BULLETIN of the

Sydney University Speleological Society

Lumen in Tenebris

SUSS

FOUNDED 1948

SUSS BULLETIN 31(2) April-May 1991

Registered by Australian Post — Publication No. NBH 0712 — Category B

Box 35, Holme Building, University of Sydney, N.S.W. 2006.

SUSS TRIPS AND MEETINGS

MAY	2	**SUSS Annual General Meeting**, 7.30pm at Common Room, Holme Building. Wine & Cheese. Fantastic slides of the deep caves in New Zealand.
	4-5	**Jenolan Caves** Mark Staraj 042 296760, 2387715w
	5	**Party.** Brendan Hyde is having another one of his eccentric parties 12 noon, 10 Park Ave Gordon. BYOG and croquet mallet.
	11-12	
	18-19	**Jenolan Caves** - Trip to GNC in Mammoth Cave already planned. Carol Layton 5199769
	25-26	**Colong Caves.** Permit Pending. Keir Vaughan-Taylor 6923516w 8197153h.
	28	**Committee meeting**. Tuesday night 6.30pm Harold Park Hotel.
JUNE	1-2	
	6	**SUSS Meeting**. 7.30pm at Common Room, Holme Building. Wine & Cheese. Excellent cave diving slides planned.
	8-10	**Jenolan Caves** for the Queens Birthday Weekend. Look forward to plenty of surveying, exploration and digging in Serpentine Cave. Martin Scott 692 4093uni.
	22	**Caver Impacts on Caves**. A forum to evaluate what impacts cavers have on caves and karst. Invited papers, & practical sessions to set methods for a state-wide assessment of cavers impact. **Cavers Dinner** with a key-note speaker. Sydney University - Holme Building. Numbers limited. Registration before 31st May :- Impact Committee (c/o ASF) PO Box 388 BROADWAY NSW 2007. Further information from Terry Coleburn (047) 514587
	29-30	
JULY	4	**SUSS Meeting**. 7.30pm at Common Room, Holme Building. Wine & Cheese and more caving photos.
	13-14	**Jenolan Caves** - Uni holidays trip, probably will be extended midweek.
	27-28	**Bungonia Caves** Keir Vaughan-Taylor 6923516w 8197153h.
AUGUST	1	**SUSS Meeting**. 7.30pm at Common Room, Holme Building. Wine & Cheese and another great slide show to be organised.
	17-18	**Jenolan Caves** - Keir Vaughan-Taylor 6923516w 8197153h.

Membership for 1991 is now overdue. See Carol Layton our treasurer, or mail cheques to:-
SUSS, Box 35, Holme Building, University of Sydney 2006.
$12.00 - Prospective membership
$25.00 - Full membership
If you are a financial member and did not receive your first SUSS bulletin for 1991, speak to Chris Young 5506742h.

Further trips are being planned to:- Abercombie Caves, an extended winter trip to Tuglow Caves during the July uni holidays, and cross country skiing trips when the snow arrives (Mike Gibian 6306594h, 8588177w).

EDITORIAL

Well...another bulletin already! What can we make of that?

In truth it means we haven't yet produced our minimum of 4 bulletins a year as required by Australia Post. So, it means nothing new on that score. No need to get alarmed.

More importantly, that this bulletin could be put together in such a quick time is a tribute to me (of course), the contributors who pulled things together at such short notice, and not least the endeavour and dedication of every SUSS member.

The club has been and continues to be very active in a wide range of areas and roles - the bulletin only scratches the surface of this involvement. With so much time and energy going into the projects there is often little time to properly document the clubs activities as we should. Indeed the club as often been in danger of coming apart from pulling in too many directions at once - such is the enthusiasm in SUSS and the diversity of its members talents.

Just take a look at this bulletin. The first article summarises the activities of SUSS in 1990 and was our submission to the Sports Union. In recognition of SUSS achievements SUSS was awarded the Sports Union Club of the Year Award for 1991. Every member should justly be proud of it. Indeed if SUSS had been a Sports Union member club since 1948 instead of 1984 (and had submitted every year) I wonder just how many of these trophies we would have won - lots judging by SUSS's distinguished history.

The next article is an excellent piece on the conservation battle to protect Yessabah - and represents only a tip of the iceberg of the sacrifice and dedication of many SUSS members to this cause.

Then there is a report on just some of the activities from a very succesful Easter "weekend" that saw the successful connection of Diggins Diggins Cave to the rest of the Serpentine Cave system.

While numerous SUSS members have made it possible for all these projects and successes to happen there are still very few who have been prepared to make sure that SUSS reaps the full benefits - from writing trip reports, surveying caves, drawing up maps, editing bulletins, being a hard working commitee member, O-Weeks, etc. etc. etc. Why not find out in what little way you could help - even if its just a hand to help wrap and post the next bulletin?

And **Congratulations to all 1990 Sports Union Club of the Year members!**

Mark Staraj.

YESSABAH

What Has Happened at Yessabah.

History recalls that the formative years at Kempsey were pioneered by a logging industry based on giant cedar trees. The wood from these trees was exported to England where forests had already been depleted for construction of ships to support colonial interests. Victorian governments had some regard to resource protection and logging bans to preserve Kempsey Cedar were applied from distant Sydney . Cedar smuggling provided employment opportunities to sawyers of the incredible wage of 5 pounds per week and as a result by 1845 Kempsey cedar no longer existed.

During these same years the Yessabah Hill 15 kilometres west of Kempsey was designated a reserve because of its outstanding caves, rainforests and fossils. Over the years the national heritage values of the hill were gradually forgotten and a mine, started in the 1930s grew to a size where by 1980 a number of caves had been destroyed. Mining plans drawn in the 1960s reveal an intent to remove Yessabah Hill completely . Except for a series of major errors on the part of the mining company and a gathering environmental awareness by the public, those plans would have demolished the Hill.

In 1982 David Mitchell Melcann purchased the Yessabah mine from Australian Portland Cement. This would be of passing interest in the farcical play that follows, except that this event was to become of key importance to the bearing of the Yessabah Court proceedings. When the new owners of the mine assumed control their first action was to replace the four local workers on the mine with men of their own. The manager of the mine occupied a house near the mine site and he was given two weeks prior to Christmas to move to another premises. A tragic story in the true Hinch tradition but also catastrophic for David Mitchell Melcann, in terms of local public support. Other significance of the ownership transfer was only realised much later.

In 1983 DMM failed to renew their lease before the old lease lapsed and this meant that they would have to reapply. This was no doubt regarded by their management as an annoying technicality that would be dealt with in the fullness of time. However, an unexpected problem arose. National Parks and Wildlife lodged an objection to the new lease preventing the granting of a new lease. This objection was to stand for six years before it was realised by the speleological community that there was no lease, and that mining at Yessabah could be legally challenged.

The operation of the mine over the intervening six years had been given a certain legitimacy when the Department of Minerals and Energy issued a mining licence. This licence permitted for the removal of material from stockpiles, loose rocks and boulders that had been mined prior to the expiry of the valid mining licence.

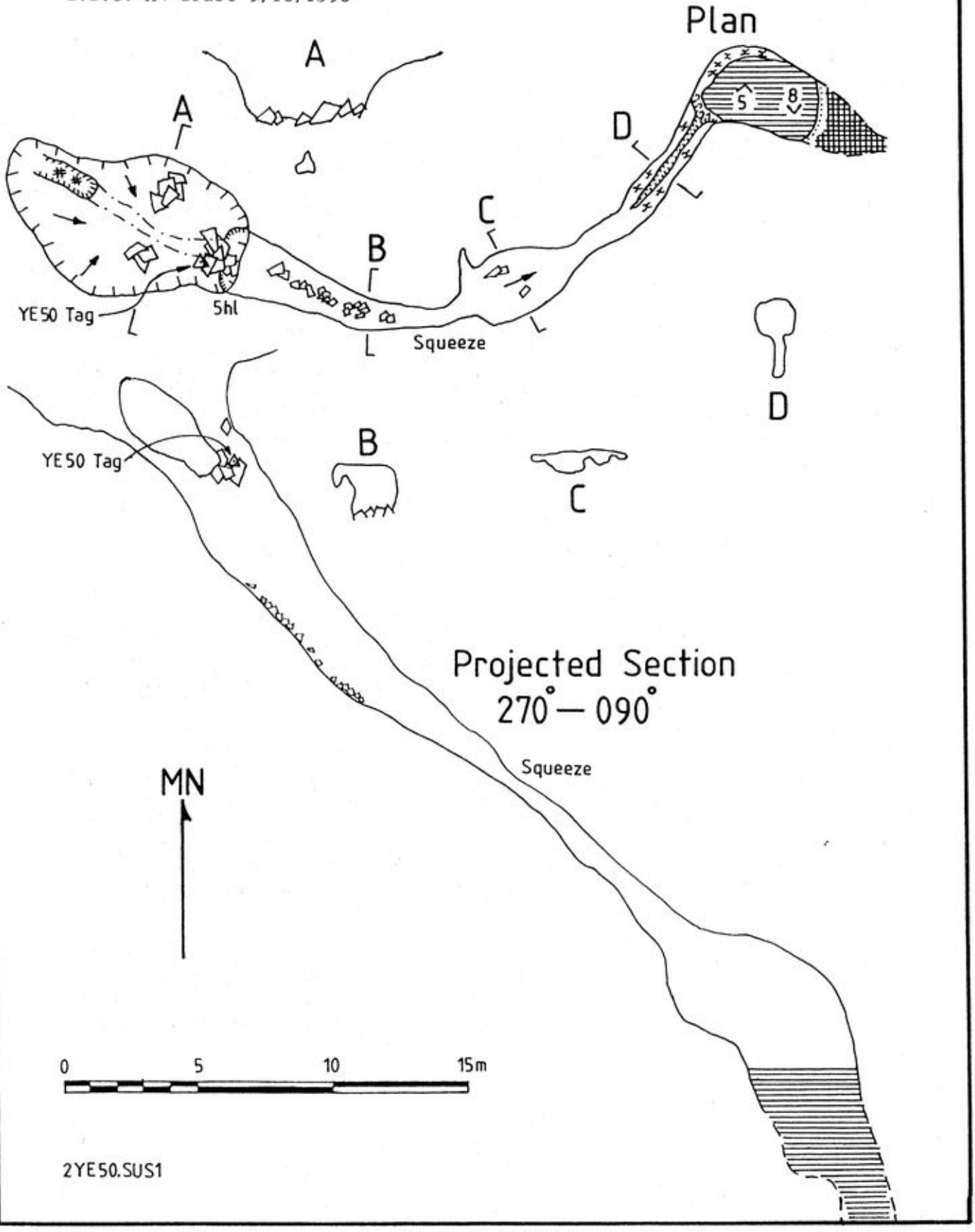
It was the removal of these "stray boulders" that led the Kempsey Speleological Society to believe that more caves were facing destruction. KSS wrote to the ASF with underwhelming response. SUSS members were advised of the situation and exploratory visits to Yessabah revealed an area of rare beauty of exceptional value. We learned of the inadequate legal documents supporting the operation and intended to explore Court proceedings but we also approached the problem by developing a publicity campaign which was successful in unexpected ways.

Derryn Hinch is a tabloid TV journalist with a sympathy towards environmental issues and an audience of more than a million people. We escorted a Hinch news crew to the site and provided them with a preresearched story and some excellent footage of sweet furry bats. When the 10 second promotional clips for the story went to air, the Hinch office was immediately contacted by David Mitchell Melcann and warned that DMM was <u>not mining</u> at Yessabah but instead were removing loose tailings under the perfectly legal mining licence that had been issued by the Department of Minerals and Energy. They warned that if the segment went to air they would take legal action. Hinch

YE 50 WATER CAVE

Yessabah N.S.W.

Surveyed 26/9/1990 by I. Cooper, C. Norton, R. Torkel, K. Vaughan-Taylor
using Suunto-Oy compass and clinometer and fibreglass tape to A.S.F. 5.4
Length: 54m Depth: 26m + 8m underwater.
I.B.C. A4 draft 9/10/1990



used the Unisearch service at the University of New South Wales to locate and hire a mining engineer, Dr Gour Sen. He was flown to Yessabah to perform scientific tests and confirm whether DMM were mining or not. On camera Dr Sen was shown applying a chemical analysis to date the age of exposed rock. He was asked "Are you absolutely sure that they have been mining here recently ?" and he answered yes.

Bob Carr leader of the opposition asked questions in the Parliament about whether the mine at Yessabah was operating illegally. At the same time Hinch went to air charging the mining company with "raping, pillaging and plundering" .

Shortly afterwards the Chief of Staff of the Department of Minerals and Energy, Mr Ken Hollands telephoned Dr Gour Sen. What was said we shall never know except that the conversation severely frightened Mr Sen. When questioned later by the Hinch reporter Chris Smith, Dr Sen changed his earlier claims and denied he had made any assertions about whether there was mining at Yessabah and also claimed that the Hinch Program had misquoted him. Dr Sen was to say later, to the Environmental Defenders Office that "he must extricate himself from this matter at all costs". In response to the Parliamentary questions the Department of Minerals and Energy representatives payed a "surprise" visit to the mine site. After thoroughly examining the site these representatives declared that there was no evidence of mining and the allegations were groundless.

Mr Andy Spate had been attempting to negotiate for National Parks and Wildlife Service over the issues relating to the mine. At the January ASF conference, Mr Spate encouraged SUSS committee members to proceed with legal action in an attempt to promote a "meaningful dialogue".

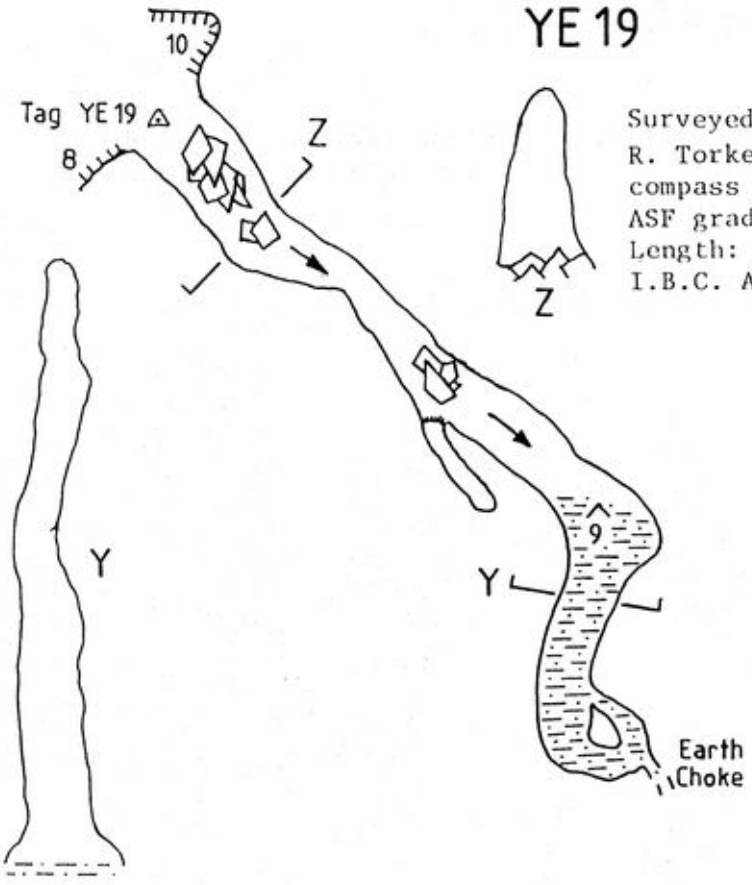
I applied for legal aid through the government agency, the Environmental Defender Office and with the support of their solicitors this application was successful. The case could be heard in the Land and Environment Court where we would claim that David Mitchell Melcann were contravening zoning regulations. Yessabah is not zoned for mining and the mine could not normally operate in that area. If however a company has worked the area for many years, then that company has a right of "previous use" and they are permitted to continue business as long as there is no expansion greater than 10 percent. David Mitchell Melcann has that right at Yessabah but .....they were claiming that they had not been mining at all for the last six years ..... in which case their "previous use" rights would have lapsed.

If however, they were to admit that they have been mining, an action could be brought in the Mining Court. For an individual to appear in the Mining Court special dispensation called a fiat must be authorised by the Attorney General that gives the applicant Standing. The fiat makes provision that a case of significant public interest may be heard in front of the Mining Court. If the fiat is granted , this only allows the case to be heard in the Court and has no influence upon the outcome of the trial.

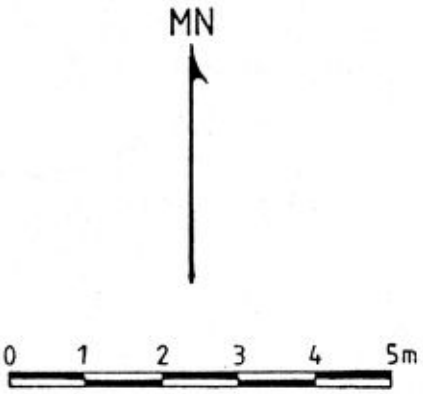
In Australia, history records very little success obtaining fiats for environmental cases. In Tasmania when standing was sought regarding the Dams issue, the Attorney General felt that there was a case to be tried of significant public interest and gave the fiat. He was subsequently sacked by the then Premier, Robin Grey who made himself Attorney General and cancelled the fiat. When the Attorney General of Queensland was asked to grant standing for Central Queensland Speleological Society in the Mt Etna issue, he remained silent. This inequity in law, is one reason why mining companies are able to flagrantly breach laws and not worry about the consequences of legal proceedings.

In addition to obtaining the permission of the Attorney General, we would need a further application to legal aid to run the case in the Mining Court. We launched both these applications with perhaps a naive faith in the justice of our case. At this time we were criticised as being fringe group greenies without the support of the overall environmental movement. Fortunately the Mt Etna

YE 19 Yessabah N.S.W.



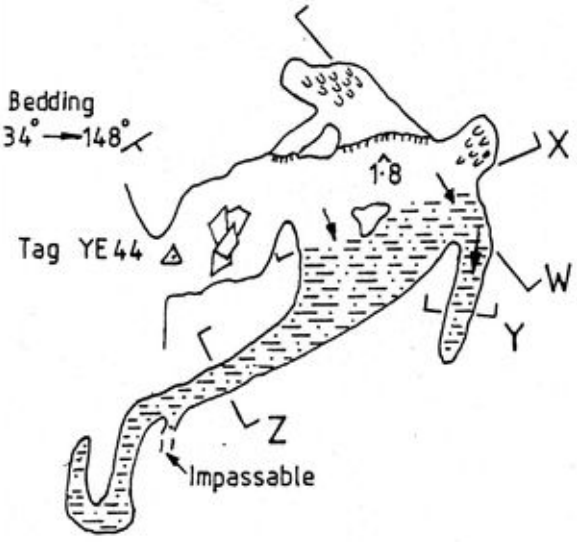
Surveyed 26/9/1990 by I. Cooper, C. Norton, R. Torkel, K. Vaughan-Taylor using Suunto-Oy compass & clinometer and fibreglass tape to ASF grade 5.4
Length: 13m Depth: 6m
I.B.C. A5 draft 9/10/ 1990

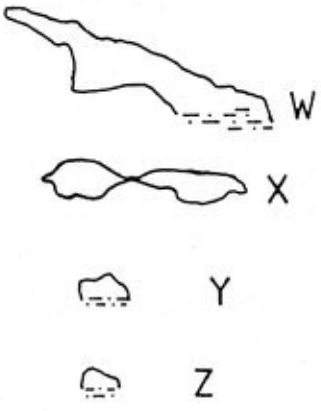


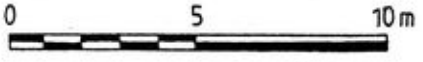
2YE19.SUS1

YE 44 IMPOSSIBLE CAVE Yessabah N.S.W.

Surveyed 28/9/1990 by I. Cooper, C. Norton, R. Torkel using Suunto-Oy compass & clinometer and fibreglass tape to ASF grade 5.4
I.B.C. A5 draft 9/10/1990





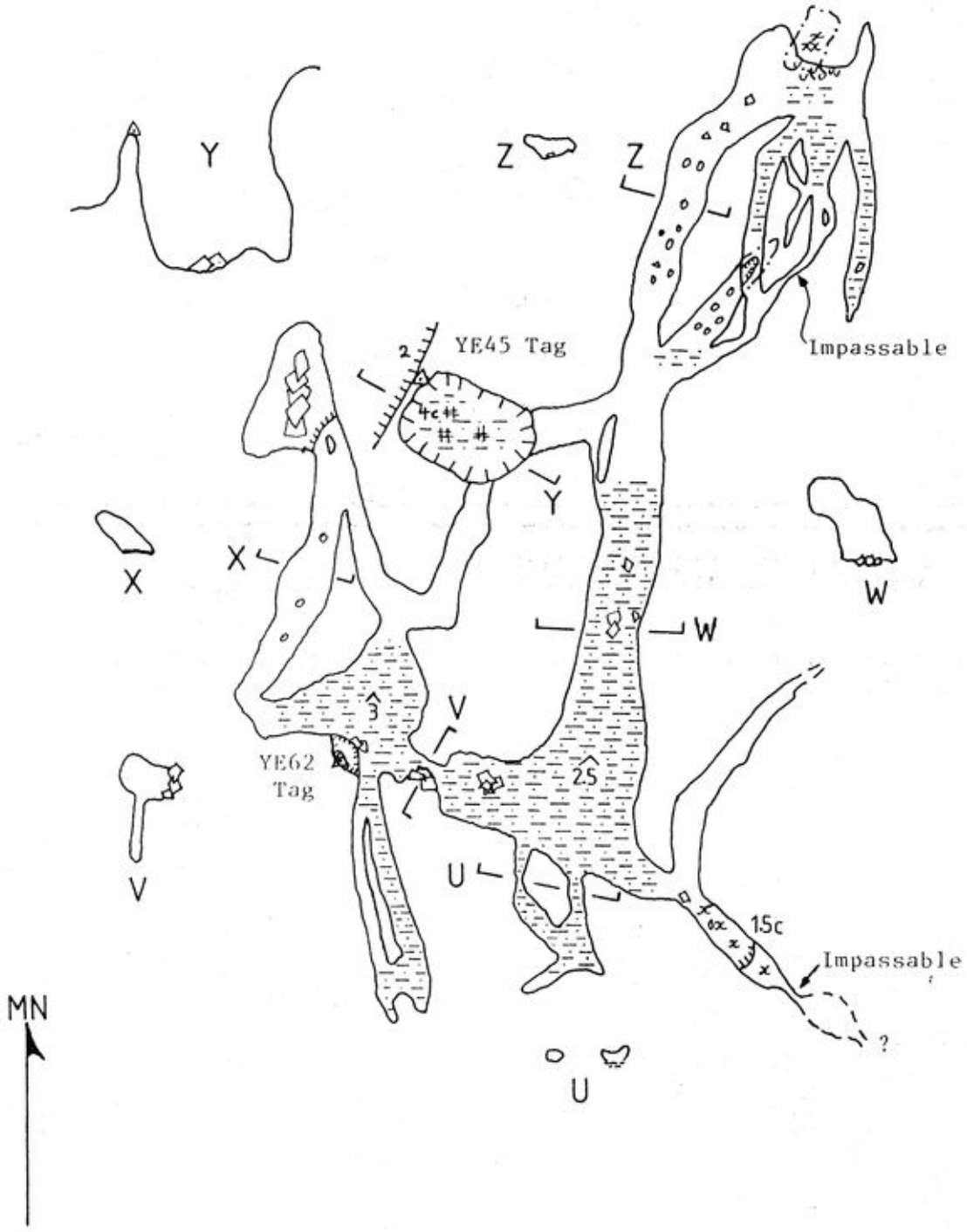


2YE44.SUS1

YE45/62 DAM CAVE

Yessabah N.S.W.

Surveyed 26/9/1990 by I.Cooper, C. Norton, K. Vaughan-Taylor, S. Willis using Suunto-Oy compass and clinometer and fibreglass tape to ASF grade 4.4A Length: 134m Depth: 7m



2YE45.SUS1

I.B.C. A4 draft 10/10/1990

experience had shown that support from as many environmental groups as possible can be invaluable and so as a matter of course we had been sending major conservation groups with bulletin sheets to keep them informed of the state of our case. We managed to orchestrate letters of support for our fiat application from these groups to the Attorney General, Mr Dowd.

While waiting for a response from Mr Dowd, we were advised that great progress was being made with a compromise plan negotiated between the National Parks and Wildlife Service, and the mining company. We were urged by all concerned to "lay off" and now we were faced with the prospect of placing our faith in the compromise plan and dropping the Standing application (probably forever), or continuing our action.

Mr Andy Spate, of National Parks and Wildlife advised us that the compromise plan limited the new lease to 5 years, extraction was going to be limited to 15,000 tons a year and the mine operation would remain in the present area of development. National Parks had applied for the Yessabah Hill to be declared a Nature Reserve but this application had been blocked by an objection by the Mining Company. National Parks were anxious to see a settlement reached so the company would lift this objection. Our actions were "rocking the boat".

Kempsey Speleological Society was reluctant to support us since it was being assured by the National Parks and Wildlife Service that their negotiations were being threatened by our disruptive influence. KSS had been shown a "restrained" mining plan (which was probably genuine) but the full implications of that plan are not clear to a casual observer.

We did not know it then, but the Attorney General, Mr Dowd was in the process of turning our application down and our fight in the Mining Court was to never take place. In retrospect, we now know our case was in serious trouble.

Around about this time Greenpeace was involved in a somewhat radical media action, blocking a covert industrial waste pipe under the ocean. Greenpeace was going to be the first group to apply a newly legislated act, Section 25 of the Environmental Offences and Penalties Act, in an action against Caltex for its undersea pollution. For reasons we may never know, that case never came to Court.

Section 25 provides Standing for an individual or group at the discretion of a government body such as the State Pollution Control Commission. Since we believed the Attorney General would be reticent about granting our fiat we thought that with an application to the SPCC for a Section 25 there might be extra pressure on the SPCC to grant the fiat by the Attorney General to relieve him of the the problem of public outcry. At worst it gave us two bites at the cherry.

By now the significance of the transfer of ownership from Australian Portland Cement to David Mitchell Melcann was realised. The mining licence which permitted tailings and loose boulder recovery did not transfer with the ownership of the lease. Not only was there no mining lease, there was no legitimate mining licence.

It was a major worry that if National Parks dropped its objection (which was likely if a negotiated settlement had been reached) then the Minister of Mines would grant a new lease and our Court case would be academic. Certainly we thought that the Minister could not legally grant a lease and the Environmental Defenders Office faxed numerous letters pointing this out. Other environmental groups also wrote to the Minister of their concern about furry bats and finally he cleared his mail box of this junk mail by declaring that no lease would be granted until after the issue was resolved in Court.

Our resolve to apply for the Section 25 was strengthened when in a meeting with representatives of David Mitchell Melcann and the Department of Minerals and Energy, we were able

to view the mining plan that National Parks had endorsed in their settlement offer. This plan showed the construction of a waste disposal area ten times greater in the size of the present dump, a three - four times increase in the extraction rates rising to an annual extraction of 50,000 metric tonnes and a lowering of the quarry benches to approximately 30 - 40 meters below their present level. The plan showed the boundary of the mining lease was close to the existing damaged area but wandered, and on average lay approximately 10 meters from the present quarry wall towards the rainforest and Karst area. The top of the hill was to be removed. Even assuming that DMM had a mining lease, this plan was not permissible by law without an environmental impact statement since it represented an increase in extraction that was greater than 10 percent. This did not seem to have occurred to them. In the meeting it was indicated that the mining would be away from the western quarry walls and the caves. The waste disposal area they said, was "a miscalculation" and there was to be increased disposal area. They said there would be a re-generation plan under the advice and management of National Parks.

Bungonia is tragic example of the value of a mining lease conditions. Mining companies may clearly breach whatever conditions that their convenience dictates and without fear of legal consequences. In the meeting our group indicated that we were not satisfied with lease conditions as any a guarantee of protection. We agreed to formulate a settlement plan and the means of enforcing the plan would be determined by our lawyers. This in effect means that David Mitchell Melcann will be required to give an undertaking to the Land and Environment Court. Unlike mining lease requirements, a fiat from the Attorney General is not required to enforce them. Failure by a company to comply with the undertakings is Contempt of Court punishable by penalties including winding up the company and jail sentences for the Board of Directors.

The same morning that we were due to appear in Court, the news arrived that the SPCC had granted us a Section 25. It was unfortunate timing. David Mitchell Melcann's lawyers went to Court with the belief that "it was all over" and my barrister went with, a "Big Stick". It was a revelation that we were suddenly in a position to take out an injunction and close the mine and in order to avoid the collar of an injunction they gave undertakings to the Court not to blast or remove bedrock until the final trial. Perhaps they knew about the fiat application to the Attorney General and perhaps they knew that we were "fixed" in that department, but certainly the Section 25 caught them unawares. The word "treachery" was doubtlessly in the vocabulary of David Mitchell's lawyers that afternoon and the immediate response of the company was to deny all access by our experts to the mine site.

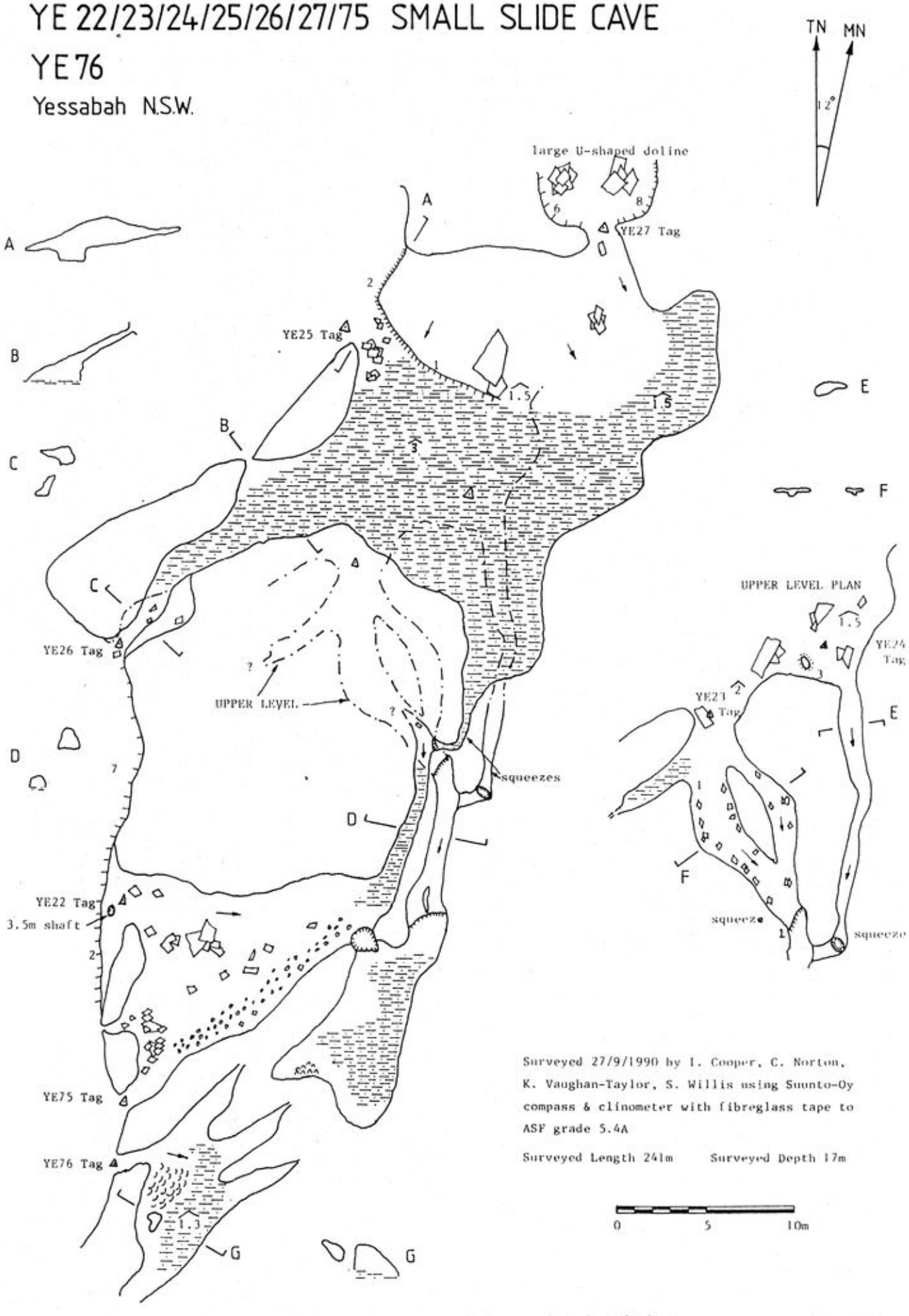
The development of a mining settlement was now much more difficult since it was necessary for our experts to examine the site . A hurried letter of apology was dispatched, explaining the sudden arrival of the Section 25 on the morning of the Court hearing. The letter reassured them that we still very much wanted a meaningful dialogue. Settlement could not be reached without access to the mine site. Naturally, until a settlement was consumated it would be naive to terminate legal proceedings. We certainly were sincere about designing a solution by which a mine might be tolerated on the site and it was with reserved suspicion that permission was granted to inspect and we took the opportunity to gather as much information as we could.

It should be possible, we thought, to remove limestone from sections of the hill such that there is minimal visual impact and no further intrusions on cavities and meso-caverns. Les Hall, bat expert flew from Brisbane to see the main Bat Cave. He was apparently highly impressed and commented that the site was of much more importance than had been realised. Armstrong Osborne noted that the caves were likely to form an interconnected system and that intrusions from the mine could alter the climates of the caves and this might change the temperatures within the caves and result in serious disturbances to the habitat of the bats. There was also a danger of breaching the water table.

YE 22/23/24/25/26/27/75 SMALL SLIDE CAVE

YE 76

Yessabah N.S.W.



Surveyed 27/9/1990 by I. Cooper, C. Norton, K. Vaughan-Taylor, S. Willis using Suunto-Oy compass & clinometer with fibreglass tape to ASF grade 5.4A

Surveyed Length 241m Surveyed Depth 17m

I. Cooper A3 draft 31/10/1990 2YE22.SUS1

Our feelings of dismay over the presence of the mine were emphasised by the opinions of environmental groups now also involved in the issues. These were the groups that peppered the SPCC and the Attorney General with letters of support on our behalf. Their attitude to the mining is one of "zero tolerance" . They perceive our negotiations as an attempt to rationalise the existence of a mine with no legal or moral right to occupy the area, and our attitude seems far too conciliatory. We have legal aid, the legal advantage, the insult of unfair cover up practices and small furry bats to care for..... the environmentalists believe we should, "lower the blade and push". If the case goes to Court, then the practices of the Department of Minerals and Energy would be layed bare to public scrutiny. This factor acts in favour of obtaining more favourable conditions in any settlement since there are many embarrassing indiscretions which some people would prefer were not explored in the gaze of the public arena.

The way we conduct business on this issue reflects on our credibility in the future. As part of an enticement to compromise, David Mitchell Melcann offered the speleological community a position on the "Interdepartmental Committee" which may represent a communication channel from ASF to the limestone mining industry. The position might be toothless however it might also discourage certain mining practices and encourage more expenditure on studies by academics grossly under utilised by industry and government. Such liaison may prevent new developments in valuable karst areas from ever beginning and perhaps with backup from ASF help to end undesirable mining works.

While it is clear that the mining industry only moves in the interests of the community when the "blade" is poised, it should be seen by the industry that we are negotiators capable of recognising the needs, interests and importance of the mining industry. There are many other important karst areas under threat from mismanagement. These will no doubt soon receive more attention from speleologists but there may not be the same series of fortuitous mistakes by our adversaries.

Perhaps for some this bribe is not worth the price of a mine on Yessabah. There is one other major factor that encourages the evil of "negotiation". My ever confident barrister frequently reminds me "litigation is never certain". At Mt Etna the mining company showed that it was prepared to expend large sums of money fighting off greenies, and in the end the money they paid for good lawyers, won their case. At Yessabah they could pay for the best legal advice and with support from a sympathetic government and local council eventually development consent might be obtained. What is won today may later be lost..... as was the case at Bungonia. There are no guarantees but a negotiated settlement more firmly fixes the protection of the area for as long as an organisation such as ASF is capable of monitoring them.

These last weeks we have prepared both for settlement and a possible Court case. The various experts that visited the site have made affidavids quanitifying the importance of values relating to heritage, flora, fauna and karst. We need to prove that mining is inconsistant with these values and that there has been mining contrary to regulations. To this end the reluctant Goure Sen will be subpoenaed and his evidence under oath could become public. Tonnages removed from the mine may be deduced from the royalties paid to the Department of Minerals and Energy and from a photogramatrist's examination of aerial photographs. Since 1983 approximately 100,000 metric tonnes of material have been removed and this is confirmed by the royalty payments.

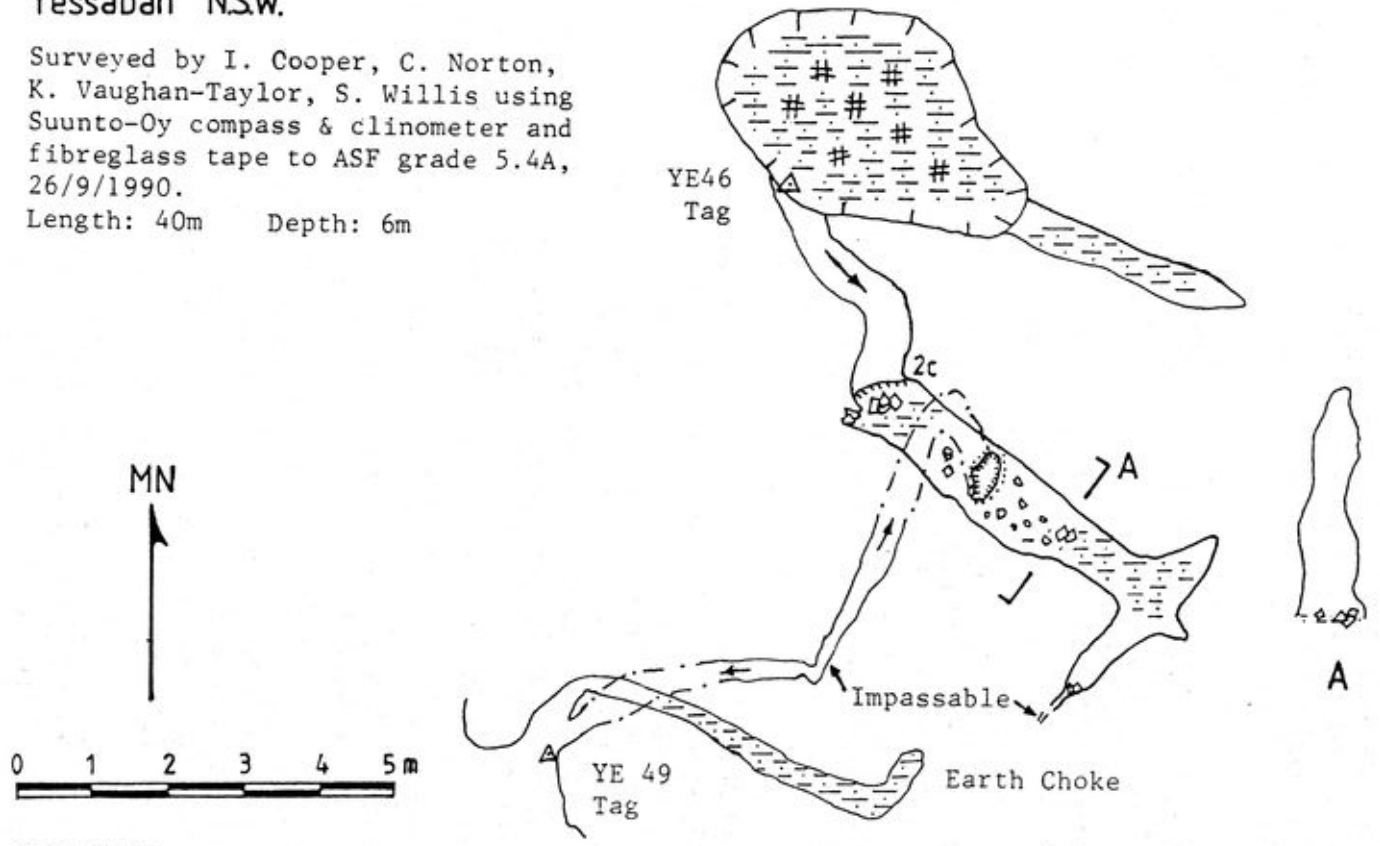
Ian Cooper drafted a new mining plan designating all mining to take place only on the lower benches of the mine. It seemed that the area most likely to intersect caves was in the upper benches since here already a number of caves have been destroyed. On the existing lower benches there is no sign of more caves but there is a risk of intersecting the water table if the level of the benches goes too low. Further removal of material on the upper benches would cause such a high cliff line that the edge stability will be further degraded. In fairness, the mine planned to mine along the dip line away from the cliff face and cavernous area. It should be noted that this was not done previously and the present cliffs are about 25 metres high and unstable. They will inevitably slide into the mine benches under the influences of normal erosion with the loss of some rainforest and caves.

YE 46/49 THE DRAIN

Yessabah N.S.W.

Surveyed by I. Cooper, C. Norton, K. Vaughan-Taylor, S. Willis using Suunto-Oy compass & clinometer and fibreglass tape to ASF grade 5.4A, 26/9/1990.

Length: 40m Depth: 6m



2YE46.SUS1

I.B.C. A5 draft 15/10/90

The main considerations of our mine plan include immediate regeneration of the top benches although there will be removal of unstable rock and an upper limit on the total extraction permitted from the mine and then only from within designated areas on the mine. At first we were unimpressed at the 21 year lease. This seemed important to the mine manager and he emphasised that this was the normal period at which mining leases are granted. After some consideration we felt that the real factor of importance was the total limestone extracted, rather than the time over which it was taken. Once an acceptable quantity of extraction has been determined, slow extraction is less damaging since smaller blasts are used and accompanied by a smaller less frenetic mining operation.

DMM claimed that at least 700,000 metric tonnes of limestone were required to be economically feasible. Ian's new plan which confined removal to the lower benches only, provides 600,000 tonnes of limestone. This is a quantity above what they are permitted to take without performing a new Environmental Impact Statement. Over the lifetime of the lease period an EIS will be done and then the full amount will be extracted.

In November we were asked for an extention of time to consider the settlement proposal which we extended until after the new year. We felt that they were likely to accept the proposal since all the lose berock and tailings which had previously been stockpiled was nearly exhausted.

As usual most of our group set off on christmas holidays including myself. During this time the Minister sent notification to the Environmental Defenders Office that he intended to grant a new mining lease over the Yessabah area. There was a hurried return of legal counsel from holidays around Australia, however the Minister succesfully consumated the lease. The Section 25 makes provision to prevent breaches of the law but not penalise criminal activiies in the past. It may be that Yessabah has been mined without a lease for seven years but this point is rendered mute. The new lease legitimises the legal right for DMM to continue mining and now we must show that this lease is unlawful. We sought to subpoena the Minister's documents relating to the granting of the mining lease but we were informed that the Minister was not part of the Yessabah case and these documents would not be supplied.

After some weeks David Mitchell sought to have its undertakings not to blast or remove bedrock removed. At this hearing we stated that we intended to show that the newly granted mining lease was unlawful and we wished to restrain the lifting of the undertakings. In the consideration of the "balance of convenience" we were unlikely to be able to outright prevent mining in the interim but we could certainly impose restrictions on mining. Furthermore in an attempt to obtain documents relating to the Minister iinterference we sought to join the Minister of Minerals and energy in the proceedings.

DMM agreed to restrict mining to one particular area which we nominated as having a minimum impact on the environment and the Court also joined the Minister in the proceedings. The judge said that he thought that the Minister should do as much as he could to provide information for matters before the Court however the Minister was not pleased at being joined and has appealled against the descision. This appeal will be heard in April 19th.

A few weeks after our agreement to restrict mining within a confined area was consumated, DMM claimed that this area was insufficient and wished to be able to mine another section as well. By this stage the story was was viewed as a concoction. We hired a mining consultant to inspect the mine and ascertain the truth of their claims and received from the consultant a very unexpected report. It certainly is true that David Mitchell Melcann could not extract sufficient limestone for their needs because the ground is full of sediment filled caves. Not only was the compromise area they wished to mine, filled with caves but also the entire section within the main body of their lease was highly cavernous. Just as Armstrong Osborne had predicted. As a limestone mine the operation is an economic loser.

The question remains now as to whether the Yessabah area has transcended its value as a mine and become a political pawn. Whether the Yessabah Court battle will proceed because the mining industry wishes to make a politcal stand against greenies or whether common business sense will prevail and an economic loser is to be dropped will be decided in the next few days. I think I would prefer that Yessabah were saved because of the recognition of its environmental importance and the support of the cavers across Australia but if it is saved because its destruction wasn't going to make money then at least we are governed by some sort of reason albeit a motivation of greed.

The Conservation Values at Yessabah

Syney University Speleological Society organised trips to Yessabah to explore and survey the significant caves in the area. We began documenting the trend, development and interrelationships of the caves and surveyed as many of the major caves on the pinnacle karst as the time permitted. We then linked these surveys together with an overland traverse which included a line of karst features crossing farming property on the hillside opposite to the western side of Yessabah hill. These features included a number of small cave entrances that had been blocked and one significant doline previously used as a garbage dump. The doline was found to contain two 5000 gallon water tanks, the remains of an FJ Holden, and an assortment of refuse from the 60's and 70's.

The Kempsey Speleological Society have already mapped 92 caves on Yessabah Hill and our efforts raised the entrance tag numbers up to the century. Our survey efforts show that their work has been accurately and thoroughly executed and with some squeezing added some extensions to the previous maps. Although our survey efforts are duplicating much of their work, our efforts are not wasted since the raw data we obtain is to be stored on the Geodesy database, capable of three dimensional graphics presentation and data manipulation by computer.

As Armstrong suggested, interconnection of the caves is a strong characteristic at Yessabah, with different formation characteristics in close proximity to one another. In some cases several caves may form within metres of one another under completely different influences and developing characteristics attributable to those influences.

Joints within the limestone of the Pinnacles area contribute to the vertical shafts and impressive pinnacle development. The walls of these deep fissures are sculpted and dissolved by cascading rain water and descend 25 meters to the large phreatic chambers of Daylight Cave. The vertical shafts are created along joints which interconnect with horizontal vadose passages.

The abseil into Daylight cave reveals unexpected systems of skylights and connections leading to the surface sometimes even below the abseil. Daylight was found to contain millions of small fossil bones calcified into the floor of the upper levels and more significantly, the daylight areas of the cave are crowned with formations on the floor bearing many of the stromatalitic features of the craybacks seen at Jenolan and Wombeyan. These were photographed and forwarded to a group at Sydney University studying the crayback formations.

East of these shafts into Daylight, a canyon like doline marks the ancient collapse of a cave that was once the extension of Y27. Its' entrance is now nestled in the southern end of the canyon with the northern end at the top of a cliff overlooking bench RL53. The cliff end of the canyon is

largely filled with rectangular boulders which are possibly the remains of the collapsed roof. While there are only small caves and fissures to be found within the boulder pile, the sides of the canyon contain joint features that extend at right angles, some 20m, and merge into the vertical shafts of Daylight Cave.

On the western side of the Pinnacles area, the large surface area of the limestone cliffs collects sheets of rainwater that spill down into the pinnacled landscape of the western face, eroding the gullies, ravines and erosion pools. The major caves such as Y30 (Deep Slide Cave) dip in the opposite direction to the surface drainage on the hill and along the bedding plane in the direction of the mine. The bottom of Y30 was found to contain a small intermittent stream draining southward along the strike of the bedding plane.

A number of vertical drainage caves evidently carry large quantities of water in times of rain. In rain periods, Downpipe Cave accepts surface spillage water from several entrances in the rillenkaren pinnacles and transports water along short stream passages bedded with rounded river gravels. Solution tubes and waterfalls drop some 30m to a doline on a lower level surrounded by as yet undocumented caves and very close to the Bat Cave. In the Pinnacles area I found two downpipes containing vertical passage perfectly smoothed by downpouring water. The entrance to one of these caves starts high in the Pinnacles area and boasts a fine display of cave coral. The coral is unusually formed because of the competing influences of precipitation by strong upward airflows from the lower tube and dissolution of the coral by the capture of rainwater at the cave entrance. Both these down pipes required SRT for further investigation.

On the western cliff side, caves dip down into the hill towards the east. Their entrances have formed along the terraces that run south along the Yessabah Hill. Y27, 26, 25 with a descending trend to the exposed entrances. Terraces above and below show the same laminar layout and it appears that in general while the caves formed on each terrace are very interconnected, the interplay between their upstairs and downstairs neighbours is sparse. Downpipe caves seem to perform this during high run off periods only.

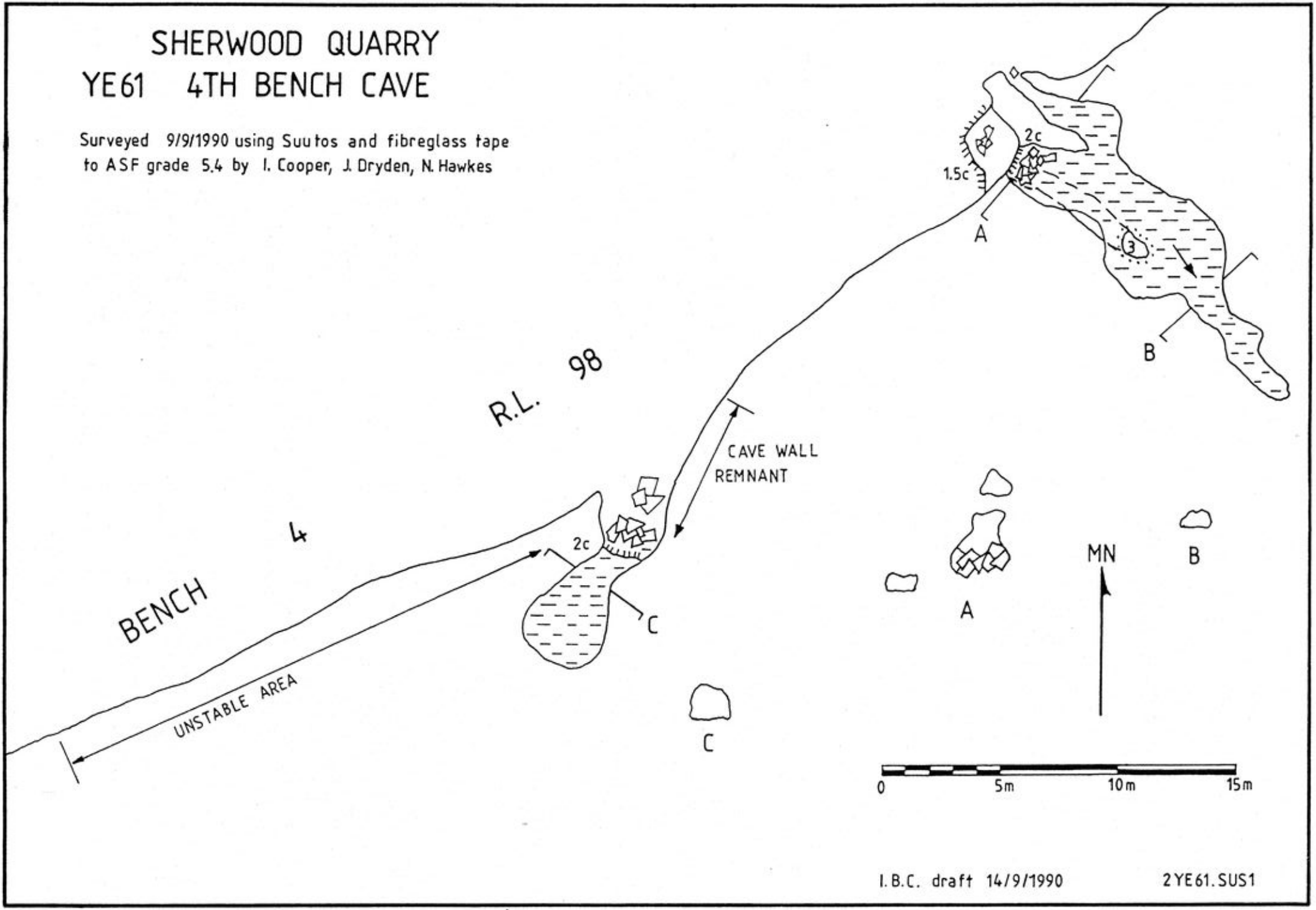
In addition to the obvious connections, examination of our surveys reveals a close proximity of False Floor Cave and Daylight Cave and also a strong possibility of connection between Downpipe and Bat Cave. One of the down pipe caves is highly likely to connect with Daylight Cave but the other is likely to drain west.

A creek bed runs south to north on the western side of Yessabah Hill . Beneath the drainpipes and Pinnacles, the western drainage is evidenced by a spring and boggy ground at the bottom of this escarpment. Many years ago a water collection lake was dug near this location and locals report that the collection lake filled as soon as it was dug, and that it has always been full. The lake expels a considerable water flow into the ponds that abut the weighstation office of the mine. Immediately above the lake is one of the more significant caves, False Floor cave and below its entrance there is a rockpile easily capable of harbouring more cavities.

Drainage can also be observed a kilometre to the south with two effluxes of considerable water volume draining into Dungay Creek. One of these springs emerges beneath the roots of a tree growing out of a doline in a limestone outcrop. The boggy plateau above Dungay Creek level is fed by springs. Southern water drainage is perhaps also indicated by the attributes of the southern most cave Y50 (Water Cave). Water Cave is home to a number of bats and has a copious bat guano collected on the floor and walls. The Water Cave entrance is approximately 4m across, with a short phreatic tunnel disappearing into rock collapse to the right of the entrance. Here the evidence of terraces melds with the ground since the sharp relief of the hill is here, nearly gone. There are cracks, solution tubes and small caverns on the limestone outcrop either side of Water Cave, but there is no obvious way of gaining access to more caves in the immediate area.

SHERWOOD QUARRY
YE61 4TH BENCH CAVE

Surveyed 9/9/1990 using Suutos and fibreglass tape
to ASF grade 5.4 by I. Cooper, J. Dryden, N. Hawkes

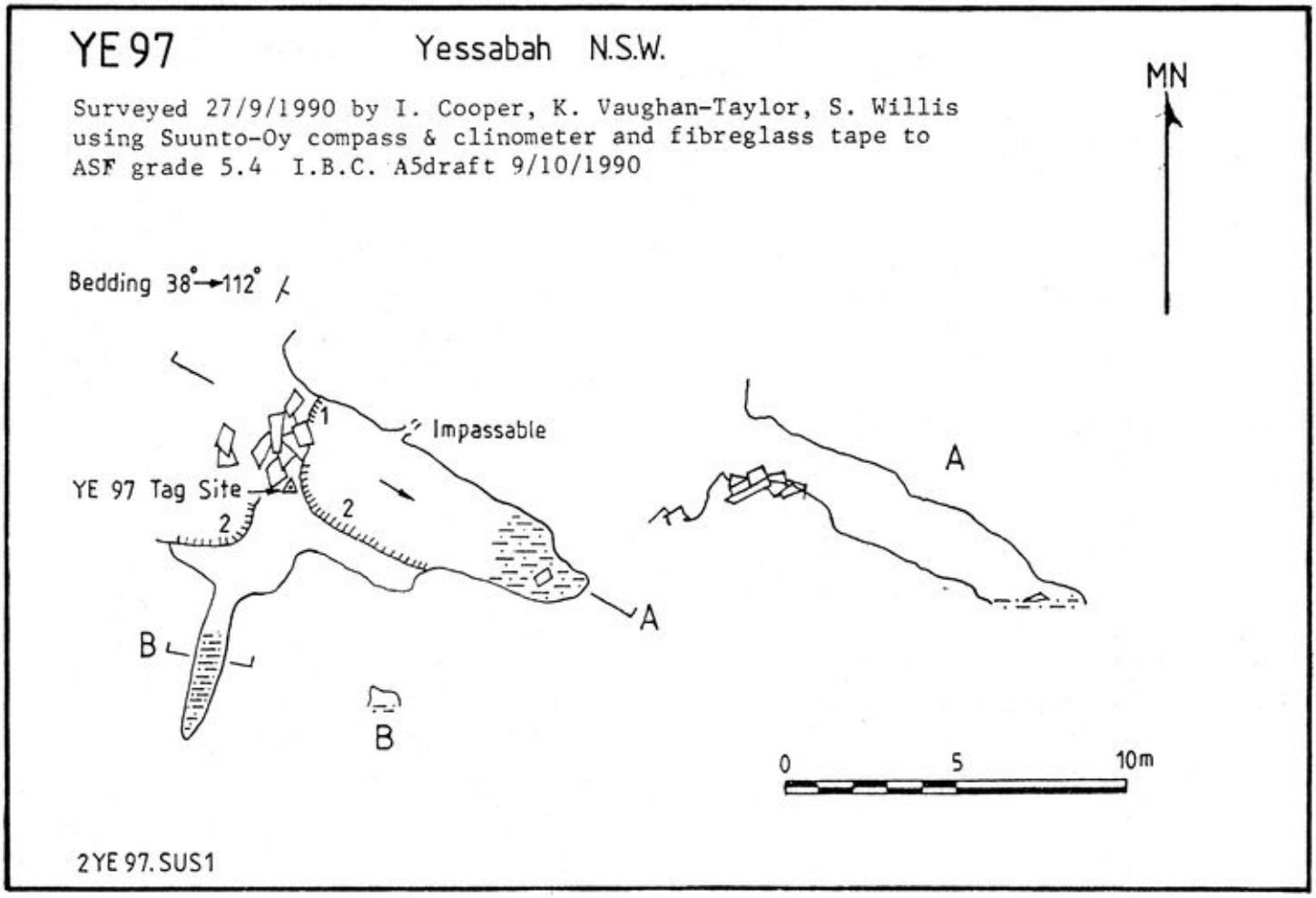


I.B.C. draft 14/9/1990 2YE61.SUS1

The main entrance to Water Cave rapidly descends to a short squeeze, after which descent continues along a keyhole passage finally to a small lake. The keyhole passage has a slot in the floor and the roof is scalloped. It is the only cave at Yessabah so far found that contains a sump. I dived this sump using cave diving equipment and found that it descends to 6m where a 4m long passage on the right hand side dips to a maximum depth of 8m into an unnegotiable silt filled passage. The walls of the passage under the water are caked and ribbed with formations similar to limestone formations of flowstone and stalactites, however they are made of bat guano and decompose when touched. The passage continues but is unnegotiable by a diver.

The most striking area at Yessabah is the pinnacle karst and it is sobering to see the towering pinnacles of grey scarred by mining action and partly lost forever in empty box canyons. One minor cave descends 40 meters just inside the wall of the one of the mine benches. The internal wall of this cave on the side of the mine is cracked and and fractured with a main passage that drops to join the main Daylight Cave. In one place a newly exposed entrance stands as a balcony to a 15 meter drop to a mining bench. In the distant field, cedar might once have grown but now their mighty forms are only ghosts, it is all dead and gone.

Keir Vaughan-Taylor



A connection between Little Canyon and Diggins Diggins: a longer Serpentine Cave.

Easter 1991

Introduction

SUSS Bull 31(1) arrived in my hands hot from the printer, just before Easter and the ensuing trip to Jenolan Caves. Inside were numerous entertaining articles, with reports of exciting new discoveries in caves of the Serpentine area at Jenolan. Chris Norton discussed some new digging prospects in Diggins Diggins, and the finding of a new chamber at the end of the Nibicon Dig in Serpentine Cave. Mark Staraj described Pat Larkin picking himself out of Right Nostril Cave and so attach it to Diggins Diggins, and also speculated on the possible connection of Diggins Diggins to Little Canyon. It appeared we were going to spend a far bit of religious holiday underneath Serpentine Bluff with a spade, looking for the devil or at least the Woolly Rhinoceros. I being a cave-map-junky, had to compile whatever I could find on the area to see what was possible.

Off I headed to the bookcase to look at the Jenolan blue book. It was apparent from cutting and taping cave maps of Serpentine and Little Canyon, the silhouette in Welch(1976, p79) is wrong (*cf.* Larkin 1988). The silhouette also shows Diggins Diggins Cave appearing to underlie Little Canyon Cave. Could the caves be so close, or was the silhouette wrong again. The text does however mention that water flows out of Right Nostril Cave in severe flood! (Welch 1976, p77). This piece of information really got me thinking. Most of Serpentine, Little Canyon and Diggins Diggins would be filled with floodwater. The narrow and normally dry streambeds of these caves would be unable to cope with the floodwaters, so that the water backs up to the lowest outflow, the Right Nostril. Unfortunately, there are no elevations or long sections of the caves to determine the peak flood height, and the only indication is the reported cave depths. Off I headed to Jenolan with the surveying gear to do some levelling.

The beautiful weather on Good Friday tempted a few of us to go for a stroll up McKeowns valley to Watersend Cave and the stream sink. The cave was dry and not particularly inspiring as it lacks any gravel beds which would indicate active stream flow during flood, nor is it very big. It is however the only cave in North Wiburds Bluff and the closest cave to the Underground River north of Mammoth. The Jenolan River was sinking some 100m upstream, a complete change from previous wet years when it has flowed through the Devils Coach House at times.

Serpentine Bluff

Most of us spent Easter Saturday looking, crawling and digging in Serpentine Bluff. A few of us tried to repeat Pat's connection of Diggins Diggins to Right Nostril, although I was unable to get through the final squeeze. This ended up being fortuitous, as John Runcie who made it through to then look at Left Nostril Cave (J36), was able to make a voice connection with me still in Diggins Diggins, through an apparently well-choked rockpile. Afterwards, a surface traverse of the Serpentine Bluff caves was undertaken with Johnathon Shorrock from Auckland SG.

More cavers with shovels, hammer and survey gear converged on Serpentine Bluff on Easter Sunday to give it a thorough working over. The constricted passage in Right Nostril was enlarged to allow easier exits, although one should be careful of the unstable rockpile blockage. More time was spent by others at the end of the Nibicon Dig looking for the best place to dig. Catherine Gautier and I commenced a survey of the cave J38/J131, which lies between Diggins Diggins and Little Canyon. This cave has not been previously surveyed, and is described as a small (5m long, 3m deep) cave formed between the cliff face and limestone talus blocks (Welch 1976).

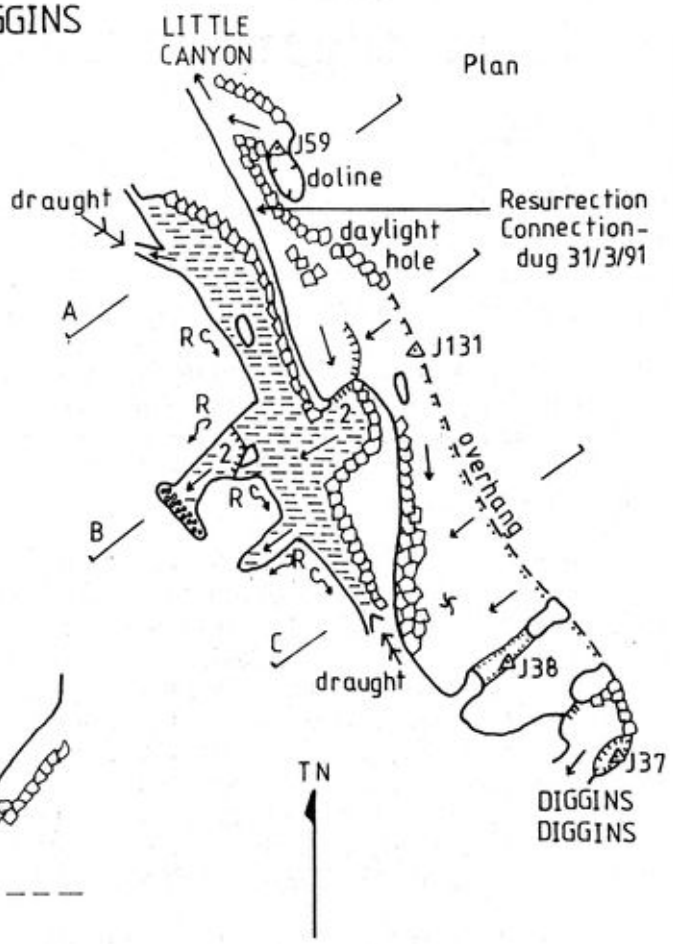
SERPENTINE CAVE

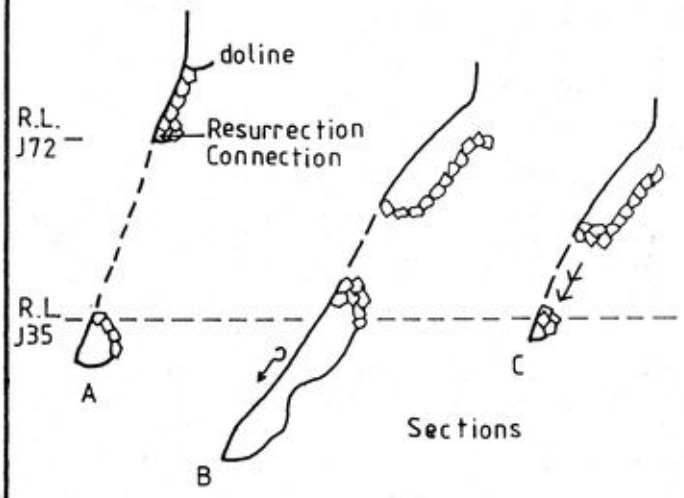
LITTLE CANYON to DIGGINS DIGGINS

J59/J131/J38/J37

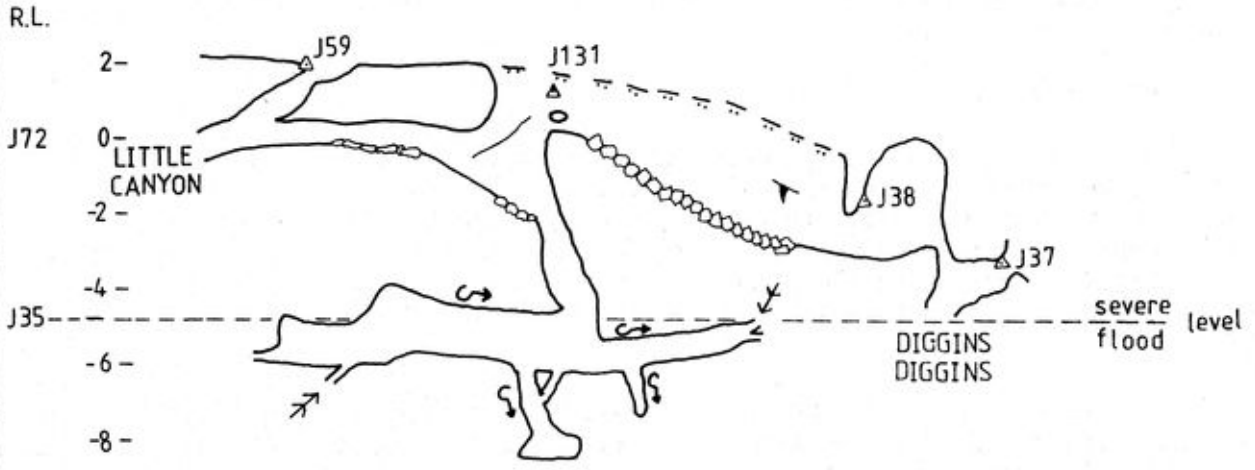
Surface survey, 30/3/91–M. Scott, J. Shorrock. ASF55A survey, 31/3/91 – M.Scott, C. Gautier. Suuntos & fibreglass tape. A4 draft, 8/4/91 – M.Scott.

Length 64m
Depth 10·5m





1:200
0 2 4 6 8 10m



Elevation projected on 328°–148°

Lumen in Tenebris
SUSS
FOUNDED 1948

2J131.SUS1

The J38 entrance is often confused by cavers to be the northern entrance of Diggins Diggins, but is a separate cave in Welch(1976). There is an obvious connection between the two, that is followed by inclined-roofed passage up to J131. Most of this passage has daylight entering from below the cliff face, and it is debatable whether it is cave or not. However, the passage has a well developed overhanging roof (see sections of map) and the passage obviously took water from Little Canyon to Diggins Diggins in the past. Furthermore, Welch(1976) calls J38/J131 a single cave, and it is more constricted than other lesser features at Jenolan which are also called caves. Passage then drops from J131, having the characteristic inclined-roof on all southwestern walls and rockpile to the northeast. There are breezes into the northern and southern ends of the cave, which are probably related to passages in Little Canyon and rockpile near J38 respectively (see map).

After finishing the survey of the lower parts of J131, we focussed our attention on a narrow passage heading towards Little Canyons J59 entrance. I entered J59 and could easily see the narrow NW trending passage of J131. Catherine and I started digging from either side, removing rocks from the rockpile constriction. About five minutes later it was possible to pass between Little Canyon and Diggins Diggins through the Resurrection Connection, named after the day of its discovery. We celebrated with some chocolate, and then got back to finishing the survey to J59. J38/131, the small cave of Welch(1976), turned out to be 64m long between J37 and J59 and 10.5m deep, and the really neat connection between Little Canyon and Diggins Diggins.

We then tried to connect Serpentine Cave with the overlying McKeowns Hole. Patrick Larkin climbed the aven above the long mud slope just past the first squeeze in Serpentine Cave, and thought he could here our stamping on the hollow sounding floor of McKeowns Hole. It is however unlikely that a connection will be made through this aven as its roof is filled with mud. By Easter Monday we had enough of the Serpentine area, and converged on Mammoth Cave, some of us to survey between Lower River and Slug Lake. Cave divers should now know the distance and depth between the sumps in southern Mammoth and northern Spider. Keir Vaughan-Taylor and Sue Willis surveyed between the Diggins Diggins entrance and Right Nostril entrance on the Tuesday after Easter.

Serpentine Cave Nomenclature

The connection between Diggins Diggins Cave and Little Canyon Cave makes the nomenclature for Serpentine Cave even more confused. The new linked cave system is called a single name, Serpentine Cave. This follows the suggestion of Goede(1979), for naming connected caves after the largest cave. Previously named caves become entrances and sections of Serpentine Cave. The so-called lower entrance (J72) of Serpentine Cave is now incorrect as Right Nostril is the lowest entrance, and this entrance should just be called J72, or perhaps the northern entrance. J125 is still the upper entrance to Serpentine Cave. Little Canyon describes passages below the J59, J60 & J61 entrances, Diggins Diggins refers to passages leading from the J37 entrance and Right Nostril is the J35 entrance. No name is given to J38/J131 so as not to confuse the nomenclature any further. Left Nostril Cave (J36) is still a separate cave as there is no bodily connection to Serpentine Cave.

Serpentine Cave Development

The following discussion is best followed by cutting and taping photocopied 1:200 maps of Serpentine, Little Canyon, Diggins Diggins and Right Nostril (Welch 1976) and the accompanying map. (Advertising plug - a Jenolan book can be bought for $7.00 from SUSS). It can be seen we need a new map. The development of Serpentine Cave is due to its capture of the flooding Jenolan River, and the changing position of the streamsink. The oldest passages occur at the highest levels, and subsequent Jenolan River downcutting has formed lower stream sinks and new passages at lower levels. Numerous avens in Serpentine Cave have formed from vadose incision of rainwater from the overlying hillslope and stream capture from McKeowns Hole.

The oldest passage is probably the Upper Serpentine Section and the large inclined-roofed passage from Little Canyon to Diggins Diggins, when water used to sink in the surface rockpile area just below J125. Large scallops on the roof of the passage below J61, J131 & J37 indicate some of the flow went south, although this scalloping may in part be due to more recent flow. The inclined-roof passage can be followed into Diggins Diggins, perhaps sinking into the southernmost dig. The SW inclined-roof of this passage is probably bedding influenced, rather than joint controlled (Welch 1976), and its NW wall has collapsed after becoming exposed to the surface.

Recent capture of the flooding Jenolan River now occurs mostly to the north below the J72 entrance. Larkin(1988) descibes the capture of a significant stream into Serpentine Cave from beneath the large boulder in the first chamber, and a relatively small amount of water entering the J72 entrance. The stream flows into Little Canyon to the Nibicon Dig (Larkin 1988) and the Rambling Rockpile Extension. Water entering the J72 entrance is from its doline capturing surface run-off and/or the Jenolan River breaking its banks. The stream entering beneath the boulder has been suggested by Staraj(1989) to be from the tributary to the north of Serpentine Bluff, or the overflow from another cave. I think the stream in Serpentine is derived from the floodwaters of the Jenolan River sinking in the streambed NE of J72, although this needs to be confirmed. Water flow from the flooding Jenolan River may become blocked or diverted, so that water sometimes does not flow into Serpentine Cave as observed by Staraj(1989).

Capture of the flooding Jenolan River also occurs when it breaks its banks and flows into the doline supplying J37 (Diggins Diggins), and also into Right Nostril and Left Nostril Cave. Floodwaters from J37 could flow south in the phreatic passage, as marked by scalloping on its walls, fall into the tunnel heading east under the rockpile beside the entrance (Norton 1991), or drop into holes beneath the entrance and the phreatic passage, and flow down along the inclined-roof into the underlying NW passage in Diggins Diggins. The slope of the gravel bedded NW trending passage, scalloping on the walls and avens with flood debri, indicate the water flows NW. Water from the Nostrils flows down the climb into Diggins Diggins and either sinks near the southernmost dig, or continues to the NW trending passage.

In severe flood the whole cave system backs up with water, until water starts flowing out of the lowest entrance J35 (Welch 1976). This would submerge the lower passages below J131 and all of Diggins Diggins except the entrance (see map), the Little Canyon and the Lower Serpentine Section. The surface survey has shown that all passages 4.81m beneath the J72 tag would be submerged! Large scallops in the inclined-roofed passage below J61 and J131 indicate the flood waters flow to the south. The backing up of water is not considered to be due to the restricted size of downstream passages (less than body sized), but due to the extreme amount of water in the cave system. I believe there is hope for digging our way downstream to the Underground River.

In Search of the Woolly Rhinoceros

I maintain that the only way we are going to find more Underground River is to dig a streamsink for a flood overflow of the Jenolan River. Upstream of the tourist caves, the Underground River has only been found in two flood overflow caves, Mammoth Cave and Spider Cave. Fortuitously, passages can be followed in Mammoth Cave from the surface down to Lower River. However, in Spider Cave, three squeezes had to be dug and then a rockpile descended to reach the Underground River. Both of these caves have entrances adjacent to sinking points of the flooding Jenolan River. The Underground River is some 50m deeper than the entrances to these caves.

Sepentine Cave is the next best streamsink of the Jenolan River to find the Underground River. It has streamsinks outside its entrances and flood overflow of the Jenolan River. Floodwaters flow to the Nibicon Dig, and into Diggins Diggins in the NW trending passage, the tunnel heading east under the rockpile beside the J37 entrance and the southernmost dig. The latter in Diggins Diggins is well choked with mud, and after the Easter trip has been written off. The tunnel under the J37 has a breeze but a difficult digging location (Norton 1991). The

Nibicon Dig and the NW trending passage in Diggins Diggins have gravel stream beds and a draught suggestive of more passage to be found. These locations are only some 10m below the streamsink, so there is at least another 40m depth until the Underground River. It is time for SUSS to start another major digging project like that which discovered the enormity of Spider Cave. Diggers, look forward to numerous really sporty squeezes, like Pirates Delight before it got easy, and then hundreds or thousands of metres of underground river with cascading waterfalls and long icy cold pools. The Woolly Rhinoceros, here we come!

Conclusions

Surveying of cave between J37 and J59 via J38 and J131 and opening of a rockpile called the Resurrection Connection, has connected Little Canyon to Diggins Diggins. Passages of J38/J131 are longer and deeper than previously imagined. The through-trip from the J72 entrance to the Right Nostril entrance of Serpentine Cave is now longer, although at the time of writing no one has done it. The missing of the connection between Diggins Diggins and Little Canyon by Welch(1976), suggests there is much more to find, possibly in caves with little or no description or maps. The compilation of maps and information before going caving in an area proved to be productive.

Serpentine Cave has nine entrances - J72/125/61/60/59/131/38/37/35. There are also numerous daylight holes, aswell as another possible entrance found by John Hinwood (Welch 1976, p78). A voice connection exists between Left Nostril Cave (J36) and rockpile in Serpentine Cave above the climb from Diggins Diggins.

Serpentine Cave is in the order of 400m long and 20m deep. A new survey and map (on a single sheet) of Serpentine Cave needs to be done, which SUSS has already commenced. A number of passages are not shown on the old map, such as the linkage of the Upper Serpentine Section to the passage with the 10m aven (Larkin P. *pers. comm*), and passages above the 5m pit are apparently poorly described. A vertical section of Serpentine Cave is essential. A major failing of the Jenolan book is the lack of vertical sections, giving only a two-dimensional view of the caves.

Cave and surface survey data will be published with the completed Serpentine Cave map. Loop closure errors between J59/131/38/37 were between 1 & 3% of loop lengths. The surface traverse revealed that the scale of J81 which is shown as 1:200 in Welch(1976, p89) should be 1:100 as in the appendix (Welch 1976, p129).

Martin Scott

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THE SOUTHERN LIMESTONE: A BOTTOMLESS PARADOX

1. Introduction

Troy Magennis of Blue Mts Speleological Society has for some time been in the process of collating material for a forthcoming publication on the Southern Limestone area of Jenolan. While looking through the library one day I came across some relevant maps. Troy indicated that he did not have a copy of one and that the reproduction of the other was not so good. So I decided I would dress them up a bit and get them reprinted.

The Southern Limestone has long been regarded as somewhat of an ugly duckling at Jenolan. Three kms of limestone bluffs, numerous significant dolines, some of the largest chambers at Jenolan, and drainage that has at least twice lapped the lower floor of Caves House in flood - and yet it yields nothing like its promise. None have yet caught a glimpse of the fabled Southern Limestone Master Cave. The best chance to date had been the upstream push by SUSS divers in the Barralong section of the Show caves.

The two maps reproduced here are of probably the two most significant caves to be found from the valley proper - **Bottomless Pit** and **Paradox Cave**. Unfortunately I do not know what the paradox in **Paradox Cave** is supposed to be but I can say that the **Bottomless Pit** has a bottom! Make of it what you will. I have also reproduced some extracts from the SUSS bull that have some bearing on the surveys.

2. Bottomless Pit (SUSS Bull. 13(3) pp29-30: July 1973)

By L.G.Muenzenrieder from "Jenolan Southern Limestone", Trip Report for 26-27th May 1973.

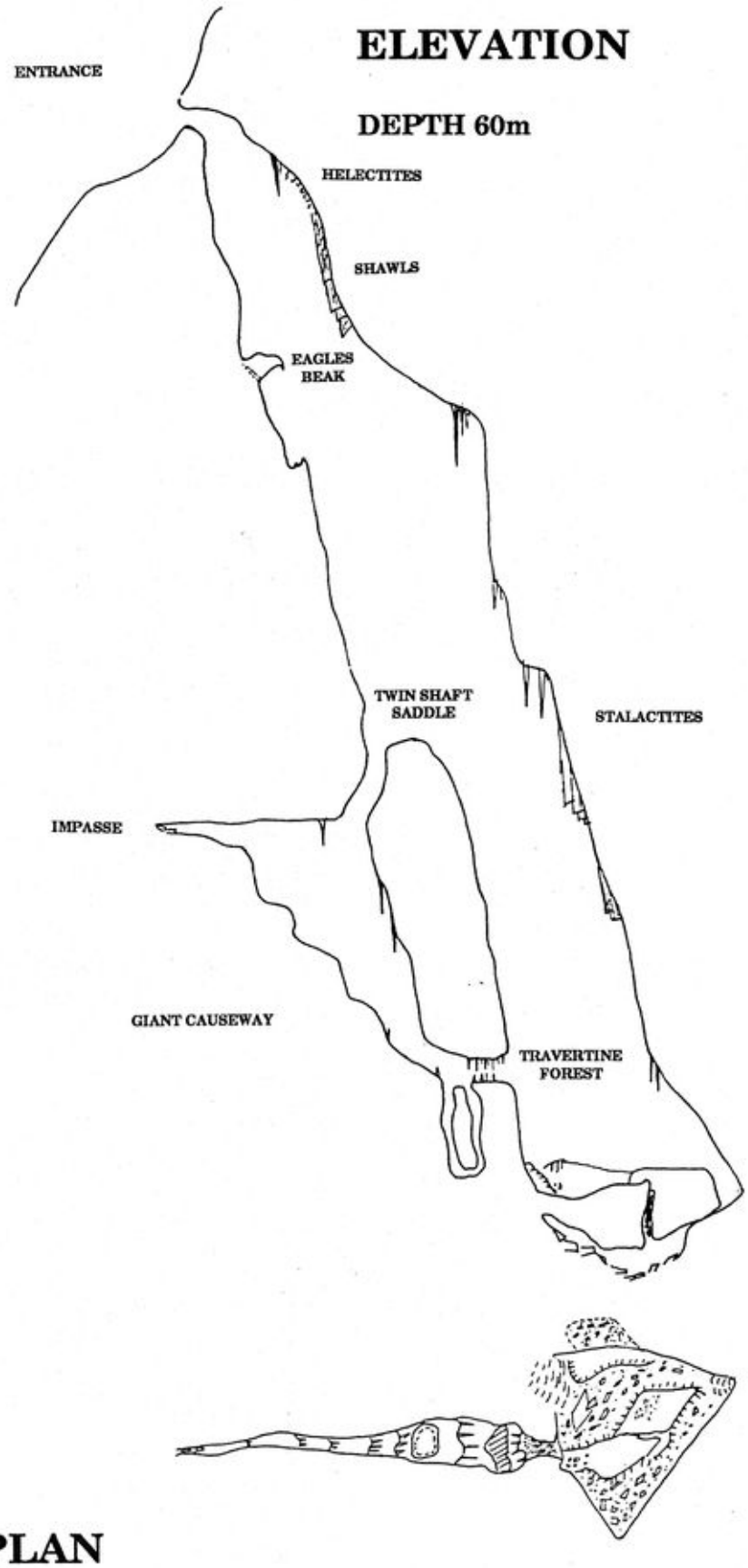
"The entrance lies at the foot of a limestone cliff about (? - Ed.) metres above the floor of the valley on its western side. The entrance has developed either in a joint which bears 1.5° North, or in a fault ...

...The walls from top to bottom are heavily decorated with travertine ranging from large shawls, flowstones, stalactites and stalagmites to columns and some helictites. The upper walls also contained a considerable quantity of gypsum sometimes upto 3cm thick.

The bottom of the cave is also marked by the considerable amount of breccia that has fallen from the roof and walls ...No sign of any rounding was observed which might have indicated the presence of a stream bed. If there ever was one then it must be buried well below the breccia.

Summing up, it can be said that this cave had essentially a solution origin caused by water penetrating either a joint or a fault and subsequently aided by further solution and sliding and slumping down the dip slope. ..."

J23 BOTTOMLESS PIT
SOUTHERN LIMESTONE, JENOLAN



ASF 2J23SUS1

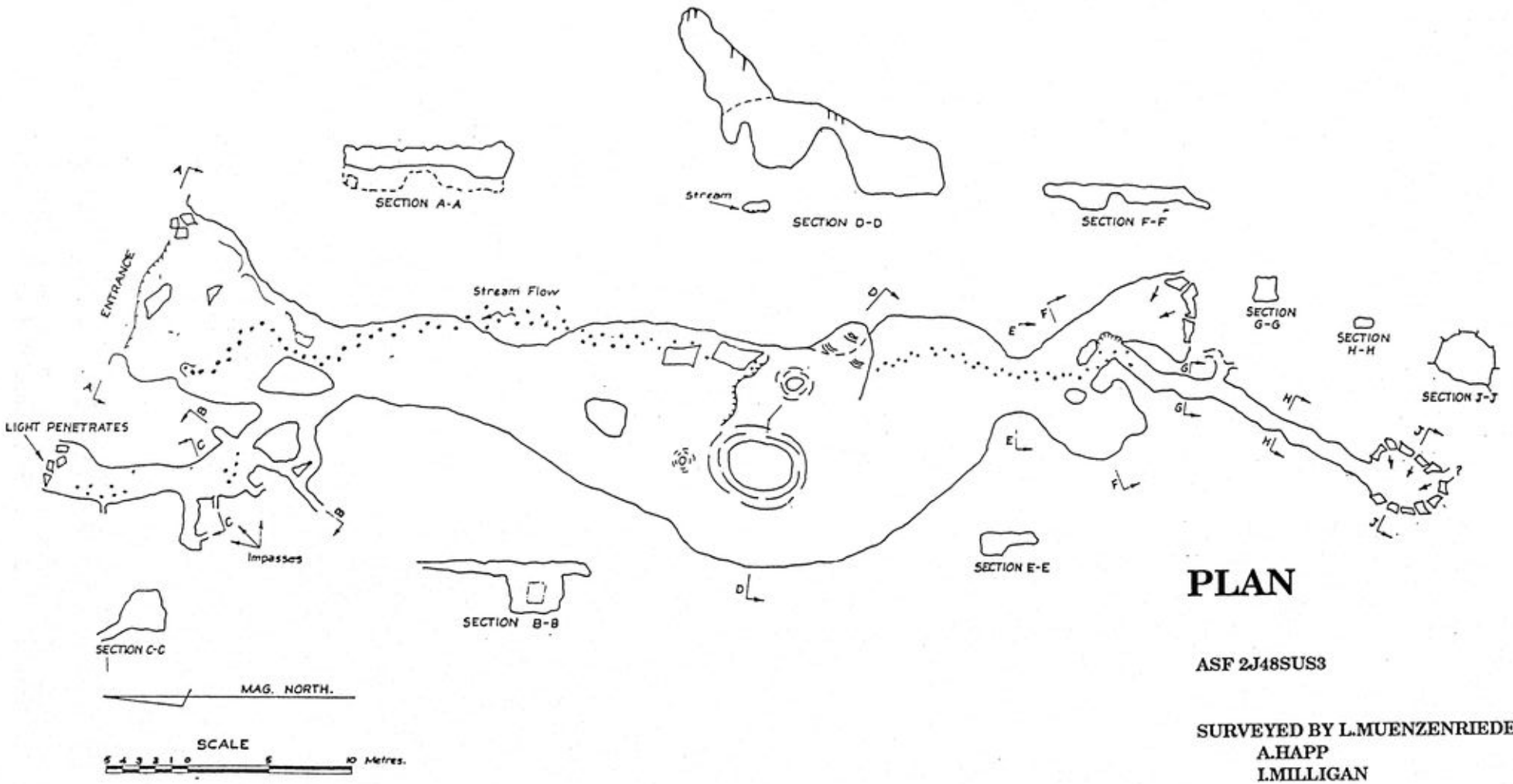
SURVEYED BY L.MUENZENRIEDER
A.HAPP
J.TURNER

DRAWN BY
L.G.MUENZENRIEDER

SUUNTO KB14 COMPASS
AND TAPE [STEEL]

DATE: 26/5/1973

0 5 10 METRES



J48 PARADOX CAVE
SOUTHERN LIMESTONE, JENOLAN

PLAN

ASF 2J48SUS3

SURVEYED BY L.MUENZENRIEDER
A.HAPP
I.MILLIGAN

DRAWN BY A.J.H.

SUUNTO KB14 COMPASS AND TAPE

DATE: 7/8/1972

SUSS Bull. 31(2):24

3. **Paradox Cave** (SUSS Bull. 11(2) p27: June 1971)

By Ludwig Muenzenrieder from "Jenolan All Over", Trip Report for 8-9th May, 1971.

"Denis (Ward - Ed.) directed us to a cave ha had visited with Barbara Dew and Henry Shannon in 1964. This cave has a fairly wide entrance with a stream, about 0.1 cusecs, effluxing from it. There is an entrance chamber about 8' high by 20' wide. The cave goes in a sthn direction into a small hill of limestone and about 50' in there is a large chamber with in some places a low roof. This contained in excess of 200 bats most of which were Miniopterus schreibersii. One peculiar phenomena was the way in which these bats hung from the roof in clusters of 7 to 8 (viz: 'bulb-like'). From this chamber the cave continues along the stream in a southerly direction, the passage in most places being about 2-3' wide and 2-4' high. The floor of the stream is characterised by a gravel. Denis noted that the level of a small lake to the left of the entrance chamber was considerably down over the 1964 trip. If this is so then the part o the cave which we visited would have been inaccessible owing to the high water level. The roof of this cave shows extensive solution along bedding planes. There is some evidence of joint control. From the chamber containing the bats the cave was pushed upstream for another 50' where on the eastern side there is a large flowstone formation coming down from a chamber about 30' high. The stream passage continues south and requires further investigation (?? - Ed).

A look at the surface revealed a limestone mass of 300x400x100', the 400' length running norh-south - the contact was 400' south of the entrance. It becomes clear that this cave cannot be extensive, that isless than 400' south unless the beds are dipping.

The limestone lens runs 5° E of N. On the eastern side of the limestone a small cave was investigated but was not extensive being only 10' deep and ending in a choke of rock and clay. This was probably an old influx or efflux."

4.Southern Limestone

If any one reading this has any information whatsoever regarding the caves of the Southern Limestone that has not been published then please submit it. The history and cave map and description side of the project is apparently now nearing completion.

Mark Staraj.

CHOMP CAVE REVISITED

PRESENT: Mark Staraj (T.L.), Patrick Larkin, Jessica Leech, Alan Hall, Douglas Jenkins, Geoffrey Field, Kevin Costa, Danielle Gemenis, Phillipa Baker, Alison **FENTON** .
DATE: 18-19th August, 1990.

Yes, it was flooding at Jenolan again. But there was not all that much water flowing in McKeowns Creek. Just enough for "experienced" caving boot wearers (Supaglugs) to be amused by those wearing sandshoes. Wet sandshoes that is.

Objective of the day was to show our novices the tourist sites of **Mammoth Cave** - while I did a bit of work on my new lead. This lead is the stream passage Ian Cooper and I managed to find in **the Rockpile** (Staraj, 1991). As usual now in a flood I went to check on the flow into **Bow Cave** - a trickle. Likewise a trickle flowed out of the base of **the Rockpile**. That under varying flow conditions the stream emerges from widely different heights with it pouring from the top in very high flow seems to indicate that the stream passage is probably a vadose rift a few metres tall.

Alison stayed to help with the lead while the others set out for **Lower River**. Alison got down to hard work with her hands and a rock or two at digging out the dirt and bedrock constriction that was last time a sump. While she toiled diligently for half an hour I looked in vain for another route. Of course it wasnt long before the others returned as the trickle had caused a low part of the passage to become a sump. Pat called for assistance to lead the group back out through **the Rockpile**. I now knew why Pat had had an unhealthy liking for making people either climb the **Forty Foot** or do the **Mammoth Squeeze**. He didnt know the way!!

While I let them struggle with the way out I replaced Alison and concentrated on dislodging a largish rock from the floor using the only hand I could get in. A sort of game it was and it kept me amused for a while. After succeeding we headed off to rejoin the others in the **Railway Tunnel**. From here we did the fun little **Hell Hole-Ice Pick Lake** round trip. Everyone had a good day.

That night most of us annoyed Pat greatly by playing a rowdy and entertaining game of Hearts (also known as Black Maid). Pat of course wanted to sleep and after a few stern looks and words retreated behind a closed door. No problem. Very quickly Kevin and I became sole rivals for the winner. Jessica did her best every hand to sabotage me by dumping me with the Black Maid. I soon earned her undying hatred when she kept finding it in tricks she was forced to win. Three times Kevin sought to win all the points in an effort to go negative and each time proved unstoppable but was caught by the two cards left over from the deal - man what a loser! It was a pretty loud night!

(A quick primer for those who dont know the game Hearts - tricks are played and won, every heart won in tricks is one point, the queen of spades is 13 pts - winner is person at end of night with the **least** points, if you win all pts for a hand you **subtract** them. Now you too can play!!)

Sunday - back to the action with Blue Mts. Speleological Society in the Southern Limestone. Today was going to be something gung ho - the bottoming of **Chomp Cave**! This cave had not been pushed since its discovery by Rolf Adams on a SUSS trip in May 1984. Exporation had been abandoned at the top of a 6m pitch. In the unmistakable words of Rolf: "When finally the 6 metre drop was reached, Paul was able to convince his partner of lesser wisdom that descending in this rockpile

very much resembled suicide. Rolf immediately accepted his view and the two exited Chomp Cave as rocks clattered about their ears into the rift." The cave was famous for its "incessant overall biting" and so its "overall eating tendencies earned it the name "Chomp Cave"".

Looking down into the murky depths of the entrance rift it looked pretty grim indeed. In fact the only thing to recommend it was a wonderful warm breeze blowing out of it - it was quite cold standing in the shade.

Pat had the gear, set the ropes and was all ready to go - if somewhat relunctantly. As Pat ventured in, glowing brightly in that hated PVC oversuit I advised the audience that this is what we had all come for - the Patrick Larkin PVC suit vs. the unbeaten Chomp Cave. I was keen on a Jenolan victory - I cant count the number of times I've been soaked to the skin by unavoidable puddles to have Pat smirking and gloating "My suit is really great you know. I'm comfortable, warm and dry as a bone." Smugly I thought to myself - Chomp's going to make that suit look like sauerkraut. Chompetti. With every scrape and curse, every sound of tormented fabric a cheer would go up from the crowd "go Chomp!"

On the caving side Pat soon called for use of a ladder and tried to con someone else in as backup. Naturally he asked for me. I again looked down - that wasnt Chomp Cave - it was Swallow Cave!! Getting out of there was going to be a desperate business. But I wasnt intelligent for nothing.

"Troy", I said."This is a joint SUSS and BMSC trip isnt it?"
"Yes (?)".
"And this is a joint exploration trip isnt it?"
"Yes (??)".
"So as a representative of BMSC and project leader for the Southern Limestone - isnt it your turn?"
"Ah (!)". Got him! So in went the gullible Troy.

Pat had climbed down the ladder into a rift that tapered too small. Convinced that his description did not sound like the lead abandoned by Rolf I cajoled him into looking further. A bit more work along the rift and Pat spotted the lead! A 6m pitch into a room. Pat then excelled himself by finding a narrow way in without need for a ladder. Troy moved further in to follow and relunctantly I occupied the top part of the rift. Pat searched the chamber but to no avail - some holes too small to enter in the floor showed a possibility of further cave.

So that was it. Pat made his painful exit from the cave. What? Where were the rips? A frantic inspection turned up two small rips. Not the stuff of food processors but it gave a small measure of satisfaction - it was mortal after all. Chomp had left its mark.

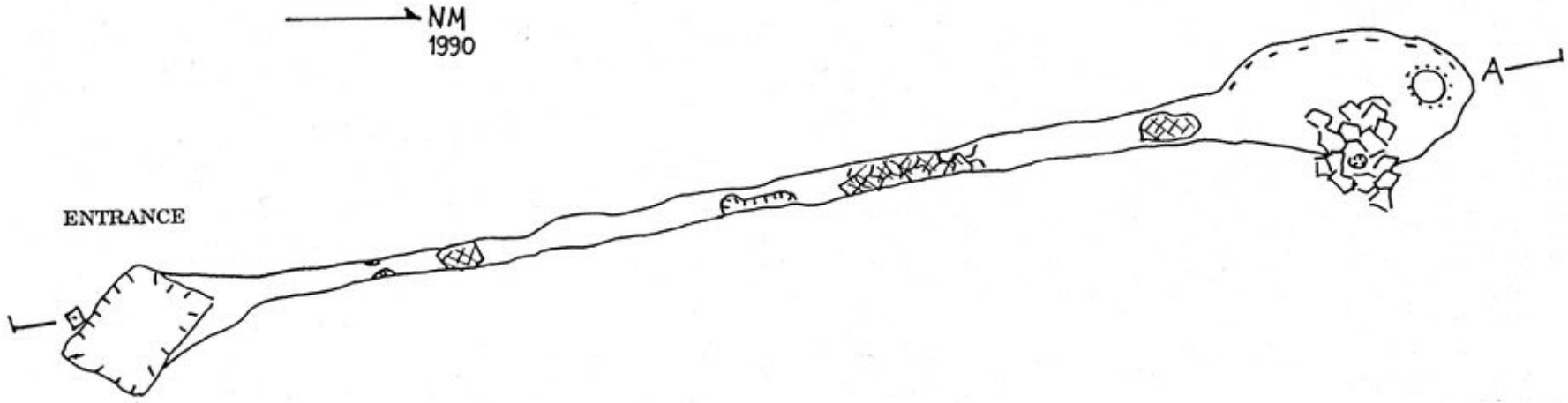
See map for a rough survey of Chomp Cave, courtesy of BMSC and Troy Magennis.

Acknowledgements: thanks to Troy Magennis for letting me use his map and arranging an enjoyable joint trip.

Mark Staraj.

ADAMS, ROLF 1984: "Jenolan: Southern Limestone Non-Trip", SUSS Bull. 24(3)
STARAJ, MARK 1991: "The 1990 Jenolan Submergence", SUSS Bull. 31(2)

J281 CHOMP CAVE
SOUTHERN LIMESTONE, JENOLAN



BMSC MAP NO. 1090J281LS+P

SURVEYED 20/10/90 BY K.C. & D.N.

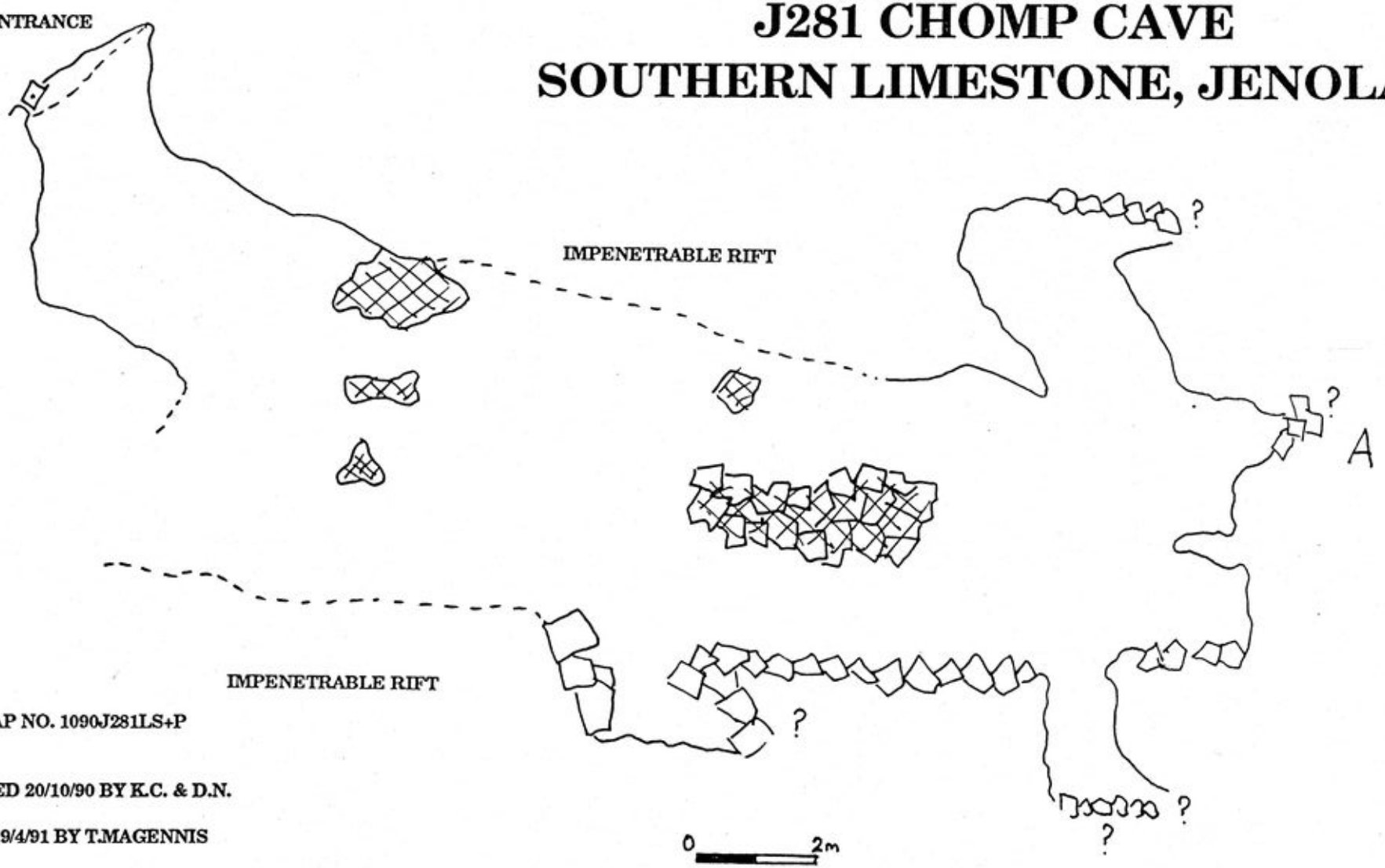
DRAWN 19/4/91 BY T.MAGENNIS

SCALE 1:100

ASF GRADE 2

PLAN

J281 CHOMP CAVE
SOUTHERN LIMESTONE, JENOLAN



BMSC MAP NO. 1090J281LS+P

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SCALE 1:100

ASF GRADE 2

ELEVATION

SUSS: 1990 SPORTS UNION CLUB OF THE YEAR

re: Sports Union Club Annual Report 20th September 1990

The following is a summary of the activities of SUSS during 1990.

MEMBERSHIP

There was another successful drive for new members this year centred as usual on our stall at Orientation Week. As usual we featured our abseiling and prussiking display from the top of the Bookstack but with the advent of one new rope skills diplay: the demonstration of a Tyrolian Traverse from the tree at the bottom (this Traverse enables a person to cross over on rope set up horizontally - used to cross large pits to reach the other side). Also there was of course the infamous milk crate squeeze and a fine display of cave photography in laminated large format - most of which had been taken by SUSS members, of caves all around the world.

As a result there were about 50 new members signed up. Total membership is about 100. Including all our exchange memberships with clubs around the world this is about 150.

EXPLORATION AND MAPPING

The biggest event by far was the expedition to two of the principle karstfields of New Zealand - both of which offer the potential of a world class 1000m+ deep cave.

The first area visited was in conjunction with NZ cavers to the remote, spectacular and nearly inaccessable Mt. Bell. Some kms away in the same karstfield is the Southern Hemisphere's second deepest cave - **Bulmer Cavern.** Access was via helicopter and the group stayed there 10 days. The area consisted of many gaping shafts but the majority reached no more than 30m deep before being choked by frost shattered rock. One of the caves explored was the "rediscovered" cave called **Scream.** This had been found previously by the NZ cavers but only explored to the vicinity of the first pitch. SUSS subsequently pushed this down two further pitches including one of 53m, to a depth over 100m - a modest success. SUSS also managed to discover another cave which did not pass the 100m mark but did contain copious quantities of snow and ice - it was named **Shout** (see maps).

The second area visited the famous Mt. Arthur karstfield - home of **Nettlebed Cave** - the deepest in the Southern Hemisphere at -889m deep. The object was the pushing of **Falcon Cave** which had been discovered and partially explored by another expedition in 1987 by NZ cavers and a couple of SUSS members. Exploration had reached a depth of -471m where the river dissappeared down an inpenetrable slot. SUSS managed to bypass this obstruction with the discovery of a 400m passage - Peregrine Rift - which finally ended in a sump at a new depth of **-497m.** It increased the total length of the cave to 1350m. A great success. A complete survey of the cave was made (see map).

This effort was followed by the exhilaration of exploring one of the most significant caves in the area - **Exhale Air.** It had been found by a NZ caver who had been invited to join the expedition while waiting for the SUSS expedition members to arrive. It is a large cave consisting of a series of vertical shafts intersecting an extensive set of large phreatic passages - with lots of stunning cave formations. Time ran out before the cave did with a depth of -340m being reached. The NZ cavers have been back to it since and pushed it to -480m. The important feature is that it contains a very large river making this cave the "main drain" and therefore the best prospect yet of reaching the Pearse Resurgence and therefore entering the elite 1000m+ deep club of which there are just 37 members world wide. SUSS plans to go back shortly with that aim.

Back in Australia SUSS has not been idle neither with trips to Colong, Bungonia, Jenolan, Timor, Yessabah, Wellington, Tuglow and Wyanbene.

At **Yessabah** much work and exploration has been carried out in an effort to preserve it from the depradations of a nearby quarry. So much material has been accumulated that a book may well be published.

Further surveying and research has been carried out at **Tuglow**, which is the subject of an upcoming publication. The main cave has been completely surveyed to give a total of 1940m of cave - definitely the most comprehensive exploration ever carried out in this fantastic streamway cave. At the same time some smaller nearby caves have been surveyed including a SUSS discovery of the '70s and in the process dicovering another cave (see maps).

At **Jenolan** a number of small extensions have been found to existing caves including the bottoming of a very difficult cave - **Chomp Cave.** This cave had such a reputation for its nastiness (the name is not accidental - it munches cavers!) that the very promising lead that was left unexplored for reasons of safety at the time of its discovery by SUSS in 1984 had been avoided by everyone until this year! Meantime serious diving in downstream **Mammoth Cave** and upstream **Spider Cave** (including an underwater dig!!) has been attempted in an effort to join the two caves, thereby holding out the possibility of making the **Jenolan Show Caves** be the first Australian cave to exceed 30km in length. However these dives have yielded little success as yet - difficulties include the force of the Jenolan River, underwater squeezes and the need for decompression (dives are to about 40m depth). Frequent and severe flooding has limited diving opportunities but these spectacular floods have helped to understand the hydrology and made it possible to discover some exciting new leads - even if some of the trips have meant crossing unexpected waterfalls and wading and even swimming flooded chambers (a very cold but exciting activity - your whole perspective changes when you have to swim at a point 4-5m **above** where you normally should be!!).

Diving has also been attempted at **Wellington Caves** - the scene of spectacular diving success for SUSS in 1988. A dive in the main tourist cave - **Cathredal Cave** - has yielded a promising lead that looks likely to repeat the success of 1988. A trip back is planned! Another excellent stream cave was also dived in an attempt to bypass the upstream sump at **Wyanbene**. It is not even known where the water for this underground stream originates and as the cave already contains a very large chamber and the famous 100m high Gunbarrel Aven (a shaft that goes vertically up from the roof of a passage) - expectations are high, but no success was had on this trip.

CONSERVATION

SUSS has yet again been actively involved in the preservation of some of Australia's best scenery and scientific and recreational resources. This has occurred at **Yessabah** in the far north of the state which represents the most southerly example of Tower Karst in Australia - which is an important form of karst found in tropical regions. An agreement is being sought with the mining company.

At **Bungonia** you will find one of the most spectacular gorges to be found anywhere in Australia - and it is truly unique. It is also home to almost all of mainland Australia's deepest caves. Unfortunately a mining company is intent on removing one wall of this incredible gorge (it is almost 300m deep but at most only 100m across!). SUSS organised a high profile protest including a giant placard type banner (where stacks of people hold a piece of cardboard) and organised displays and a petition against the mine which has been and is guilty giant scree slopes of boulders and other mine waste into the gorge and thus fouling the creek at the bottom with sediment. A number of TV networks were there to cover it.

SUSS IN THE NEWS

As mentioned above SUSS received TV coverage for its protest at Bungonia. This included **SBS**, **ABC**, **NINE** and **SEVEN**. The story went to air on the **ABC** and **SBS**.

SUSS also took **NINE's WIDE WORLD OF SPORTS** to make a segment on the sport of canyoning (another SUSS pastime). This was done at the spectacular canyon in the Blue Mts. called **Kanangra Main**. The footage turned out to be a superb visual feast and had the studio commentators in awe. The reporter who had accompanied the video crew down the canyon received severe rope burn on the last pitch when he failed to heed advice and there he sat in the studio with his bandaged hand - and then to the utter amazement of the studio commentators who had just witnessed the footage of his accident he told them he wanted to go canyoning again!

Mark Staraj
SUSS VICE PRESIDENT.

THE 1990 JENOLAN SUBMERGENCE

PRESENT: Mark Staraj (T.L.), Ian Cooper, Jill Rowling (SUSS)
John Bonwick, Tom Hayllar, Elizabeth Hayllar, Alex Boyd,
Jillian Taylor (SSS).
DATE: 4-5th August, 1990.

This was going to big!

It was Thursday and I had just rung the guides office. Besides the rain earlier in the week they had got 100mm overnight and it was still drizzling. The footbridge at the Devils Coachhouse was under to the tune of 1/2 m! Many of the show caves were closed due to flooding.

I've got to be there!

With my wedding approaching I was trying to squeeze in a couple of trips before I was tied up - so to speak. So with no spare weekends and no SUSS trips I contrived to worm my way onto an SSS trip.

On the spur of the moment I threw my camera in and then found the hard way how difficult it is to get decent photos underground. Still they have some scientific value I suppose. But the photos above ground - wow! When we arrived the river level had dropped to 1/2m below the footbridge but was still a raging torrent. It was a beautiful day.

Posing for photos in the Coachhouse was a trick of endurance - it was absolutely freezing in a howling gale (Ian also had his camera). We immediately headed downstream taking snaps of Blue Lake, the Dam (incredible sight), and the waterfall (impressive). Then it was to the otherside of the Coachhouse via the Carlotta Arch (no alternative). Ian set off across the stream to get photos of the waterfall inside because he had the Wellingtons - but they made no difference. It was too high for them.

Finally we reached the cottage. Jill had arrived as part of the SSS contingent and so Ian and I made our own plans - Mammoth Cave of course! Journeying there was an adventure in itself. The Playing Fields crossing was about knee deep, just over 0.7m. The flow was very strong so one had to be very careful of footing. The Playing Fields doline could hardly have been fuller. The next creek crossings were the same. At one could be seen a definite high water mark. I took a photo to line this up on Ian - we're talking upper chest level! Instant death for sure. This certainly was a big one.

For some reason it seemed that the amount of water was considerably more in the vicinity of Mammoth and further upstream. I dont know if it was due to sinks or just the effects of a narrower channel and steeper gradient. Perhaps it was the former as a photo of Ian crossing at Bow Cave shows him hanging grimly onto a rock in midstream - what a show off! But here it was up to thigh level or about 0.9m. A reasonable stream was flowing into Bow Cave - maybe 2 to 4 times a normal Central River - but very little compared to that flowing past. However again the high water mark was impressive, just below the roof of the cave.

Inside Mammoth Cave it was quite wet.

The **Forty Foot** was thundering away with a 30cm deep river from the direction of **Cold Hole**. There was 10cm of water in the **Mammoth Squeeze** (less than I expected at the time) which was enough to discourage me from risking the camera, so we attempted to reach the bottom of the **Forty Foot** via **the Rockpile**. Something easier said than done. As we traversed **the Rockpile** we passed over a very vigorous stream which

unfortunately was occupying the final squeeze - could go no further here. The lucky side to it was that it enabled us to trace the source of the stream, such was its noise. On the far side of a pile of broken rock was a low bedrock passage but it was sumped. A new lead for the next trip.

Our attention then was drawn to the **Railway Tunnel**. The river from **Cold Hole** caused some fun in the low crawl but was not any trouble. Predictably almost all of this came from **Sand Passage** directly but the side stream seen on a previous trip was almost non-existent. The short climb up through the **Cold Hole** was a waterfall plunging into a waist deep pool - like wow! A small stream forked from **Sand Passage** to **Horseshoe Cavern** but mostly sank before it reached it. In the cavern itself there was still 5cm or so of the lake. An obvious high water mark put the former depth of the lake at waist deep - quite a good sized lake.

We then pressed on to see **Central Lake**, specifically the waterfall into **Snakes Gut** seen only twice before. However there was no waterfall and no water below and most surprisingly **Central Lake** could not be seen from here either (frequently in other floods it has been possible to see sumped passage representing the advance of a flooded **Central Lake**). Just where was the water I wanted to know. We headed down the **Snakes Gut** to where it opens up beyond the thin bit. This is where the **Unsurveyed Connection** comes in. The walls here were not yet dry and the scum of recent flooding lined the walls 3-4m up. Despite continued heavy flow in McKeowns creek the flood here was already on the ebb. Also of interest here was a spring in the floor of the passage against the passage wall roughly opposite the **Unsurveyed Connection.** Since it was behind a kink in the passage with respect to the "upstream" end it does not appear to simply be drainage of the recently flooded sediment floor "upstream". We then headed out of the cave.

The SSS contingent were not particularly interested by the flood. I guess when you've been around as long as these "craybacks" there are far more exciting things to be done. Like hauling Bonwick scaling poles into **Alladin Cave** to push a lead remembered from antiquity. That the poles were not needed is really irrelevant. Just to be priveleged to carry one of these hallowed objects - it is enough. It is rumoured that the poles figure strongly in SSS primal rituals. Goodies scooped by SSS was a small decorated chamber at some height above the main chamber.

The evening at the cottage was a nice social affair. The best story was John's about the bottoming of Odyssey Cave at Bungonia. This was probably the only major cave not bagged by SSS in the era of modern exploration there. Credit went to the Baptist Speleos who required SSS to help them explore it. Somewhat incredulous SSS watched this cave unfold to be the deepest on the mainland - much to the obvious chagrin of SSS ("bloody Baptists" - was a popular phrase). Then there was the drama of the rockpile collapsing and trapping them in the cave - a top story.

In the meantime Tom was having an ongoing fight with his pants - I never did figure that one out. Jill then mentioned how try as she might she just cant make herself sink when in the water. What a wonderful tool for the Cave Rescue Group! "Help, help! I've fallen in. I'm drowning!" "No worries - quick throw in a Jill bouyancy device!" It was pointed out that to be truly useful it should be a doughnut shaped Jill Life Saver - perhaps with the aid of a scaling pole? Having then exhausted the uses of an unsinkable Jill Rowling we settled in for the night.

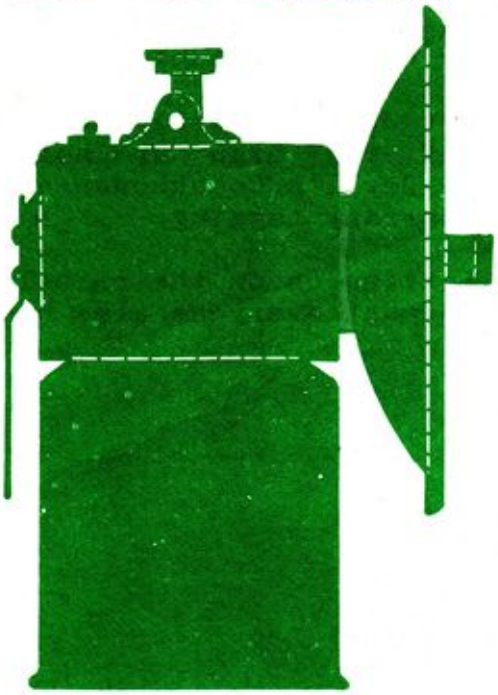
In the morning the day was again grey and rainy. Ian and I shelved his plans to go up towards Wiburds Lake Cave and settled for an early return to Sydney. A few more photos before we left and a sudden heavy downpour to assure us that wimping had been the better part of valour.

In the meantime of the rest of the group just John and Jill took up the option of caving and managed to reach one of the high up holes visible on the east wall just north of the Devil's Coachhouse and found "sufficient dimensions and features" to warrant tagging.

Acknowledgements: thanks to John Bonwick for letting us on their trip - it was fun, and thanks again for info on what everyone else had done.

Mark Staraj.

Lumen in Tenebris



SUSS

BULLETIN
of the
SYDNEY UNIVERSITY
SPELEOLOGICAL SOCIETY

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

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