to speculate on in the little understood but thoroughly fascinating Jenolan karst.

Fig.1 Limestone at Jenolan Caves.

To Hell and back dragging a detonated bomb in Tuglow

Tim Atkins, Steve Burns, Kate Devine, Igor Jazbec, Chris Morris, John Morris, Brad Nathan, Martin Scott (T.L.), Keir Vaughan-Taylor. Wed- Fri 1-3 June 88.

Introduction

The last trip planned to Tuglow over Easter turned into a debacle, with a broken axle and torrential rain over the whole weekend putting an end to any plans to visit this absolutely marvellous cave. Understandably we were all going crazy in the ensuing months awaiting a permit from NPWS, so much so that I decided that I was going to free dive the unexplored upstream terminal sump. Our sanity then became even more doubtful when our initial permit application was rejected, even though it was for the middle of the week. A second application was accepted at the last minute, and permission from the owner of the Horse Gully Sinks to camp on his private property was granted while on our way to Oberon NPWS to pick up the permit.

Steve met Brad and I at Boss Hill on Tuesday night, where we camped before walking all our gear in for three days plus the rigging gear for the cave. Eventually we reached the Horse Gully Sinks, after crossing the high Kowmung River using a rope as a handline. The handline wasn't enough support for Steve as he slipped and would of fallen into the river if it wasn't for a well placed boulder in the middle of the torrent. Camping at Horse Gully Sinks is rather good as it is not too far to the cave entrance or water, and you are surrounded by dolines with the added attraction of Tuglow Cave somewhere not far below you. John, Chris and Tim arrived about lunchtime and after much procrastination we entered Tuglow.

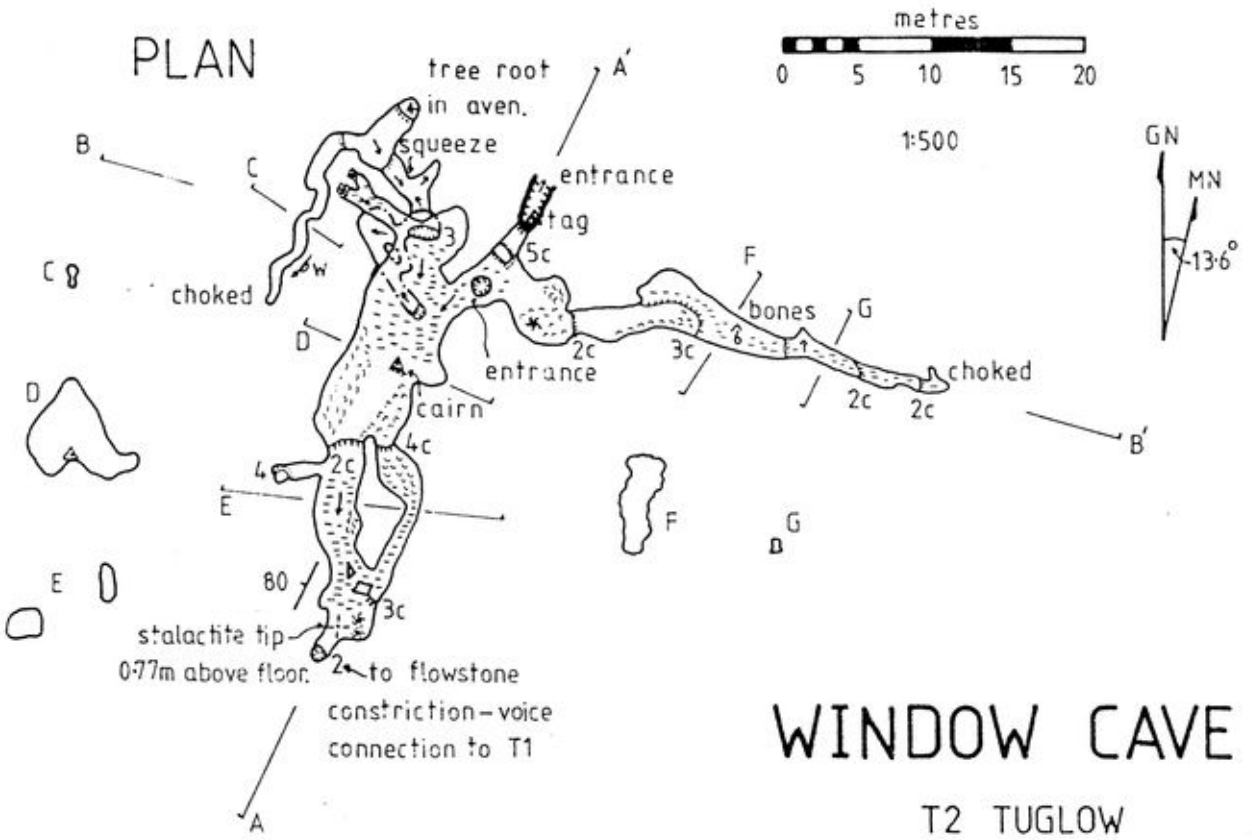
The golden rule in surveying is always leave the most revolting and strenuous passages until later, so this trip was to include some of the most inhospitable nightmares ever imagined. The first on the agenda was surveying along the the very wet streamway (up to your neck in freezing wintery waters) below the waterfalls. Tim and Brad sensibly decided to take the dry route back to the ladders, while the rest of us braved the waters in our thermals. This was a mighty effort as we swam through the pools, Chris and Steve on the ends of a tape, John with the suuntos under his helmet to keep them dry and I biting the survey notebook above the water level. One advantage of surveying in freezing cold water is that it normally gets done at rapid speed, so it was only a couple of hours before we emerged from the streamway, and then out of the cave, back to one of Tim the pyromaniacs' blazing fires.

The cask of port was most welcome after todays caving, and it didn't take long before we were completely zonked, in fact so out of it that I didn't even stir in my sleeping bag when Keir, Kate and Igor arrived during the night and put up their tents. Lucky the fire resembled a bonfire or they probably would not of found us, due to Keir leading them into the bush and getting completely lost, and on a brightly lit full moon night too! An easier day of surveying was decided for Thursday, while Keir, Tim and Brad brought the dive gear up from Keir's car beside the Kowmung River in preparation for the big push trip on Friday. The rest of us spent the day surveying Window Cave.

Window Cave (T2)

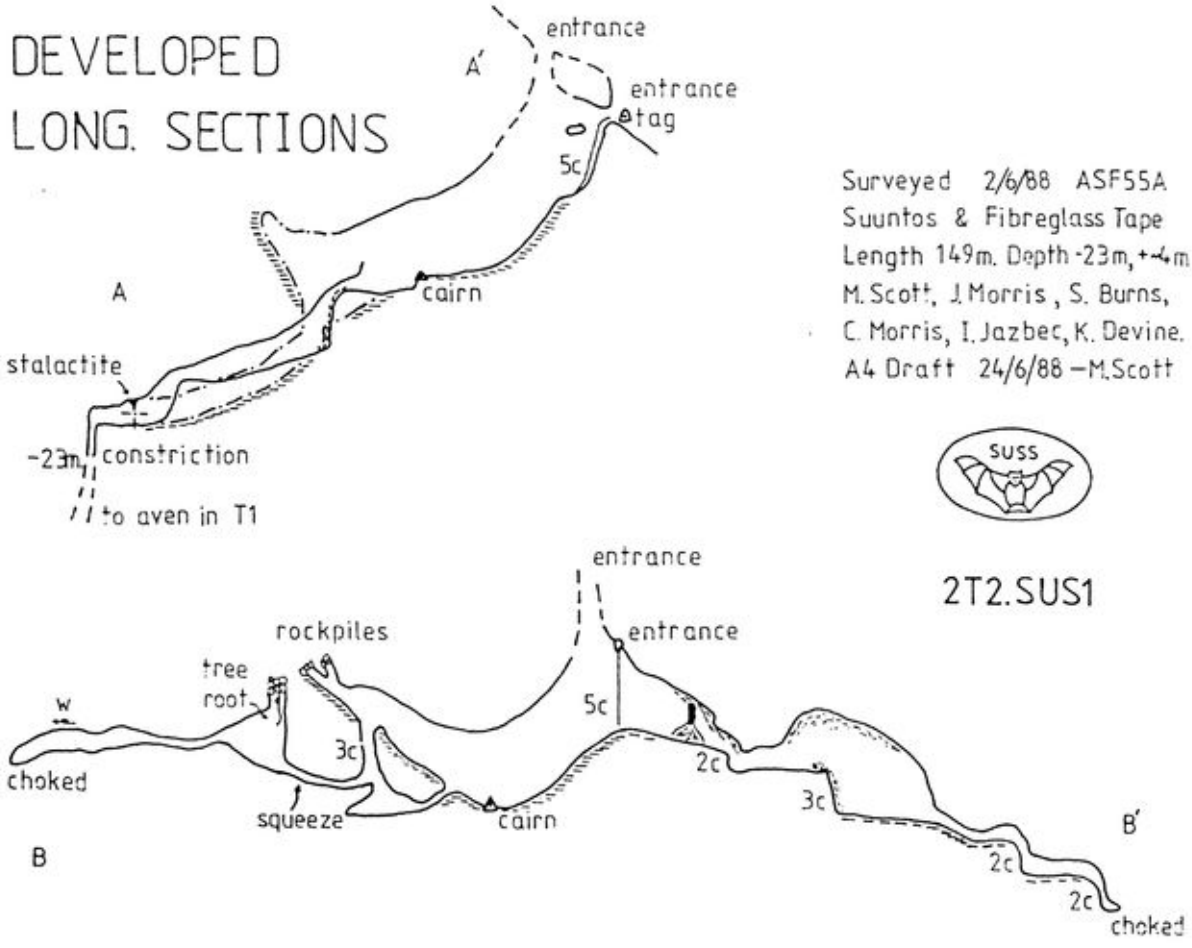
Window Cave (see map) is entered through the obvious entrance beside the track from Tuglow Cave down to the Kowmung River. A 5 metre tape climb from the keyhole entrance leads down to a large entrance chamber from which three obvious passages lead off. High-roofed passage heads southwards, becoming smaller in dimensions until a flowstone constriction at the base of a 2m hole. Through the constriction a voice connection was made with the aven above the large chamber above the downstream sump, but the best chances of a new entrance into Tuglow through Window Cave remain with the powdermonkey. The passage to the west off the the entrance chamber leads down a short tape climb, and through an awkward squeeze to a small chamber with a thick tree root in the roof. A narrow passage leads off and eventually terminates, although it is heading towards old passages above the downstream sump in Tuglow. To the east of the entrance chamber the passage drops gradually until it chokes out, but also heads towards an old streamway passage in Tuglow Cave.

Window Cave contains a lot of sediment which contains many small bones that have been washed into the cave when it must of received a stream from the surface. The cave is quite dusty due to the sediment build up that is typical of the caves in NSW, but in complete contrast to the clean washed Tuglow Cave. The passages in the cave parrallel the development of Tuglow Cave and the two caves were no doubt connnected in the past in more ways than through the flowstone constriction.



WINDOW CAVE

T2 TUGLOW



Surveyed 2/6/88 ASF55A
Suuntos & Fibreglass Tape
Length 149m. Depth -23m, +-4m
M. Scott, J. Morris, S. Burns,
C. Morris, I. Jazbec, K. Devine.
A4 Draft 24/6/88 – M. Scott

SUSS

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Diving the Upstream Sump in Tuglow Cave

When you know that you are going to have a long day caving you always spend more time wasting time than you thought imaginable! After getting all the diving and surveying gear together and then having another cup of tea, we got into the cave at about 11:30 with an enormous day and night ahead of us. Everyone was saying it was going to be an epic even before we even got into the cave! Our cavediving leader Simon McCartney hadn't turned up earlier in the week even though there was this beautiful virginal sump that just looked like it was going to be a short freedive leading to hundreds of metres of untouched passages beneath the limestone at Horse Gully Sinks. Instead Keir took up the challenge, even though his broken leg hasn't healed completely yet, and we got lumbered with carrying his old large and heavy airtank (not the usual size for pushing sumps in long caves) to the very end of Tuglow Cave where Ian Cooper and I had surveyed to on the last trip [SUSS BULL 28(1)].

Passing and lowering the tank through the rockpile and down the pitches took some time as we had to be careful not to knock the top of the tank, as there would probably be none of us or let alone the cave left if the air trapped in the tank was released under all that pressure. Slowly the tank and all of us made it up to the large upper chamber, and then we sped through the cave until the roof gets lower so that you have to crawl through the water, which is made all the more uncomfortable dragging an air tank. Igor and Chris were carrying the tank between them when suddenly a loud hiss of air escaped from the tank. Instantly everyone was evacuating the scene getting as far away from the air tank that was about to explode. Thank goodness it was a false alarm as thay had only tapped the valve against a rock letting out air as per usual and John came to his senses and turned the tap off.

We continued on, with the going getting slower as you have to slither through the streamway over the river gravels with the roof against your back while dragging the tank aswell! Finally we arrived at the long pool that you have to get completely wet in, crossing as quickly as possible onto the bank before the upstream sump. Huddled together beside the sump we ate all of our food, shivering trying to get warm and waited solemnly as Keir got his diving gear on. He dropped into the unexplored sump and continued out of sight while we listened to the clanging of his air tank on the sump roof. Keir dived for about 20 metres before turning back and resurfacing much to our relief. The sump continued deeper beyond the limit of his exploration making it a more serious dive than we had all hoped.Lucky I didn't get a chance to free dive the sump as this would appear to be limit for non-cavedivers in this part of Tuglow Cave, and a return visit with a couple of serious divers is needed.

Everyone who was feeling like they would rather be somewhere else, preferably warmer and dryer, waded back across the pool with the diving gear in tow, leaving Steve, John and I to survey a few upper leads above the upstream sump. Greg Wilkins had previously explored some of these but only cursorily before his light died on the last trip. We surveyed the passages which are fairly thin in width and show a pronounced vertical vadose development. Scalloping on the walls indicates that water has flowed downwards from a number of avens, the highest of which was surveyed up to 11 metres above the level of the sump. This aven had not been climbed before as I had to remove some rocks to climb up through an awkward squeeze. The roofs of the avens are all filled with river gravels and other stream sediment, and the surveys suggest that it is 10-15 metres below the valley of the Horse Gully Creek. An RDF survey would be able to pinpoint a digging site to create a new entrance to Tuglow Cave and a fantastic through trip.

The three of us finished the surveying and bolted through the cave, in pirsuit of the others carrying the air tank. They made quick progress out of the cave as we did not catch them until the ladders, where they were pulling up the air tank. At about 7:30 all of the gear and our tired bodies were out of the cave and we returned to the campsite where Tim had got one of his great raging fires going again. All of the remaining food was devoured or burnt to lighten the load back to the cars and we started driving back to Sydney at 10:00pm. This is the time of the night after a day like this one that you would rather not be driving on the roads, risking your life with your delirious state of consciousness. Nearly an epic but not quite.

Martin Scott

Gurgles from Mammoth Cave, Jenolan

LESSER APRIL FLOOD 1988

Present: Mark Staraj (TL), Kathleen and John Kaye, Steve Burns, Jonathan Miller, Kevin Moore, Jim Arundle, Simon McCartney, Patrick Larkin, John Delasauna.

Pat Larkin arrived late, so the afternoon was well underway by the time we entered Mammoth Cave...could this be right? Did we really pass a vote of no-confidence in Pat, and give him and his misbegotten Spider Cave ideas a refreshment in Blue Lake? Alas! We live in hope! However, if we had pursued original plans to ferry diving gear into Spider Cave for a push on the upstream sump, it would have been just as effective. The Jenolan River was sinking outside Spider Cave and flowing into Dingo Dig, so we headed off into Mammoth Cave while the divers frollicked in the Imperial Streamway.

It was an eerie feeling descending into the Entrance Cavern below the stream flowing outside. You felt that at any moment water was going to well up from underneath, like a Poseidon Adventure. It didn't take long to reach the water. A healthy stream was flowing from the direction of Cold Hole, and making the Forty Foot look decidedly wet. Flow was very roughly 9 millicumecs (or 0.3 cusecs). The water came from further up the passage than Cold Hole, flowing out of a joint plane fissure into the passage just beyond the branch to the "Shredder" Squeeze. Back we went, through Cold Hole to see Sand Passage. A large pool of water blocked the Sand Passage about 8m from the entrance and 3m below it. Some water could be heard falling into it. I decided it looked as though Sand Passage was losing water through joints to supply the stream down the Forty Foot. Apparently, Ernie Holland, the Senior Guide, had (independently) reached the same opinion.

We then proceeded to see Central River, via Davey Jones Locker and the Unsurveyed Connection to the bottom of the deep rocky cavern beyond Skull and Crossbones. The scene was amazing! Water was literally thundering in a 3m waterfall from the direction of Central Lake, and frothed and boiled towards Ice Pick Lake at a fast pace. My guess at the flow would be roughly 7.4 cusecs. With some bravado and an instant regret at the lack of cameras, three of us spanned the waterfall to a chockstone at the start of the tall Snakes Gut rift. Although it would have been possible to chimney a further 10-15m to the next chockstone, a fall into the torrent 4m below would have been wet, to say the least. The water showed no signs of backing up, in fact, 2m away from the base of the waterfall the ground did not seem wet at all. In retrospect, it was a pity that we did not try access downstream from this point via Naked Lady Chamber as Steve Burns suggested. It was getting late. Large patches of what appeared to be fungal growth was evident in parts of the Railway Tunnel, in particular near and in the Skull and Crossbones passage. The fungi were of the order of 5cm or so across, and they stood up to 2cm high, pure white in a sunburst form.

I was keen to see what was happening at the bottom of the 40 Foot. Ruling out the 40 Foot due to the stream that was flowing down it, I felt the Rockpile would be open but everyone was keen to try out Mammoth Squeeze. Passing through Conglomerate Cavern there was no evidence to indicate the flood...until we reached the Mammoth Squeeze. A pool covered half the cavern and half submerged the Squeeze. Since the party possessed neither snorkels nor Rolf Adams, we decided to potter around 15m or so of unmapped passage nearby. We left Mammoth after 7.00 pm.

On Sunday, another party (Simon, Pat, John, et al) found the waterfall still flowing.

Floods of the Past:

Perhaps the greatest flood recorded in the SUSS Bulletin was that of 21 June, 1975 (B. Welch, 1975). On that occasion, water flowed through the Devil's Coach-house (DCH) with enough force that the debris bent the handrail of the footbridge at its southern side! The flood submerged the entrance to J16 (Bow Cave) a flood swallet for Mammoth Cave, implying a near maximum inflow of water into the Mammoth Cave system.

On Sunday, 22 June, 1975, Mammoth Cave was entered and it was found that the Forty Foot and the Rockpile were impassable due to water, and Mammoth Squeeze was full of water. The last is noted as an exception to previous flood observations in Mammoth Cave. The tube which leads to Central Lake at the beginning of Snakes Gut was full to the brim, which indicates the waterfall had been operating then also. Just up from here, the water had backed up from Ice Pick Lake, and the 4m difference in height between Ice Pick Lake, Central Lake was cited as probable evidence for the lack of a hydrological connection between the two.

Rik Tunney reports on a large flood in January 1974 (Tunney, 1974b). Again, water flowed through the DCH, this time for two or three days. In Mammoth Cave, water was encountered flowing from the direction of Cold Hole and thundering down the Forty Foot and Rockpile, both made unnegotiable due to the force of water. Access was attempted via Mammoth Squeeze. Although none of Tunney's party had previously been through the Squeeze, he reports that it was easy to find and negotiate (!). After penetrating Mammoth Squeeze, they managed to push on as far as the six foot drop and Grinning Monster Lake. Water was gushing out from the base of the Rockpile. A small stream from the Rockpile at Home Sweet Home and a smaller stream from the aven near Grinning Monster Lake was high. Much water was flowing from Sand Passage down into the Southern Section of the Cave.

Next day, Central Lake was found flooded to the top of the keyhole-shaped tube, and Ice Pick Lake was up as far as the Unsurveyed Connection (there is some doubt over where precisely was meant by this). Following the last observation is the phrase: "the stream could be seen entering". Although it is unclear, I believe it may be the same as that mentioned in his October 1973 Flood Report: "a small stream was flowing into Ice Pick Lake from a passage on the right" (Tunney, 1974a). In October 1973, the creek sank between Bow Cave and Mammoth with three-quarters of the flow entering Bow Cave. A large stream was flowing out of the bottom of the Rockpile as in the January 1974 flood, but there was no flow from the direction of Cold Hole. Sand Passage was sumped some 25 metres from its start. Ice Pick Lake and Central Lake were flooded, and Mammoth Squeeze was negotiable.

Randall King gives a sequence of events for a flood in July-August, 1974 (King, 1974a). In sequence: water flowing into Bow Cave, water gushing out at the bottom of the Forty Foot and the Rockpile, Ice Pick Lake flooded, Central Lake flooded to where it was blocking the keyhold-shaped tunnel completely, water flowing from Sand Passage via Cold Hole to the 40 Foot and to Horseshoe Cavern, Southern Section was sumped at cross-section F (see map) but Mammoth Squeeze was negotiable.

Conclusions:

A summary of observations exists on the following maps. The floods in order of size are:

1. June, 1975;

2. July-August, 1974;

3. January, 1974;

4. 10-11 April, 1988; and

5. October, 1973.

It seems we were quite fortunate to see the majestic site of the waterfall operating between Central and Ice Pick Lakes. The waterfall must have also occurred in June 1975, but it is debatable at the other dates. This answers Rik Tunney's question (Tunney, 1974b) concerning Ice Pick Lake. The water in Ice Pick Lake cannot be leaving via Central Lake. Rik Tunney's stream entering Ice Pick Lake and the waterfall amount to a considerable flow of water into Ice Pick Lake. Where it goes from Ice Pick Lake and what role does the "hole to water" beyond Snakes Gut (at roughly the same level as Ice Pick Lake) play in this? A dive here should be quite rewarding.

Something of a puzzle is Mammoth Squeeze. In floods 1 and 4 (above) it is flooded, but in the other floods open. This is obviously an anomaly. Jim Arundle suggested seepage water, however, in my opinion the volume was too much, the approach is too dry and it does not account for the anomaly. I suggested that the flooding was a result of a sharp flood peak spilling over into the Squeeze. Although this would account for the anomaly, I have no rainfall figures or other evidence to back it up and the Squeeze's height with respect to Lower River also seems to make it unlikely. Ernst Holland, the Senior Guide, seems to think the Squeeze is taking water directly from the Creek. The location of the Squeeze supports this view. This implies that a sink has formed in the Creek and this would account for the anomaly. Bruce Welch (Welch, 1975) states that, based on observations of the June 1975 flood, that many caves show evidence of removal of fill inside the cave to a lower level or levels previously unknown. If the last hypothesis is true, in future we should expect to find Mammoth Squeeze flooded every time the Creek flows past outside. Incidentally, I noticed what looked suspiciously like a stream sink structure some 20m or so downstream from the Mammoth Cave entrance.

As evidenced in my trip report above, there seems to be a progressive opening of joint planes to carry flood flow in the vicinity of the Rockpile and Sand Passage. In time, this may precipitate another rockfall in the vicinity of the Creek with the result that Mammoth Cave will probably re-capture all flood flow from upstream. Vivre Mammoth Cave!

Returning to the subject of the waterfall, it does seem odd that we found it flowing for probably a day and-a-half from flood peak, possibly two, and it was no longer flowing a day past the flood peak of June 1975, and perhaps not at all on the other occasions. One or two things may be happening. The outflow capacity of Central Lake may have decreased, causing water to back up higher, or alternatively, the flow into Central Lake may have increased markedly due to an increase in the inflow capacity of sinks to feeders of Central River. If the conclusion is correct, then flood flow of water into Mammoth has changed markedly for its Central and Northern Sections and future flood observations will be very interesting indeed.

Mark Staraj

Map Notes and Key:

Stream flow and/or stream sink.

Sumped passage with straight edge signifying unknown side.

Stream source and/or stream inflow.

Waterfall.

(i) Stream inflow October 1973 and January 1973. There is uncertainty where these two streams flow in, or even if they are the same. The Unsurveyed Connection of 1971 is incorrect and not that of 1978.

(ii) Stream flow in October 1973 and April 1988 is conjecture in absence of flood level information of Ice Pick Lake. October 1973 is also subject to (i) above.

(iii) Stream sump January 1974 has uncertain location with respect to comment on the Unsurveyed Connection in (i) above.

References:

1. The Exploration and Speleogeography of Mammoth Cave, Jenolan (J. Dunkley, 1971, P. Winglee, 1978), 2nd Edition.

2. Randall King (1974a): "A Summary of the Hydrological Sequences Observed in the July-August Jenolan Trip", SUSS BULL. 14(9) p. 111.

3. Randall King (1974b): "A Theory on the Joining of Central and Lower Rivers, Mammoth Cave, Jenolan Caves", SUSS BULL. 14(9) p. 113.

4. Randall King (1974c): "A Wet Week Wading the Wintery Waters of Jenolan", SUSS BULL. 14(9) pp. 106-110.

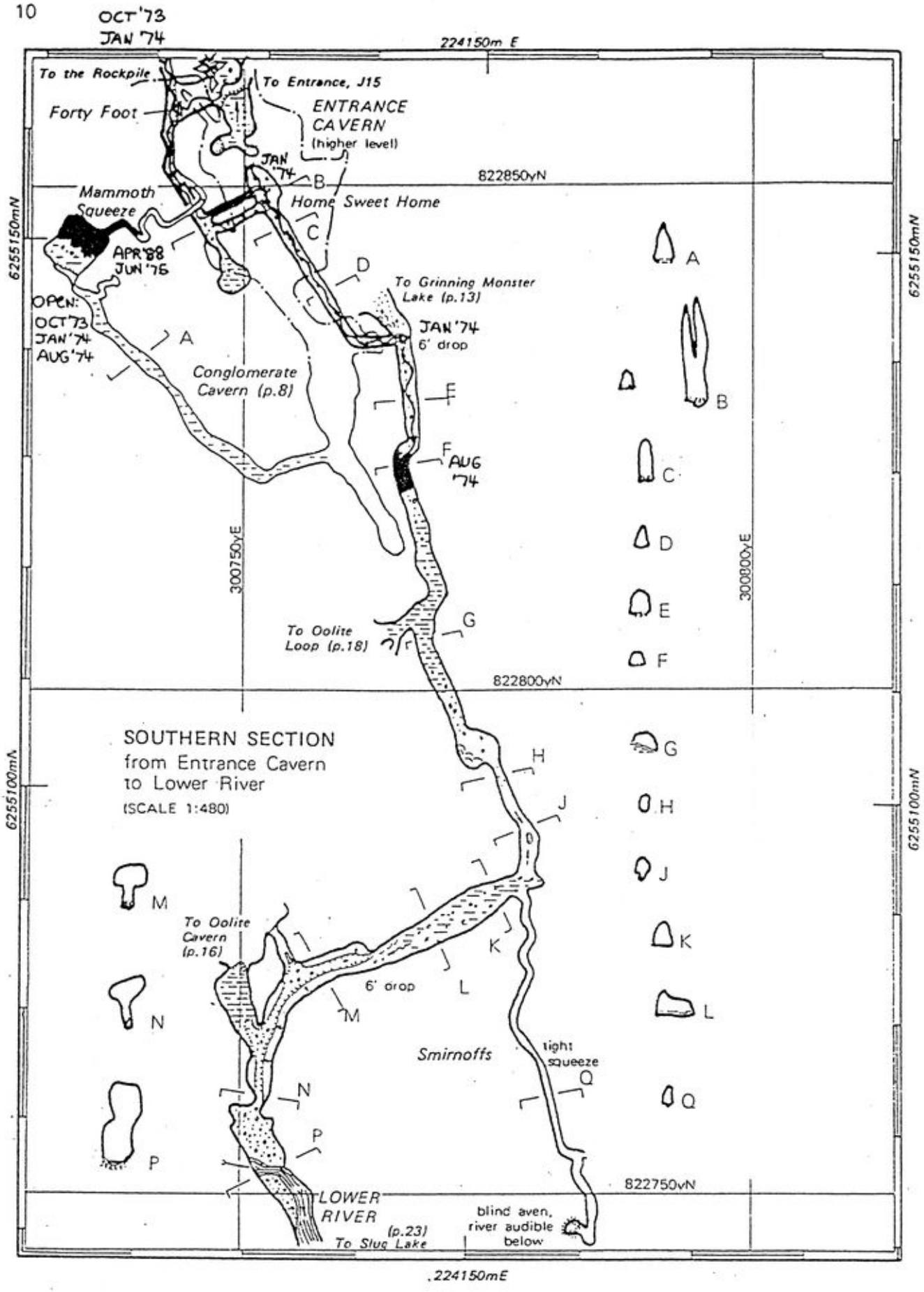
5. Phil Toomer (1974): "Sub-Trip Report", SUSS BULL. 13(11) pp. 135-136.

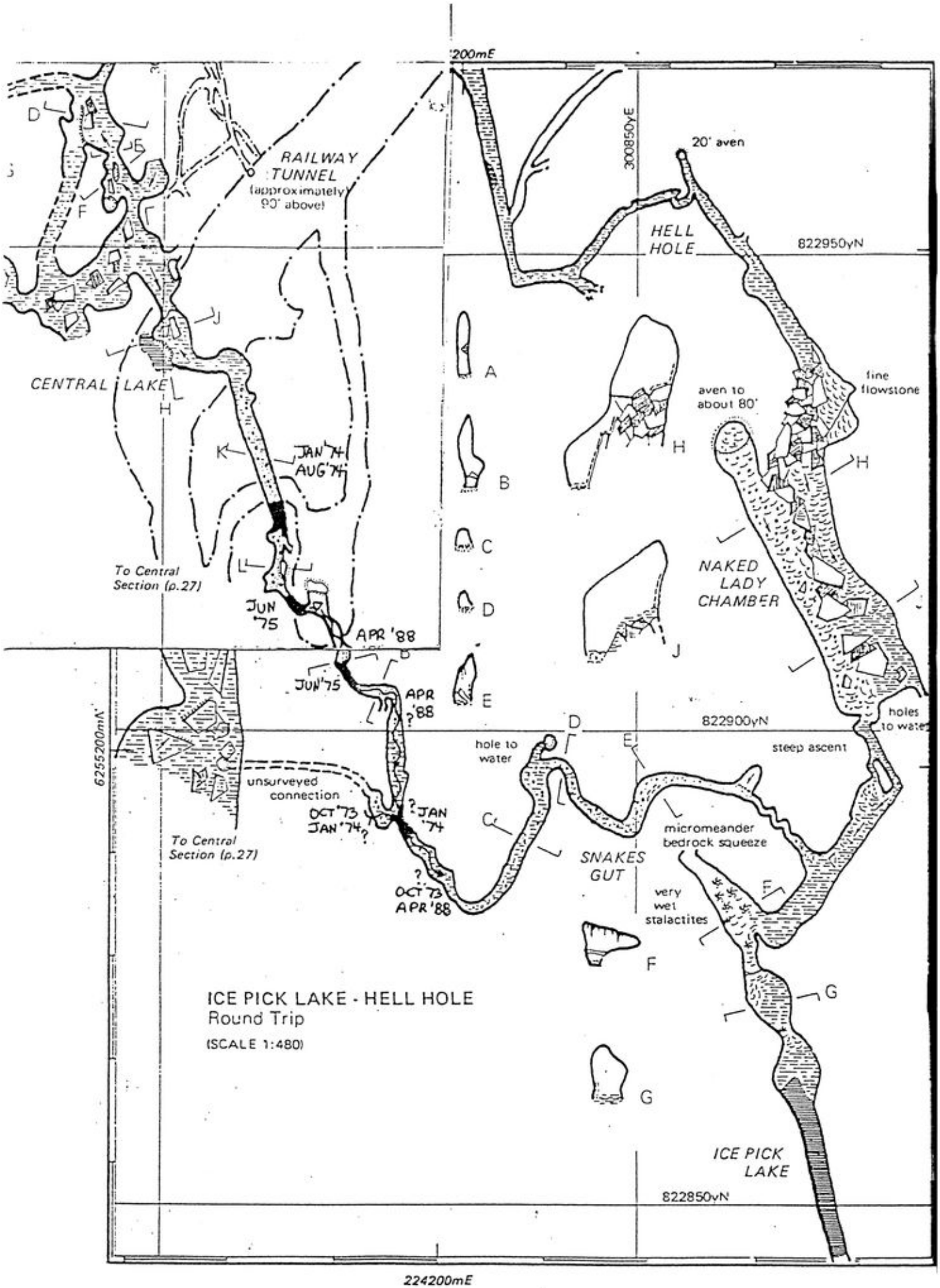
6. Rik Tunney (1974a): "Water", SUSS BULL. 13(10).

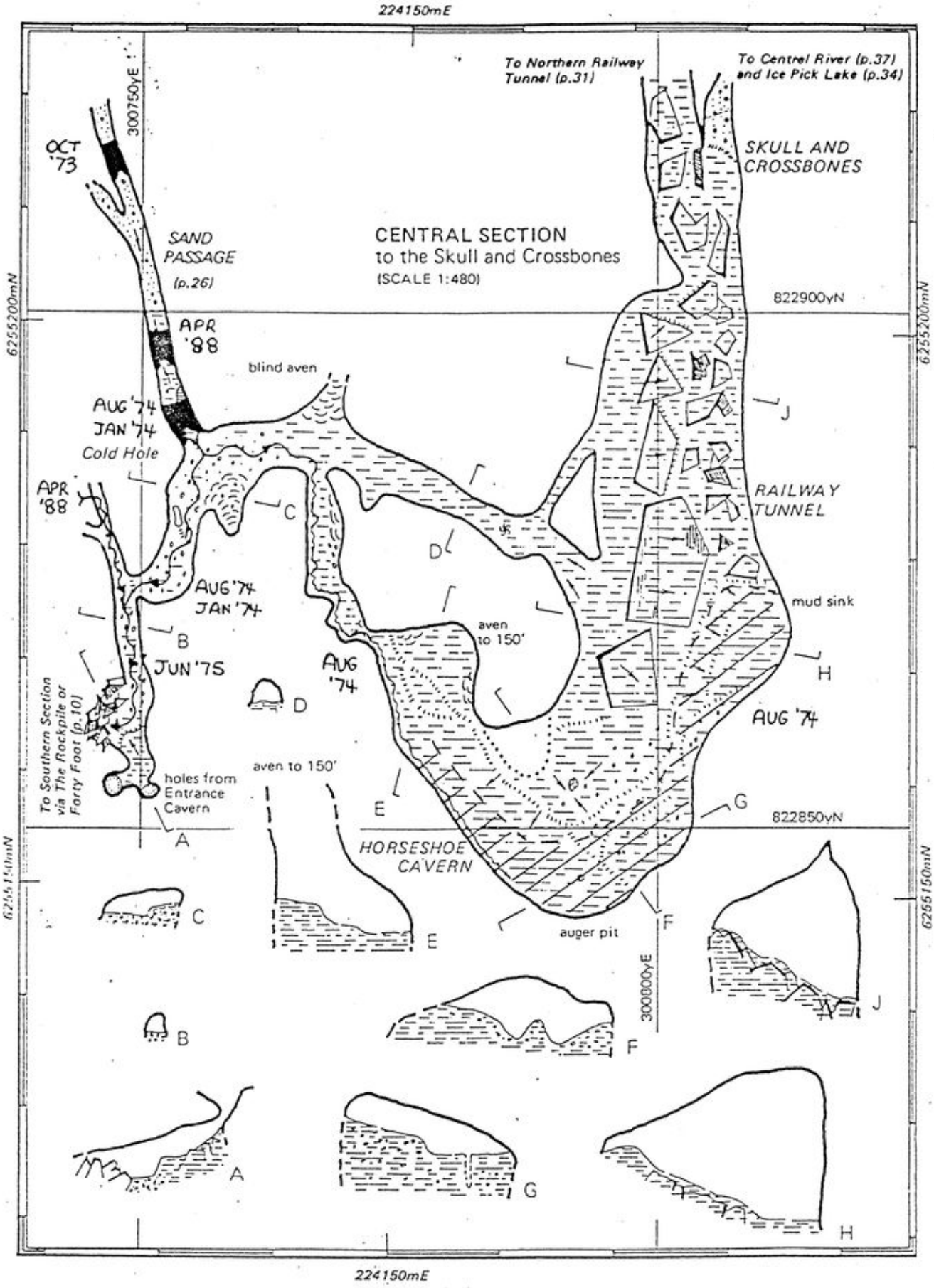
7. Rik Tunney (1974b): "More Water (Too Much?)" SUSS BULL. 13(10) pp. 126-128.

8. Bruce Welch (1975): "Some Observations on the Jenolan Flood, 21 June 1975", SUSS BULL. 15(8) pp. 167-170.

NOTE: For further information on the lesser April flood, especially in relation to Serpentine Cave and the Imperial Streamway, see page 37 of this bulletin.


OCT '73
JAN '74
224150m E
To the Rockpile
To Entrance, J15
Forty Foot
ENTRANCE CAVERN
(higher level)
JAN '74
B
822850vN
Mammoth Squeeze
Home Sweet Home
C
D
APR '88
JUN '75
To Grinning Monster Lake (p.13)
OPEN:
OCT '73
JAN '74
AUG '74
A
JAN '74
6' drop
Conglomerate Cavern (p.8)
F
F
AUG '74
6255150mN
300750vE
300800vE
To Oolite Loop (p.18)
G
822800vN
SOUTHERN SECTION
from Entrance Cavern
to Lower River
(SCALE 1:480)
H
J
M
To Oolite Cavern (p.16)
K
6' drop
L
M
N
Smirnoffs
tight squeeze
Q
N
P
P
822750vN
LOWER RIVER
(p.23)
To Slug Lake
blind aven, river audible below
224150mE
A
B
C
D
E
F
G
H
J
K
L
Q


200mE
RAILWAY TUNNEL
(approximately 90' above)
300850yE
20' aven
HELL HOLE
822950yN
CENTRAL LAKE
JAN '74
AUG '74
To Central Section (p.27)
JUN '75
APR '88
JUN '75
APR '88
?
A
B
C
D
E
F
G
H
J
K
aven to about 80'
fine flowstone
NAKED LADY CHAMBER
822900yN
holes to water
hole to water
steep ascent
unsurveyed connection
OCT '73
JAN '74?
?JAN '74
micromeander bedrock squeeze
SNAKES GUT
?
OCT '73
APR '88
very wet stalactites
6255200mN
ICE PICK LAKE - HELL HOLE
Round Trip
(SCALE 1:480)
ICE PICK LAKE
822850yN
224200mE


224150mE
To Northern Railway Tunnel (p.31)
To Central River (p.37) and Ice Pick Lake (p.34)
SKULL AND CROSSBONES
CENTRAL SECTION
to the Skull and Crossbones
(SCALE 1:480)
SAND PASSAGE (p.26)
300750yE
OCT '73
APR '88
AUG '74
JAN '74
Cold Hole
blind aven
822900yN
6255200mN
RAILWAY TUNNEL
mud sink
aven to 150'
JUN '75
AUG '74
To Southern Section via The Rockpile or Forty Foot (p.10)
holes from Entrance Cavern
HORSESHOE CAVERN
822850yN
6255150mN
auger pit
300600yE
A
B
C
D
E
F
G
H
J
224150mE

The Spider/Imperial Connection:

Trip Report

Spider Cave Team: Mike Lake, Patrick Larkin, Alan Skea.
Imperial Streamway Team: Simon McCartney, Steve Opper, Keir Vaughan-Taylor.

Since 1979 when Bruce Welch and Mike Lake broke through to the Jenolan Underground River in Spider Cave, SUSS has striven to find a connection with the Imperial Streamway in the northern part of the Jenolan Show Caves System. For years, SUSS stalwarts such as Guy Cox, Bruce Welch and Paul Greenfield made jokes about popping up in the Imperial Show Cave and scaring the life out of the tourists. Well, on Sunday 28 August, 1988, we did it!

At about 11:30am, the Spider team - Alan, Mike and I - entered Spider Cave. Poor Bruce Boardman didn't join us, but opted for Mammoth Cave because he didn't have sufficiently warm clothing. Whilst not to come was the only sensible decision, I am sure that he has regreted it ever since! At the time when we entered Spider, we did not know whether there would be an Imperial party at all - Simon, true to form, was running late. Steve Opper even expressed doubt as to whether Simon would arrive at all. Nevertheless, we arranged with Steve to proceed to the downstream rockpile and be silent at 2:00 pm, 2:30pm, 3:00pm and 3:30pm in order to hear the whistle blasts of the Imperial team over the roar of the Jenolan Underground River in the rockpile. We agreed that if we had not heard from the Imperial team by 3:30pm, we would assume that they were not coming, or were too far away in the rockpile to be heard.

Simon arrived at 12:30pm with Keir and together with Steve they entered Imperial Cave at about 1:00pm. On the Spider side, our party was making the usual leisurely trip to the riverway.

Until recently, Pirates Delight had been flooded for nearly a year, frustrating most of our attempts to meet divers coming up from Imperial. However, it eventually drained, leaving behind a great deal of silt and mud, rendering the squeeze impassible. On an earlier trip, Judi and Simon McCartney, Steve "Wombat" Opper, Mark Staraj and I spent some hours removing the built-up mud from the bottom of Pirates Delight, so that the squeeze is now somewhat more straightforward than it was before it flooded.

Shortly after midday we reached the bottom of the main Spider rockpile and entered Glop Hole Gallery. The entire Glop Hole Gallery/Khan Passage area is in remarkably good condition, especially given the number of trips into that part of Spider Cave in the nine years since its discovery. The floor is covered with a delicate array of mud formations and glop holes which could easily have been destroyed by carelessness. Fortunately, the discoverers of the cave were sufficiently far-sighted to place a row of pot plant tags to mark out a path, to which visitors have kept over the years. The condition of the cave has benefited accordingly. Such an important trip report as this one provides a good opportunity to record observations not only about the present condition of the cave and the reasons for that condition, but also of the future: such conservation measures are likely to become more rather than less important as time goes by. The strength of argument to restrict or prohibit access to caves is proportional to the damage done by access to caves. Conservation measures are not only in the best intrests of the caves, they are also in our best interests.

We proceeded to the Jenolan Underground River, where Mike and I changed into our wetsuits. We knew that Alan was in for a cold time: he had no wetsuit, only thermals. We ate the usual brief snack - chocolate and (in Mike's case) jelly snakes. At approximately 1:30, we entered the downstream rockpile.

The rockpile was well named by whoever coined the name "Rubble Trouble". It is a tall, unstable, tottering pile of broken boulders. Its boulders are often sharp and range in mass from a few grammes to many tonnes. Through its centre flows the largest underground stream on the mainland.

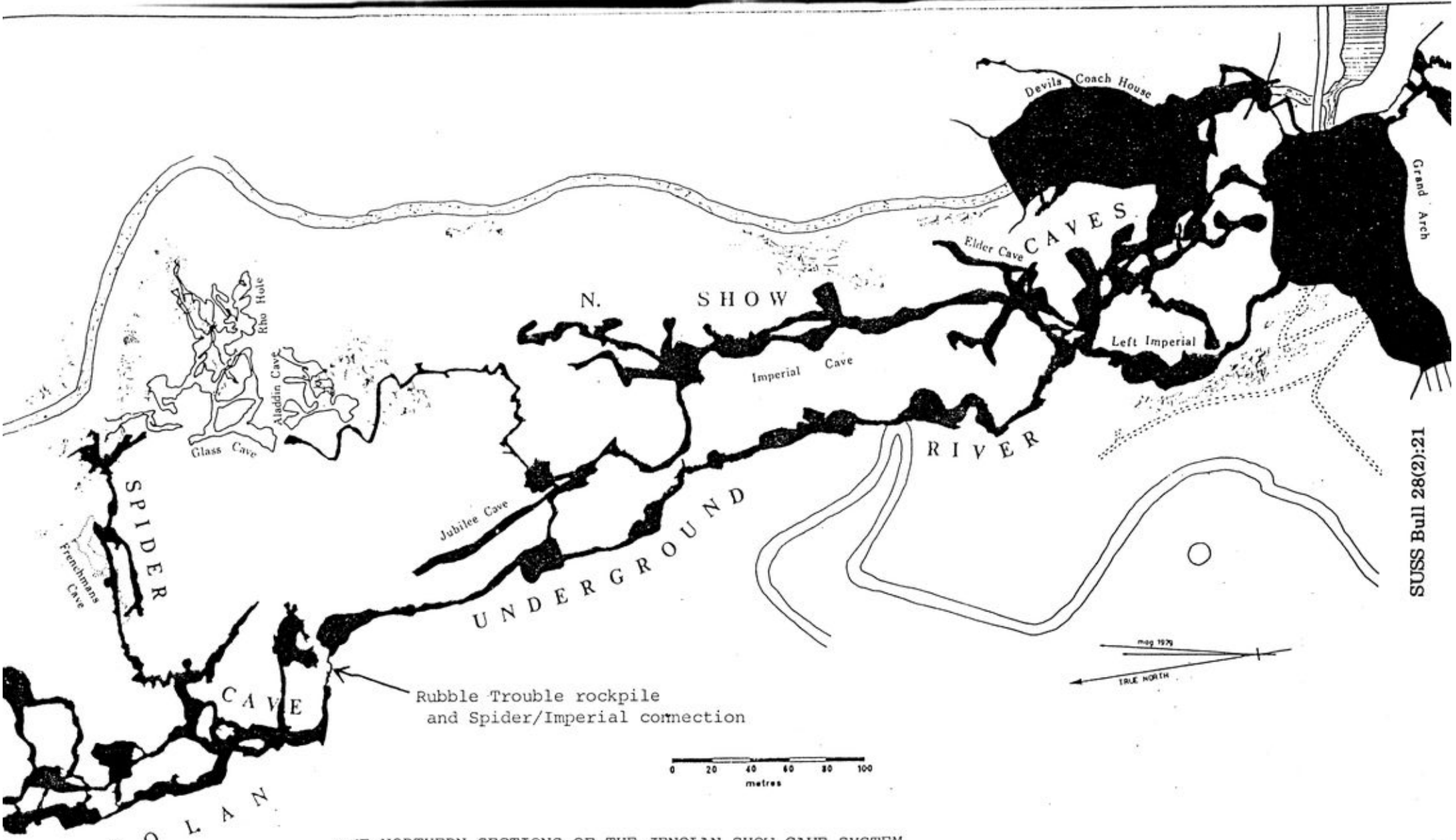
For nine years there have been attempts by various SUSS personalities to penetrate into Rubble Trouble. Early attempts by Paul Greenfield, Mike Lake and Guy Cox concentrated on the stream level. About 10 metres into the rockpile they encountered a "slot" through which most of the Jenolan Underground River flowed. It was considered to be impenetrable or at least, if it was penetrable, that the intrepid explorer would not be able to return through the slot against the flow of the river. Later attempts were made on the higher levels of the Spider side of the rockpile, notably by Rolf Adams. Those, too, did not bear fruit.

In contrast, it was only some 18 months ago when SUSS personnel first visited the Imperial side of the rockpile. Since then, led by Simon and Judi McCartney, many attempts have been made to push the Imperial side. At stream level, only a short penetration was possible. About a year ago, I attempted to enter a small room at stream level on the Imperial side, and was unpleasantly punished: a slide of boulders of cross section up to 15cm slid down onto me. On subsequent trips, Simon (who has nick-named that room "The Room That Went Plop On Pat") succeeded in ridding it of those boulders, but nevertheless, could not advance more than a few metres further into the rockpile.

So it was that about six months ago our attack on the Imperial side changed. In the course of surveying beyond Sumps Three and Four for Julia James' show cave survey we entered a large number of high level leads in and around the rockpile. Those leads rose up to 40 metres above the streamway. Still there was no end in sight to the rockpile. However, we were able to push some 15 metres horizontally into the rockpile at the higher levels. Once again, the rockpile refused to yield and we were unable to penetrate further.

Some six weeks prior to the breakthrough, and shortly after Pirates Delight had been deprived of its muddy blockage, Ian Cooper and myself entered Rubble Trouble from the Spider side. We followed the stream as far as we could. We reached a point where the river flowed rapidly under a boulder, and I was able to "roof sniff" past that blockage. A short distance further along we reached a "sump" - where the river went under a boulder and roof-sniffing was not possible. Presumably this was the "slot" which had previously stopped progress. I nervously moved as many boulders and as much gravel from under the boulder - which formed the roof of the "sump" - as I could and felt tentatively into the "sump". I was confident that I could pass under the boulder and through the "sump", although I was more nervous about the return trip against the force of the water. Nevertheless I grovelled through the "sump" and popped up, like a drowned rat, in a small room. The river flowed out of the room to the right via another "sump" under another huge boulder. It was impossible to fit even my leg into that second "sump". I followed the only other lead to the left. It led to a small room bounded on the left by a sloping bedrock wall. There were no other leads out of that room. Dead end.

Just two weeks before the breakthrough Alan, Simon and Mike entered the rockpile from the Spider side. They proceeded to the first "roof-sniff". Mike squeezed through a small hole about two metres to the left of the roof-sniff, avoiding the water. Simon followed the same route that I had taken through the roof-sniff.



SUSS Bull 28(2):21

THE NORTHERN SECTIONS OF THE JENOLAN SHOW CAVE SYSTEM

Substantially based on a map by Guy Cox. Also based on maps by O.Trickett, K.Oliver, M.Lake, G.McKenna. Note that only the main passageways are depicted and a large number of passages are not shown.

Beyond that point Simon discovered a small squeeze on the right before the first "sump" in the rockpile. Mike, Alan and especially Simon moved several boulders and eventually Mike was able to pass the squeeze and rejoin the main flow of the river downstream of the second "sump" which had stopped me on the earlier trip. At that time, Alan and Simon could not pass the squeeze that had swallowed Mike. Mike followed the riverway through a few roof-sniffs in the rockpile, a distance of some 10 metres beyond where any of us had been before.

Exploration in an unstable rockpile carrying the volume of water of the Jenolan Underground River is a hair-raising experience. Each boulder is viewed suspiciously before it is crawled under or on. The question "Is this one going to move and kill or trap me?" is never far from mind. Mike's efforts in pushing alone through duck-unders further into the rockpile on that trip were courageous indeed.

When he returned to Simon and Alan, Mike was excited. Mike described how the character of the rockpile changed at the furthest point he had reached and predicted that a breakthrough was imminent. Mike described that the rockpile had become a lighter, sandier colour and the boulders had changed from the sharp, angular shapes common at the Spider end to more block-shaped forms. Simon was encouraged because he knew that the Imperial side was a sandier colour than the Spider side. Significantly, at the time when Mike made his observations, he did not know what the Imperial side looked like.

So we had entered Spider Cave looking for a breakthrough. I was cautious: I said I felt confident that sheer time and human effort would beat Rubble Trouble, but did not expect to win the war that day. We entered the rockpile and proceeded through the first duck, past the squeeze which Mike originally forced (but which was substantially enlarged by Simon and Alan), under the duck unders in the rockpile which Mike had previously passed alone, past yet more teetering boulders until we reached a small undistinguished room. Suddenly and rather rudely Mike told Alan and I to be quiet. He claimed to have heard voices. How he could possibly hear anything over the roar of the river in the rockpile? Either Mike was going insane or the Imperial party were very nearby indeed.

And then we saw their lights! Rays from Keir's "mega-blaster" dive light shone through a small hole some three or four feet to the left of the main flow of the water, rather like something out of Close Encounters of the Third Kind. It was 1:45 pm.

And then for the first time in its history the noise of the Jenolan Underground River in that rockpile was overwhelmed by a louder noise: the sound of the six of us shouting. Mike reached into the small hole and grabbed the tip of Kier's hand. They could not quite shake hands through the hole, just fingers.

After our excitement had died down somewhat we looked for a way to get through to the Imperial party. We spent some time looking for an alternative to the slot through which Mike and Keir had shaken hands, but could find none. The only possible connection route was through that slot filled with stones barely wide enough for an arm.

So Keir and Steve Opper set to work from below. They dragged boulders from underneath and threw them in the general direction of poor Simon, who was expected to remove the ejected boulders form the vicinity. After an hour or so, many offending boulders had been removed from underneath. Then Steve and Keir got out of the way while, from above, I pushed the remaining offending rocks down to be dragged out. Eventually, all the boulders and rocks in the way had been removed, leaving a slot through which it was possible to shake hands properly.

The slot itself was bounded by two large boulders in the rockpile. It was not possible to move either of those boulders without locally demolishing the rockpile and us with it. Accordingly, we decided to chisel away at one of the boulders to enlarge the slot to the point where the connection would be possible. This raised new problems: whilst the entire rockpile was unstable, there was, some two metres on the Spider side of the slot, a very large loose boulder suspended over the main crawl-way through to the slot. We were concerned that heavey-handed chiselling may have dislodged that boulder, leaving one of our party trapped between the slot and the exit through Spider Cave. Consequently, our chiselling was timid to begin with, and none of us sat underneath that boulder!

By that time we had been in the water for some two hours. Neither Mike, the Imperial party nor I were concerned by the cold because we were wearing wetsuits. However, Alan was steadily shivering in his thermals. Not surprisingly, Alan endured the cold: he wanted the connection as much as any of us and he would not even hear of leaving. He announced "I'm not-t-too cold" between shivers. Consequently, Alan accepted more than his share of the chiselling work simply in an effort to stay warm.

At about 4:45 pm Mike decided that the slot had grown sufficiently for him to get through. So he removed his wetsuit and, just like Houdini, slowly squeezed into Imperial Cave. The connection was made!

I could not fit through however, and I wanted to do the first Spider to Imperial through-trip. (Mike could not do the the through-trip because he was not a diver.) So I took the chisel and slammed away at the slot. Within a short time I could almost fall through it. Steve Opper entered Spider to replace me and do the first Imperial-Spider through-trip. The exchange of a Jenolan Guide from the Show Cave System ("South Spider Cave" as we have now dubbed it) with a SUSS member from the Spider side was not lost on us. Steve, Mike and Alan left Rubble Trouble heading for the Spider Cave entrance. I donned Steve's SCUBA gear and began to fulfil an ambition that SUSS has held for nine years.

The trip is one of the most varied and demanding through-trips in Australia, requiring the caver to pass through the Spider Cave squeezes, the unstable, water-filled Rubble Trouble rockpile and four sumps in the Imperial streamway, in the process taking in some of the best decorated and hitherto least visisted passageway at Jenolan.

The Imperial streamway is truly a beautiful place. It contains four aesthetic green sumps, a variety of flowstones and stalagmites, and the clean grey washed rock that is the hallmark of a first-class streamway. There is no doubt that the combined Spider/Imperial streamway is one of the finest stream passages in Australia. And on the way out, we were literally singing about it. We emerged from Imperial Sump One and climbed onto the show cave track beside the river. Still wearing our SCUBA gear, we climbed up the staircase to the main Imperial show cave where we encountered a tour party. The guide was greeted by bouncing Keir, who pointed at me and proudly announced: "He's just come from Spider Cave!" The tour party sensed our excitement, and several people slapped us on the shoulders as we went past. At approximately six o'clock we emerged from the magnificent Grand Arch.

We proceeded to the Guides' Office where Keith Oliver was waiting for us. Evidently, he had some commitment and was not impressed by waiting for us. Indeed, he said so. Then a light globe seemed to come on in his mind and he looked at us with a rather puzzled gaze and asked: "Where's Steve?"

Simon grinned like the Cheshire Cat as he replied: "Steve is in Spider Cave!"

Pat Larkin

The Longest Cave In Australia?

The "length" of a cave is a dubious concept. It is theortically defined, roughly speaking, as the sum of the lengths of the survey traverses (of whatever grade) along each passage in the cave (once only) via the shortest route along each passage. Such a definition raises more questions than answers. Obviously there is a difficulty in defining precisely what constitutes a "passage" in different situations and rockpiles are an example that spring immediately to mind. It is clear, for the purposes of the definition, that a passage must be big enough for a caver to travel through, although any sized caver will do. In addition the definition depends on a surveyed traverses, but no two surveys, even of the same cave by the same surveyors, will be perfectly comperable. Practically, it is difficult to measure the "length" of a cave in this manner, and the total surveyed length is often treated as an approximation to the "length". These are merely some of the problems built into the "definition". The caves to which the definition is applied vary hugely: is there any meaning to a comparison between a cave consisting of a single 10 kilometre passage 50 metres accross and 50 metres high along its entire length on the one hand, with a phreatic maze contained within half a square kilometre but developed on eight levels and "totaling" 10 kilometres on the other? Given so many conceptual and practical difficulties, it not surprising that the "length" of a cave has little utility other than for the purpose of publication of lists by cavers.

Nevertheless, the Spider/Imperial connection prompts an examination of precisely where the Jenolan Show Caves System stands on the Australian list of magical cave lengths. For more than eighteen months a horde of Sydney cavers from many different caving clubs have been tirelessly surveying the Jenolan system under the leadership of Julia James. The survey of the northern "half" of the system is substantially completed, and with the addition of Spider Cave, the total passage length conservatively runs to some 11-12 kilometres. The survey of the southern side is well underway. Whatever else may be said, it incontestable that the southern side will reach the 6 or so kilometres required to to push the Jenolan system past the 17 kilometre figure attributed to the old "length" of Exit Cave. It is most likely that the Jenolan system comfortably pass that figure.

Which raises some interesting questions. First, just how "long" is Exit Cave? Recent discoveries in Exit Cave have added to its length. The recent Spider/Imperial link-up and its attendant publicity will no doubt prompt a spate of surveying and/or publication of maps of Exit Cave. That side effect can only be beneficial for Australian Speleology.

In the mean time, the Australian caving community eagerly awaits the completion and publication of the months of work on the Jenolan survey. Just how long is the system?

Whatever the outcome, it seems (at least as far as Ida Bay and Jenolan are concerned) that a new period of rivalry between Tasmania and New South Wales is at hand. Provided that rivalry is friendly and pursued in a spirit almost of "sportsmanship" and not carried to extremes, that too can only be beneficial for Australian Speleology. I will take this opportunity to state in print that our Society greatly respects the work and exploration that has been carried out over the years in Tasmania.

Having said that, you can also rest assured that we have other promising leads at Jenolan of which we hope to inform you in due course.

Pat Larkin

Wintering in Tassie

(Collected by Danielle Gemenis)

Present: Marc Bown, Danielle Gemenis, Steve Keenlyside, Scott Vantoff

Following are some quotes that were collected on the recent trip to Tasmania. Perhaps the cold weather explains them?

Scott (up to his waist in water in Croesus Cave): you didn't tell me I had to get my hands and feet wet caving.

Marc, a Pom: Are those bouncing, running things natives?

Nick: I've now substituted mental for physical masochism. I hope a three year arts degree leaves me less damaged than three years caving at Maydena.

Martin Cairnes on the National Park pub: They should sell tea sets - I got my head blasted in at Maydena.

Stefan, lounging in a cave having a cigarette: I would have given up smoking long ago except that I have to check for draughts. (Is this the longest sentence Stefan has ever been known to speak?)

Taxi driver on offering Danielle dried fruit: I like dried fruit - I'm not a greenie though you know!

Native of New Norfolk in National Park pub to Scott: Are you a boy or a girl? Does everyone from Sydney look like you? etc

Scott to farmer whilst hypothermic: I love you!

Steve about Rolan: The man's a psychopath. He could take on Rolf.

Danielle: I don't like medicine...All the patients are sick!

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17th BIENNIAL AUSTRALIAN SPELEOLOGICAL CONFERENCE

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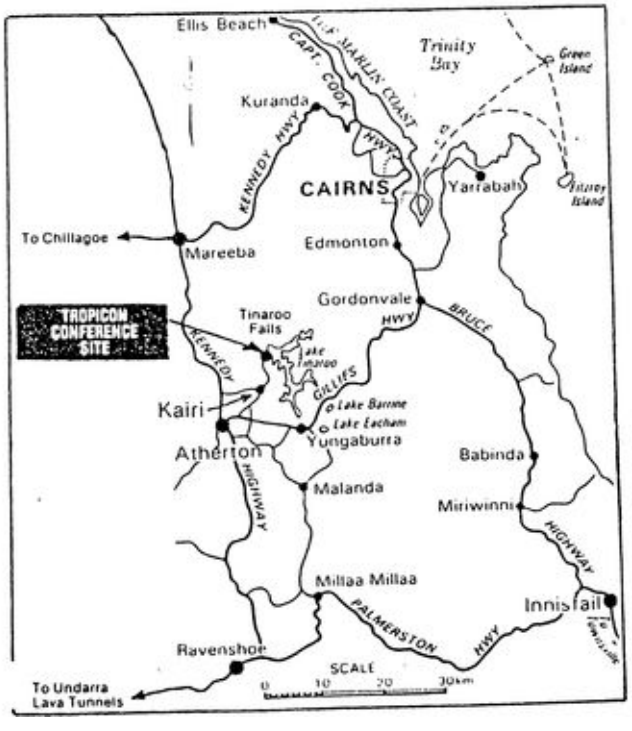


MA 17 - CONE OF SILENCE

11th January, SUSS Mt. Anne Expedition 1987 - Tasmania

Ross Bannerman, Vicki Bonwick, Phil Cole, Mark Pollinger

Before we left Hobart to spend a couple of weeks on Mt. Anne, we obtained some aerial photographs of the area from the Tasmanian Lands Dept. The photographs of the Mt. Anne karst proved to be a valuable guide to the location of caves, as the the karst is relatively sparsely vegetated and because the karst contains some truly enormous and black looking dolines. One of the first to be investigasted was the large doline northwest of Kellar Cellar that stands out literally as a scar on the mountain (for example see the reprint of the air photo in AG 10 p50).

Cave Description

The Cone of Silence (see map) is a large and deep doline at G.R.543465 orientated NW-SE similar to the adjacent Kellar Cellar doline. A track was cut around the western margin of the doline by expedition members to allow easy and safe access to the rest of the karst. It is roughly 80m long and 40 m wide, having sheer cliffs along its northern and western margins which are up to 50 metres high. The doline is filled with large boulders and rubble that are covered with a thick layer of soil and lush green grass, which silenced the noise of any falling rocks when they hit the bottom. This eerie phenomena gave rise to the name for the doline (and who could resist the temptation to a reference to the dark underworld of Get Smart), as unsuspecting cavers were unaware that rocks dislodged by an abseiler had just missed them. The western wall of the doline is overhung, giving the doline a cave-like appearance, and is covered with an impressive carpet of red/green algae and lichens (see photo in AG 10 p58). The bottom of the doline is riftlike but is choked with boulders, with no prospects for any cave contining. This is rather disappointing as the enormous size of the doline indicates that it previously took a lot of water, probably during glacial times.

Rigging

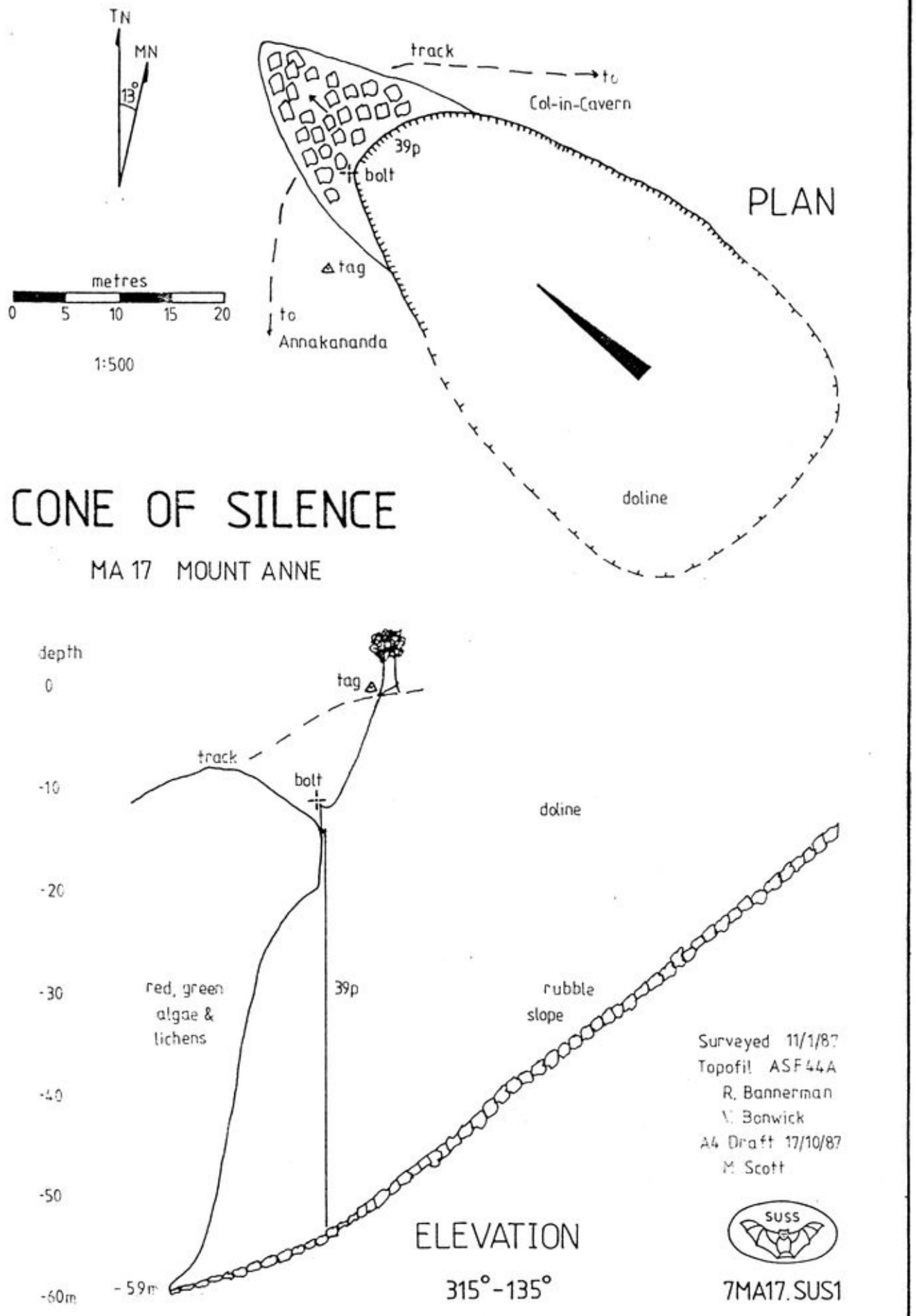
To enter the doline you don't need any vertical gear at all as the eastern slope can be safely negotiated down the rubble pile. However SUSS members couldn't resist the beautiful 55metre pitch from beside the track down into the doline. Beside the tag is a large tree which was used as the main belay for the pitch. Traversing down and northwards the rope is rebelayed to an 8mm bolt, below which there were two further rebelays (see AG 10 p58) and then free-hangs for 39 metres to the doline floor. The photo in Australian Geographic shows Vicki Bonwick abseiling down with a faint topofil string being used to measure the pitch length. The caption to the photo claims that the Cone of Silence can be done as a "through trip", however this is stretching the truth a bit as it is debatable whether the doline actually becomes a cave let alone "a passage that exits through the mountainside".

MA 23

Rolf Adams & Anne Gray, 25th January 1987.

On a previous trip to Mt. Anne Rolf found a few new caves which inevitably inspired the full scale SUSS expedition.Sketches of the caves found were published in SUSS BULL 26(1) and the trip and the discovery of the caves were described in SUSS BULL 27(1). Before leaving the cold and wet Mt. Anne for summery Sydney, Rolf and Anne surveyed the cave which was previously known as "Cave D", but with the addition of a tag and the accompanying map it became MA 23. Whether it actually has a name is unknown as Rolf and Anne are in USA.

Martin Scott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Surveyed 11/1/87
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R. Bannerman
V. Banwick
A4 Draft 17/10/87
M. Scott
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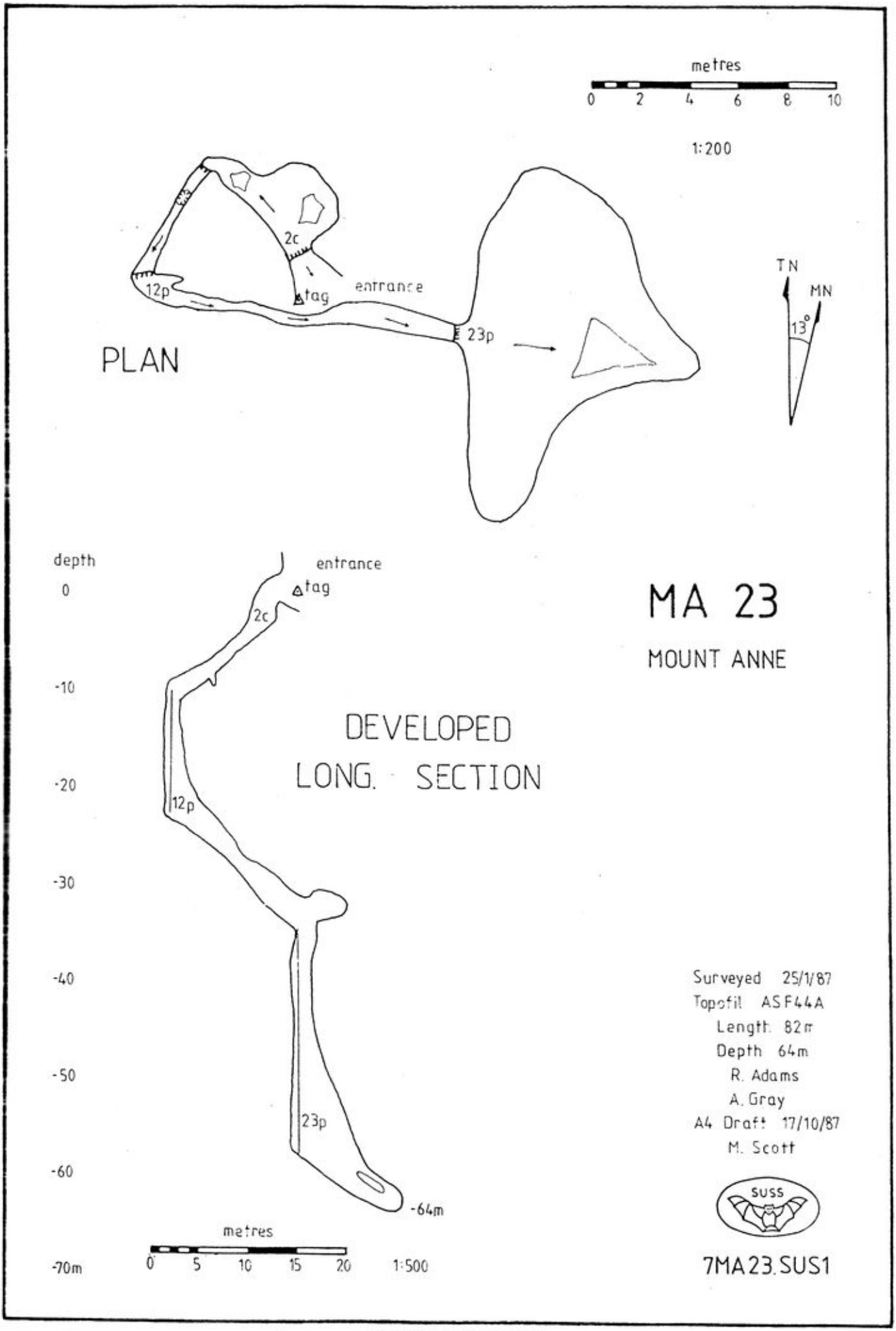
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Surveyed 25/1/87
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Length 82m
Depth 64m
R. Adams
A. Gray
A4 Draft 17/10/87
M. Scott
SUSS
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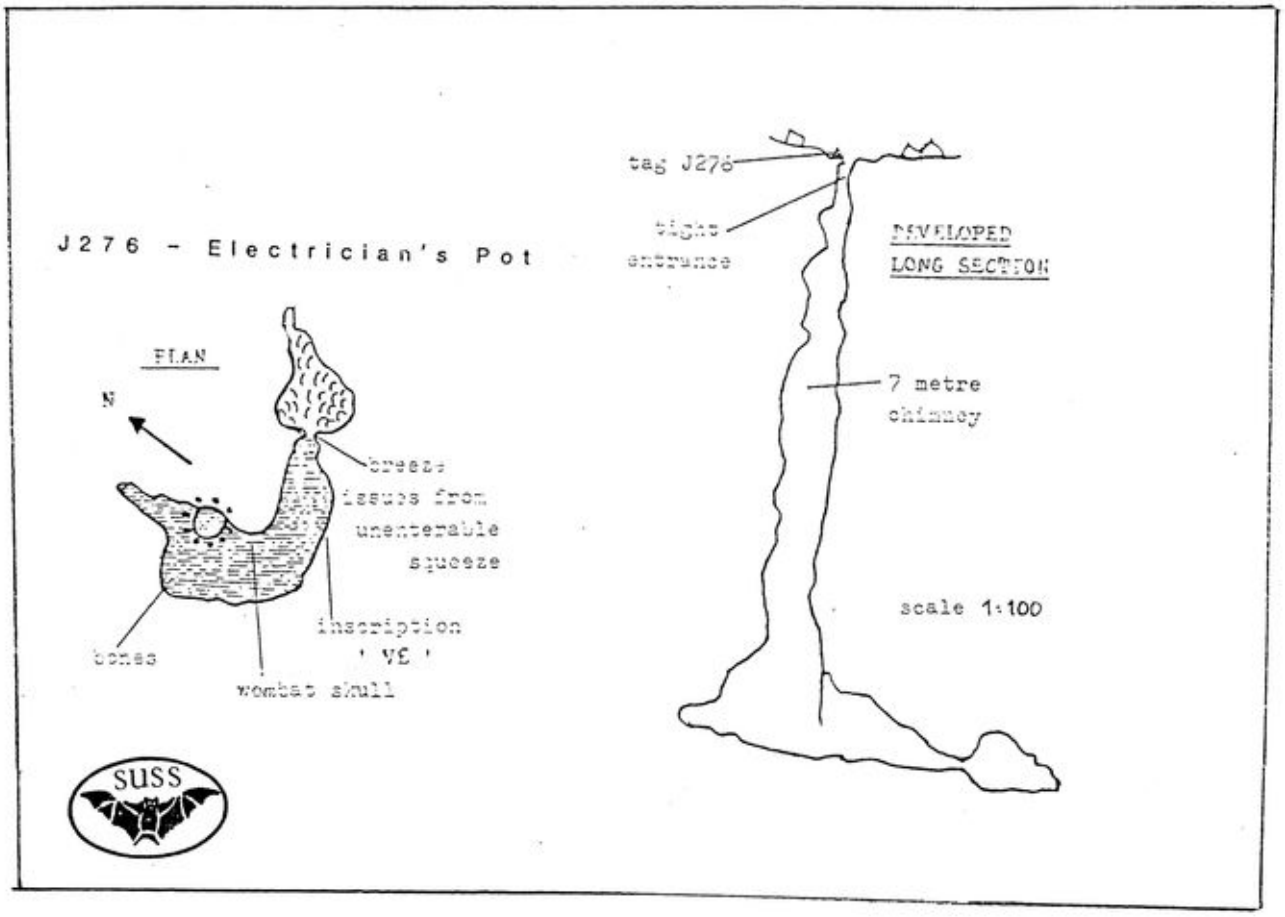
Three Southern Limestone Caves

Mark Staraj has been positively pressuring me to publish several cave maps that I have drawn over the years. Of course, he is absolutely correct! Maps should be published, not surpressed. As a humble start, I will publish here some maps dating from 1984 of various small southern limestone caves at Jenolan. The trip report corresponding to these maps may be found in SUSS Bull 24(3) at page 74ff under the heading "Jenolan Southern Limestone Non-Trip".

In the future, I will publish some maps of Nova Cave, Wombeyan (discovered in 1984 by Peter Patonai and myself) and the Far Counrty extension to Jubilee Cave at Jenolan (discovered by Simon and Judi McCartney and Keir Vaughan-Taylor in 1987). So Mark, you'l have to wait a bit longer for Far Country!

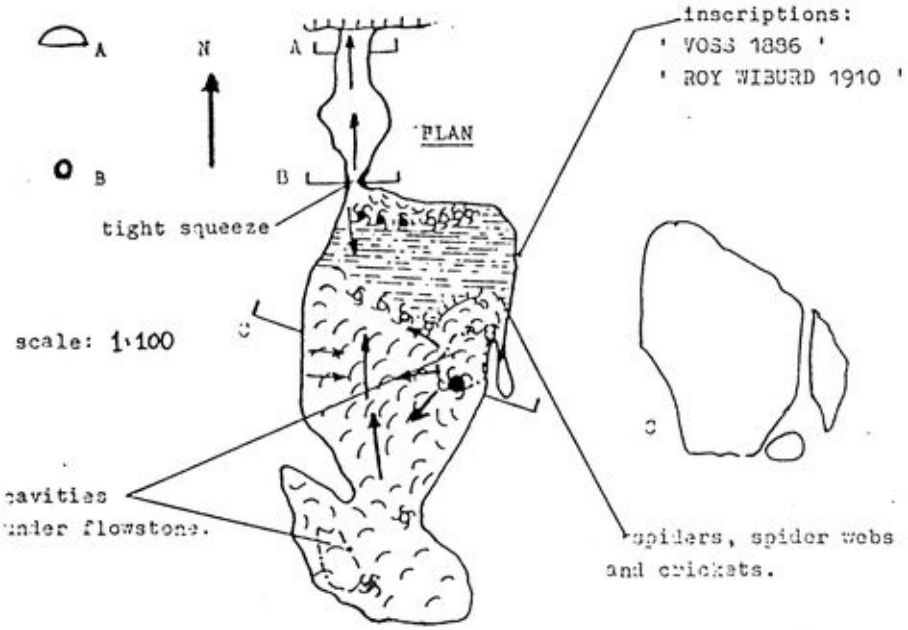
Pat Larkin



Survey Credits for all three maps:

Surveyed 24 May 1984 by Rolf Adams, Paul Chatterton and Patrick Larkin, tape and suuntos.
Drawn 30 May 1984 by Patrick Larkin.

J275 - Hobbit Hole



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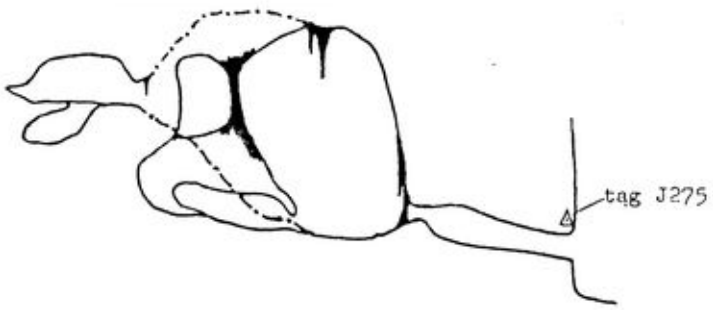
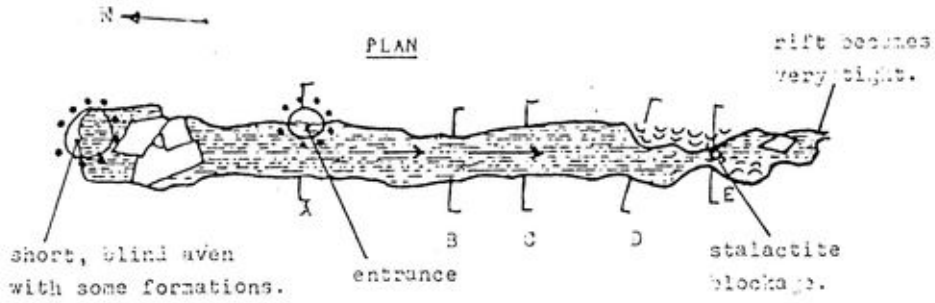


J277 - Photon Cave



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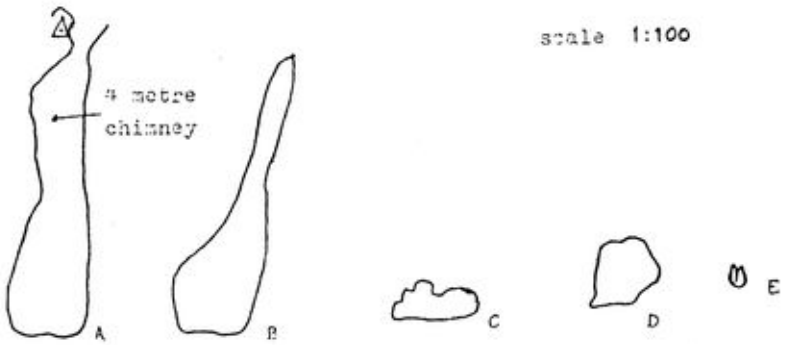

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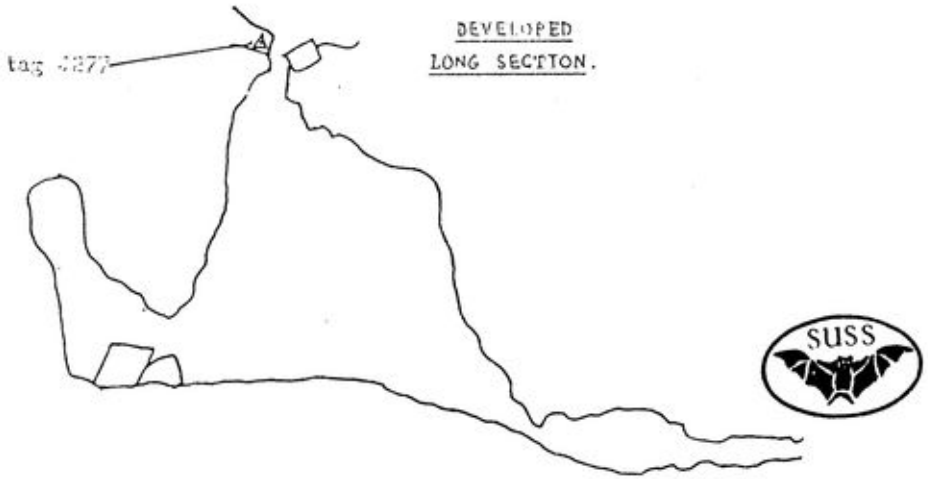


A Paradox In The Baralong

INTRODUCTION

The Southern Limestone at Jenolan has always been an enigma. In the southern half of the Jenolan Show Caves system, there are extensive, voluminous passages, for example in Lucas and Orient Caves and the Temple of Baal. The southernmost section of the system is Baralong Cave. Some kilometres lie between the sinking of Camp Creek near Paradox Cave and its re-emergance in Baralong Cave. However, no route to the riverway has been found between its sinking and the Baralong.

Over the years there has been much speculation about the possibility of a "Southern Limestone Master Cave". Speculation about "master caves" is commonplace in many caving areas around the world. Unfortunately, such speculation is significantly more common than the "master caves" themsleves.

Baralong Cave itself, like much of the southern show caves, is highly decorated and relatively voluminous. It was thought that the upstream sump (Sump 1) may offer a short, wet route into similiar passage beyond. Consequently, some years ago members of the Cave Divers' Assocaition of Australia (CDAA) carted their tanks to Sump 1 for a push on the Baralong. CDAA discovered that Sump 1 was a very confined and unpleasant sump. Nevertheless, they pushed on into Sump 2 for some distance before deciding to return to the Baralong.

Six months ago, we first entered Sump 1 and found (the hard way) that it was an unpleasant place. We also discovered that the scaling pole pitch above Sump 1 led to another 40 metres of high-level dry passage which by-passed Sump 1. At the end of that passage is a rift which gives access to the start of Sump 2.

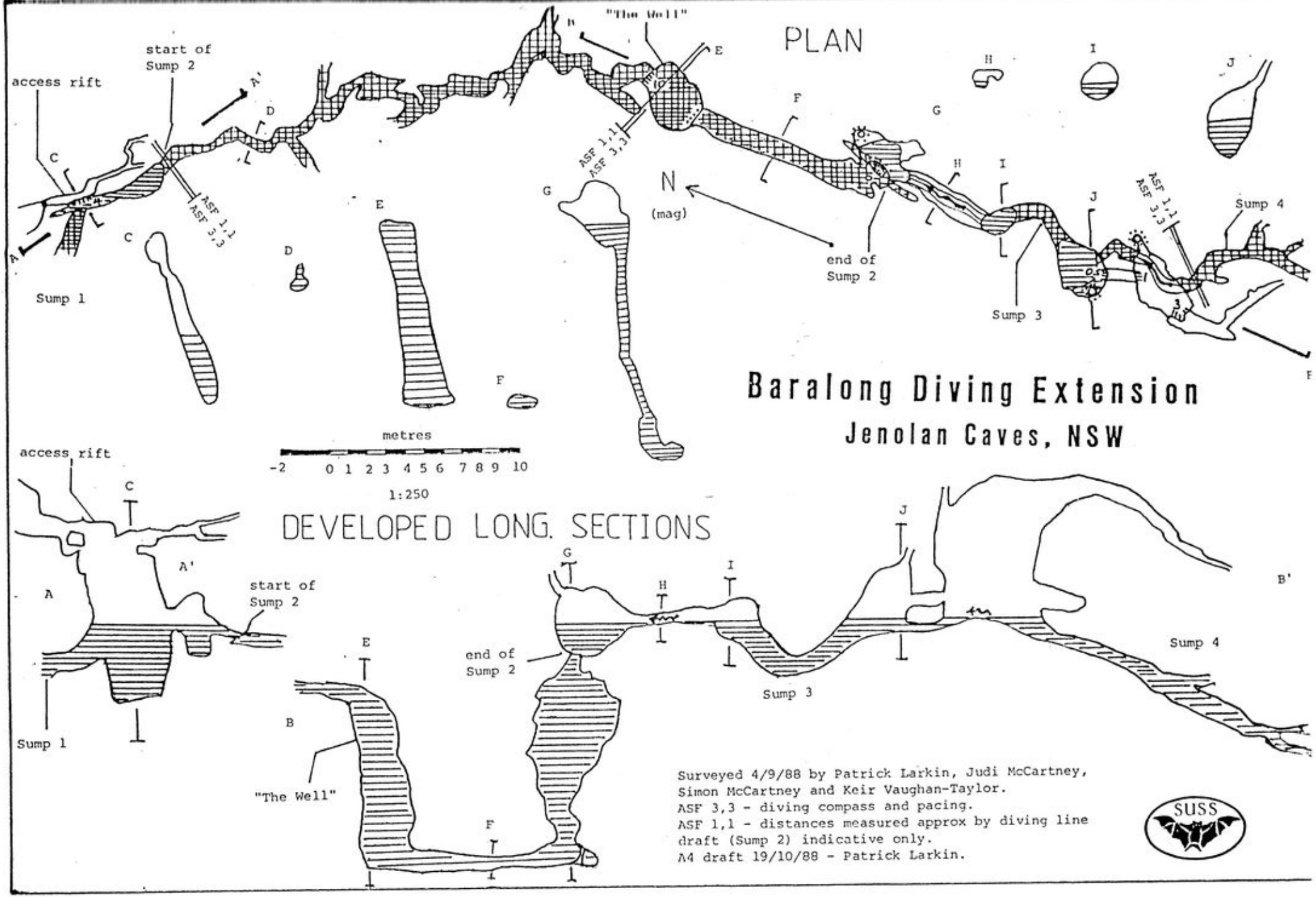
Sump 2 was initially passed by Simon McCartney, and later by Simon together with *Ron Allum (CDAA). They proved that the sump, though difficult, was a good lead. On that* second trip, Ron pushed Sump 3 and reported that it was quite straightforward with continuing passages beyond. Hopes were high that there was substance to all the speculation about a Southern Limestone Master Cave. But as every caver knows, life wasn't meant to be easy...

TRIP REPORT

Porters: Vicky Bonwick (SSS/TCC), Steve Keenlyside.
Divers: Patrick Larkin, Judi McCartney, Simon McCartney, Keir Vaughan-Taylor.

It was the divers' plan to bypass upstream sump 1 and re-dive upstream sumps 2 and 3 and then to explore beyond. Sumps 2 and 3 have only been passed once before by Simon McCartney and Ron Allum, CDAA/CEGSA some months previously. Sump 2 is considered to be the most constricted of the dives so far encountered at Jenolan.

The four divers were each equipped with twin low-profile tanks. Anticipating that the constricted nature of the flooded phreatic passage might well continue the McCartney's utilised ultra low-profile high pressure steel cylinders which have a working pressure of 5,000 PSI (instead of the more common 3,300 PSI) giving better duration even despite their smaller diameter.



Baralong Diving Extension

Jenolan Caves, NSW

Surveyed 4/9/88 by Patrick Larkin, Judi McCartney, Simon McCartney and Keir Vaughan-Taylor.
ASF 3,3 - diving compass and pacing.
ASF 1,1 - distances measured approx by diving line
draft (Sump 2) indicative only.
A4 draft 19/10/88 - Patrick Larkin.

SUSS

SUSS Bull 28(2):32

The diving tanks were wrapped and taped to protect the cave. Great care was taken in transporting the equipment into the cave. Accordingly it took 4 hours to get set-up at the top of the rift above the start of upstream sump 2. Equipment was duly lowered into the water to the divers where Simon and Judith dived first, followed fifteen minutes later by Pat and Keir in a total silt-out.

There are a number of underwater pinches in sump 2, blind leads and loops which finish with a difficult twisting squeeze 2 metres below the surfact and the pool in Barralong 3. All divers agreed with Simon's previous account of the of the difficulty of diving this sump where excellent guideline technique is essential.

The party all made the short water crawl to sump 3 - a relatively short and easy 'up and under' sump - and duly dived through to Barralong 4 air chamber.

This being the furthest point of penetration the party divided into two. Keir and Pat ditched their SCUBA gear and explored above the water for continuing passage, Simon and Judith followed the diving lead in the fourth sump.

Keir found a high lead in the roof above sump 4 which heads in the same southerly direction for perhaps 25 metres before dipping down toward the sump again and becoming very tight.

Simon meanwhile having set off into sump 4 found that the underwater passage became even more narrow than sump 2 necessatitating digging and squeezing once passed the initial pinch the passage became a confusion of small phreatic possibilities. Choosing the most obvious Simon followed it for 20 metres before silt and narrowing of the passage made retreat prudent.

Generally the nature of the cave changes beyond sump 2 into small phreatic tubes continuing no decoration other than mud. Whilst it has not been established that the way on is impossible it certainly will not be easy (particularly by diving). There are some small high leads in Barralong 3 which Keir climbed up to, but they are tight and difficult in a wetsuit.

Before pushing these possibilities it seems logical to establish the exact position of Barralong 3 and 4 relative to the surface and other caves in the southern limestone.

The party returned to Barralong 2 some 5 hours after leaving it and hauled their equipment up the rift and through the squeeze above. Since our patient porters had retreated to the Hotel we abandoned our diving tanks only to be collected by less tired cavers on another day. The entire round trip to the surface took 11.5 hours.

CONCLUSION

The Barralong maintains its status as Jenolan's most constricted diving. Although mostly shallow it should only be attempted with good reason and by the very most experienced cave divers who are totally at home in zero visibility with complex route finding in passages only just big enough to allow the diver, and with state of the art equipment.

A little more is now known of the geology of the southern limestone - 150 metres of mapped passage can be added to the Jenolan survey (map attached).

Simon McCartney

The Most Important Item Of Cave Diving Equipment

It has been said in a caving documentary that at one time in the development of British cave diving, for every five dives, someone died.

Martin Farr's book The Darkness Beckons should be mandatory reading for any potential or intending cave diver. The book describes, in gripping detail, the development of cave diving in Great Britian over two decades, and the deaths that occurred in the process. I say it is mandatory reading for the following reason: The novice cave diver learns by wrote a series of fundamental rules such as "Always stay with the line", "Never pull on the line", "Obey your air consumption rules", "Never take your SCUBA gear off to push a passage through which you cannot fit with your SCUBA gear on", and so on. In each of the horror stories that punctuate the pages of Farr's book, one reaches a stage where one realises that one of the fundamental rules has been broken. We have inherited those "fundamental rules" because others died breaking them.

Well, in case you haven't noticed, despite the fact that Simon is an English cave diver who grew up in the period of maximal diver mortality, we have done many, many dives in recent times and so far none of us are dead. We'd also like to keep it that way. Hence my motivation for writing this addendum to Simon's trip report on the Baralong.

At Jenolan a novice cave diver may progress from the Imperial streamway to River Lethe in the Southern Limestone; then, after gaining experience, to the so-called "Long Low Flat Thing"; and perhaps on to Sump 6 in Jubilee Cave (although by that stage he/she could hardly be descibed as a novice).

Jubilee Sump 6 is a very tight and demanding sump, not to be treated complacently or lightly. It is constricted and descends at about 30°. Once the sump has been entered, it would be difficult to back out. Quite some arm strength would be required to reverse in diving gear, and the diving gear would almost certainly catch on the numerous spars which protrude into the sump. One large visiting Victorian cave diver, having entered Sump 6, was obliged to attemp to reverse and was aided by two of us who dragged him from the sump by his feet!

Baralong Sump 2 is an order of magnitude more demanding than Jubilee Sump 6. The diving line through Sump 6 is 15m long - the line through Baralong is 65m long. The route through Sump 6 is relatively straightforward and the passage cross-section is predictable, whereas the route through Baralong twists and the passage cross-section changes unpredictably. Consequently, there is a much greater potential for problems in Baralong: for example, if the line was improperly laid or pulled on, in zero visibility conditions it might slip into the bottom of a key-hole shaped rift too narrow for a diver. In addition, there are many blind, submerged passageways leading off the main route through the Baralong Sump, whereas there is only one fork in Jubilee Sump 6. Any diver who became seperated from the diving line in Baralong would almost certainly die.

When I entered Baralong Sump 2 as the last diver our the party, the visibility was approximately 10cm. For most of the time, I could see the diving line directly in front of me, and when they came too close I could see the shapes of rock outcrops and the walls.

The rift which gives access to Camp Creek between Baralong Sumps One and Two continues for at least 4m below water level. At the southern end of the rift, Baralong Sump Two begins as a roughly key-hole shaped passage heading south. The sump may conceptually be divided into four sections. The first section is a relatively shallow passage which winds and twists and descends from the surface of the pool at the entrance rift to some 3m depth after about 20m of diving line. At that point the original diving line placed by a CDAA diver a decade ago runs into a blind alcove and is tied off.

Just before the blind alcove, a large passageway descends steeply. This passage may be thought of as the second section of the sump. It is roughly cylinderical and descends to a depth of some 12m over very little horizontal range. In this report, I will call that section of the sump "The Well". Swimming down it certainly feels like swimming down a well.

The third section of the sump departs form the bottom of the Well apparently between two bedding planes. After another 10 or so metres the diving line is tied off at a jug handle.

The final section of the sump is a tight rift which leads almost vertically upwards from the jug handle tie off. The rift is reasonably tight, apart from a narrow route which is wide enough for a diver. Away from the central route up the rift, its width diminishes rapidly until it becomes impassible. One swims up the rift, feeling the walls in the low visibility to find the widest path. At approximately 1m depth, there is a relatively tight squeeze in the bottom of the pool which marks the end of the sump.

On our return, I entered the sump first, and I did so with Keir's advice, head first. Fool! As Katie and Louise Devine are fond of saying, never listen to Keir! I cannot advise anyone else ever to enter the rift head first. Such an entry is very committing. It would be uncomfortable to return to the pool backwards (even with the aid of a BC). Simon, Judi and Keir all entered fins first, and there is sufficient room at the jug handle to turn around for the remainder of the sump.

On the way out, the visibility had deteriorated to abslolutely zero. Our exploratory activities upstream had stirred up the silt and it was impossible to see anything. In such conditions, passage through the sump was necessarily a slow affair. I followed the line, taking care not to pull on it. I felt the shape of the passage for the widest route through consistent with the direction of the line, rather like a blind man following a string through a rockpile, if you can imagine such a thing.

On the way out, I had passed the top of what I have described as the Well and entered the final stage of the sump (counting from the far side). At one point I felt the line become tense as I moved forward. I stopped. The line when back to normal. I moved slightly forward and the line became tense again. I then realised that the line was snagged on me. I followed the line from above back towards me and discovered that it ran around the valve of one of my tanks. Then I remembered one of Simon's many lectures: "If you get snagged, stay calm and work it out." I felt the line from below forward towards me and discovered that it ran over the line from above around the valve. So I lifted the line from below over the valve and freed myself.

The snag lasted only for a short time, but there was ample opportunity for my mind to tick over. One thought was "Am I having a cave diving accident?" Then came the thought to remain calm and work out the problem. I realised that I had a vast amount of air: I had used less than a quarter of my primary tank, and had not touched my reserve tank, so there was plenty of time. I also realised that my companions depended on me: I had read accounts of divers panicking in a tangle and cutting the line. If the line became free in this sump, whatever happened to me, Simon, Keir and Judi would almost certainly die. If I got stuck, I would block the sump - it was way too confined for anyone to pass me. In such confined spaces, the buddy system as it is taught in open water diving, or even in open sink-holes, has little application.

If you like, there is a "most fundamental rule" to cave diving. It is about the mentality of the cave diver: a momentary loss of control, or worse still, panic, must never occur. A person usually knows how he will react in a difficult position from life experiences generally and from other caving experiences. If the cave diver is not absolutely certain that he will have the necessary controlled state of mind in a tight spot, he should not run the risk. In short, the most important piece of equipment for a cave diver is not low profile steel tanks or a diving reel - it is his brain.

Shortly afterwards, someone ran into my fins from behind. At that time, I did not know, nor could I tell who it was. Then they ran into me again. Then they grabbed my legs, and gave me two squeezes: our signal to continue. Later I discovered that it was Judi. At first, she thought she had run into the cave wall. She reached out and grabbed my legs to determine if I was me or the wall.

We exited from the sump some five hours after we had entered it. It was the most extreme dive I have done to date. It had been a tiring trip, and still two hours seperated us (with our gear) from the show cave pathways in River Cave and the Temple of Baal. The entire trip wound up taking 11.5 hours.

Back in the bottom of that rift we were four tired cave divers. The "Southern Limestone Master Cave" remained elusive. But it was quite an experience, and Simon remarked: "Remember those tests following horribly twisted lines in zero visibility conditions? Well, you all passed!"

Pat Larkin

Tasmania's Caves and Forests Need Your Help

The battle to save Western Tasmania's magnificent tall forests is at a crucial stage. Recent discussions between the Federal and Tasmanian governments have raised the possibility of "special legislation" by the Tasmanian Government and no World Heritage listing. Under the special legislation, it is proposed to allow logging, woodchiping and mining inside the Stage II area. Such activities will not only destroy the forests, they will endanger such superb karst areas as Mt Weld, Cracroft, Mt Anne and Ida Bay.

At Mt Etna, the caving community has shown that it can make a very effective impact where important caves are threatened. It is high time that we threw our weight behind the fight to save the Tasmanian wilderness and its caves. We encourage all cavers to write to the Prime Minister, Parliament House, Canberra, and advocate World Heritage listing for the entire Stage II area, including the magnificent karst regions of Mt Weld, Cracroft, Mt Anne and Ida Bay. Only World Heritage listing and Federal legislation will adequately protect south-western Tasmania.

Two months ago, the Federal Cabinet was on the verge of adopting the majority Helsham report, allowing the Grey Government lose to desecrate the wilderness. The Federal Cabinet postponed the decision because of people pressure - some 20,000 Australians have written to the Prime Minister in support of full World Heritage listing. Now, more than ever, every letter counts!

On Sunday 30 October there will be a "Save the Forests Rally" in Sydney. There will be a cavers' contingent at that rally. Please come along and get the message across that the great caves of the south-west are worthy of protection!

For further information, telephone the Wilderness Society Recorded Information Hotline (sponsored by Connect International) on 552.0947, or telephone either of us (see Committee list at the end of this Bulletin).

Chris Young and Pat Larkin

The Day Serpentine Looked Like KD
and
Imperial Looked Like Growling Swallet

FURTHER OBSERVATIONS ON THE LESSER APRIL FLOOD
10-11 April 1988

Mark Staraj is a very demanding person! You should have heard the howls that he let out when he heard that we did not intend to publish our observations on the lesser April flood at Jenolan in the same bulletin as his delicately entitled article "Gurgles From Mammoth Cave" (see page 12). "But the articles would complement each other!" "The next bulletin most certainly is not sufficient!" "It's not a question of giving priority to the Spider/Imperial Connection, you should work longer hours!" "Don't be lazy!" etc, etc. We are sure half of Ashfield heard it.

So here are our observations on the lesser April flood, without which this bulletin would certainly have been poorer. Just be glad that we have resisted the temptation to entitle this article "Slurps from Serpentine Cave"!

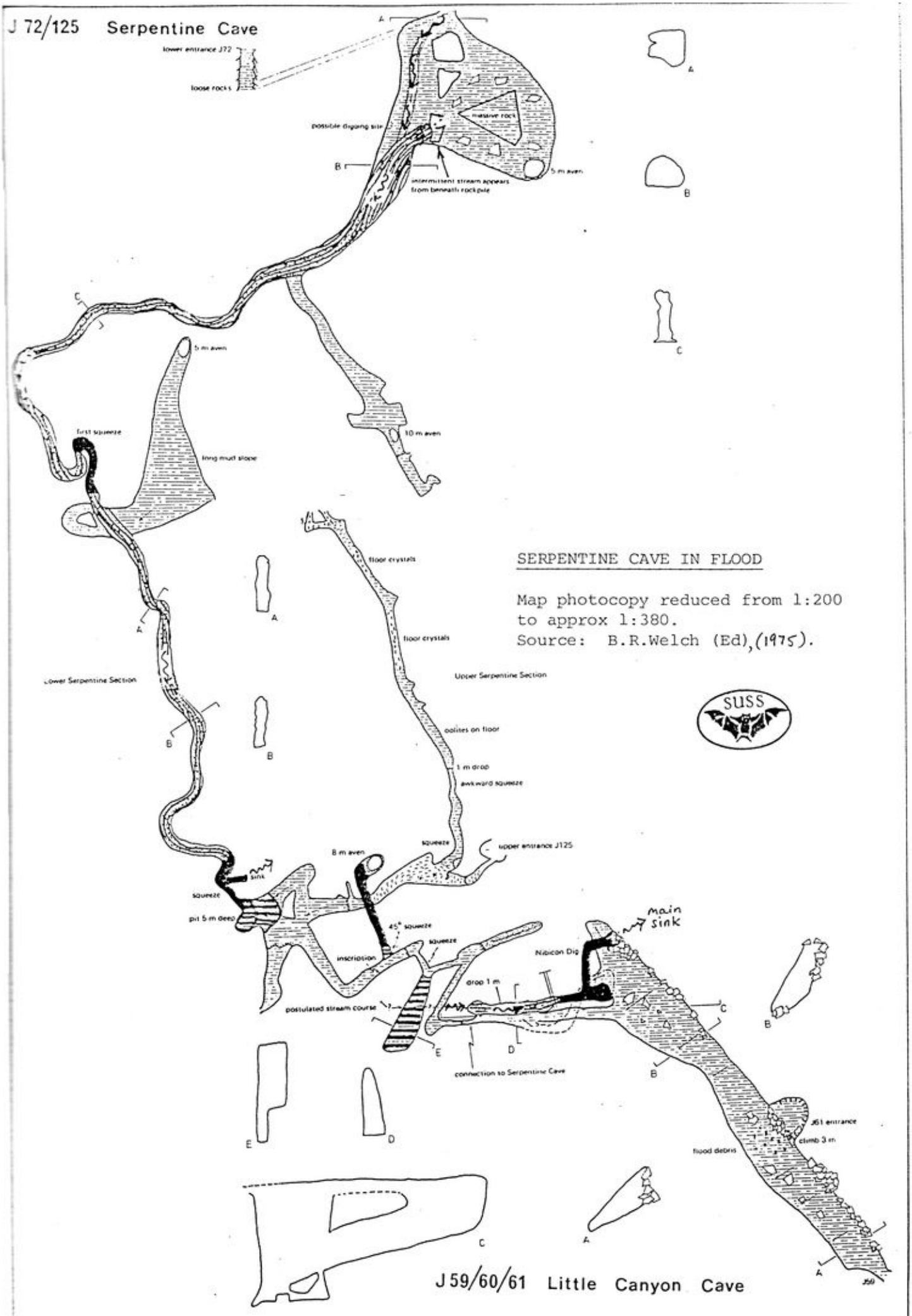
1. IMPERIAL STREAMWAY AND JUBILEE CAVE

On 10 April 1988 we entered Imperial Cave to find (or rather, not find) the diving guide line into Sump 1 some metres under the water. A huge current was welling up out of the sump. We felt the full force of the water crossing the show cave footbridge over the river: the bridge was a metre under the swollen Imperial riverway which it normally clears by half a metre. Even though the water level had fallen 2 metres from its peak level of the night before, we quickly decided that Sump 1 would not povide the usual leisurely dive.

So we retreated to the upper levels of Imperial and headed for Jubilee Cave. As we approached Water Cavern, once again the sound of water roared in the distance. Water was flowing out of Water Cavern, south along the show cave track and into a hole to the east of the track (some 15 metres north of the barrel which leads from the main show cave levels of Jubilee Cave to Bell Chamber). We hoped that it would be possible to enter the main Imperial streamway from Bell Chamber via the perched Sump 5. Standing in Water Cavern some 10 metres above Bell Chamber, our chances did not seem good. Nevertheless, we proceeded down to Bell Chamber.

Although Sump 5 (which is usually only 2.5 metres long and 1 metre deep) had swollen to 4 metres long and 2 metres deep, it did not present a serious obstacle, and we free-dived through. On the other side, the roar of the Imperial streamway was deafening! At the rapids below the so-called "Skinny Slit Entrance" from Jubilee, the Imperial stream was a metre above its usual level. On the night before, the passage at this point must have sumped out and water would have backed up into the passage from Jubilee.

Next we pushed upstream in the Imperial River itself. Imperial was carrying much more water than Growling Swallet(!) so the trip upstream was a tremendous "sporty" experience. We reached Sump 3, which would have been impossible to dive: water was welling up from this sump with even more force than from Sump 1.


J 72/125 Serpentine Cave
lower entrance J72
loose rocks
possible digging site
massive rock
intermittent stream appears from beneath rockpile
5 m aven
first squeeze
10 m aven
SERPENTINE CAVE IN FLOOD
Map photocopy reduced from 1:200 to approx 1:380.
Source: B.R.Welch (Ed), (1975).
floor crystals
Lower Serpentine Section
Upper Serpentine Section
oolites on floor
1 m drop
awkward squeeze
squeeze
upper entrance J125
8 m aven
sink
pit 5 m deep
45° squeeze
inclination
Nipican Dig
main sink
drop 1 m
postulated stream course
connection to Serpentine Cave
J61 entrance
climb 3 m
flood debris
J59/60/61 Little Canyon Cave

Satisfied that we could safely travel upstream against the flow of the water, we decided to venture downstream to look at Sump 2. The upstream side of Sump 2 is usually an idylic, still, green pool. On 10 April 1988 Sump 2 was being fed by a raging brown torrent! We were not game to go closer than the edge of that pool for fear that we would be swept into the sump.

When we retreated from the Imperial streamway, Simon was possessed by an uncontrollable urge to see Sump 6, the gateway to Far Country. The passageway from Bell Chamber to Sump 6 was also flooded, but the water was still. We suceeded in pushing two thirds of the way to Sump 6, through a number of roof-sniffs where usually there is nothing but dry passage, until we ran into "Sump 5 $^1/_2$"! Sump 5 $^1/_2$ normally does not exist.

The water in Imperial did not revert to normal before another deluge hit Jenolan a week and a half later. On that occassion (the greater April flood), a landslide half-buried the Guides' Office, which was flooded ruining the carpet, and the Imperial River peaked 7 metres above the show cave footbridge. Such a height implies that the Imperial streamway between Sumps 4 and 1 would have been full of water along its entire length.

2. THE SINKING OF THE JENOLAN RIVER

Usually the Jenolan River sinks near Watersend Cave, a kilometre to the north of Wiburds Lake Cave. On 10 April, the river was sinking in front of Spider Cave and flowing into Dingo Dig. On 11 April, the water had subsided somewhat and was now sinking about 50 metres north of Bow Cave at a slot in the western wall of the gorge below Dwyer Bluff. In dry weather the slot appears to be an unremarkable feature, but the volume of water that it took on 11 April was impressive. Simon has begun a dig in a small cave which is formed in the upper reaches of the slot. It is hoped that the dig will give access to a route to the Whooly Rhinoserous (the Jenolan Underground River north of Mammoth Cave).

When the greater April flood struck a week or so later, the Jenolan River flowed along the surface for the entire length of McKeons Valley, implying a maximal inflow of water into the Jenolan system. At the peak of the greater April flood, the Jenolan River was about one metre over the roadway at Blue Lake.

3. SERPENTINE CAVE

Pat had heard stories from Bruce Welch of the floods of the mid 1970s and their spectacular effect on Serpentine Cave. So, on 11 April we set off up the valley for the lower entrance to Serpentine. To our surprise, the lower entrance was enterable - only a relatively small amount of water flowed into it. Immediately inside the cave, however, the story was different: a significant stream emerged from the region of the huge boulder in the "entrance chamber" and flowed into the main Serpentinious passage. Travelling down the Serpentine was a delight: at first the stream flowed knee-deep rapidly around the winding, washed walls, like a very small-scale version of the streamway in Kazad-Dum. As we approached the Serpentine Squeeze the depth increased, until just before the Squeeze itself, the water was neck deep. Not surprisingly, the passage sumped at the Squeeze. Under the circumstances, not even the most foolhardy person would have attempted the Squeeze!

We exited the lower entrance to Serpentine and entered the Little Canyon Cave entrance. We could hear the roar of flowing water from outside! Water was cascading into the Nibicon Dig at a huge rate. Our observations of the lesser April flood confirm Bruce Welch's obsevation (recorded in The Caves of Jenolan: 2 The Northern Limestone) that essentially the entire flow of the stream into Serpentine is taken by the Nibicon Dig. Accordingly, SUSS has reactivated the Nibicon Dig. The main question is: Does the water from the Nibicon Dig flow into the northern part of Mammoth Cave or directly into the Whooly Rhinoserous?

Pat Larkin and Simon McCartney

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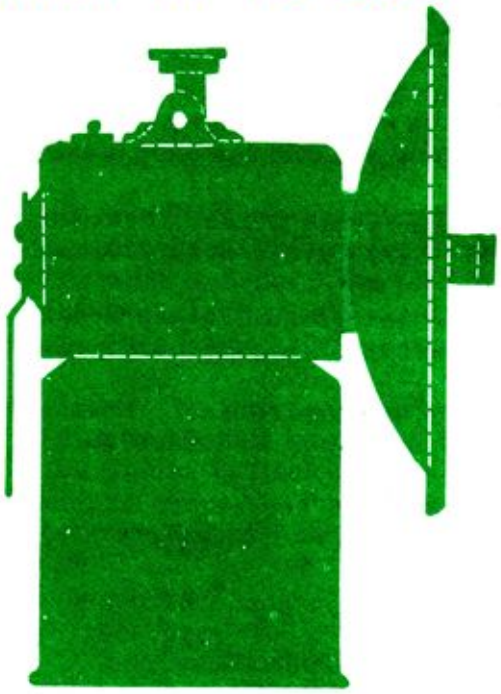
Lumen in Tenebris



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