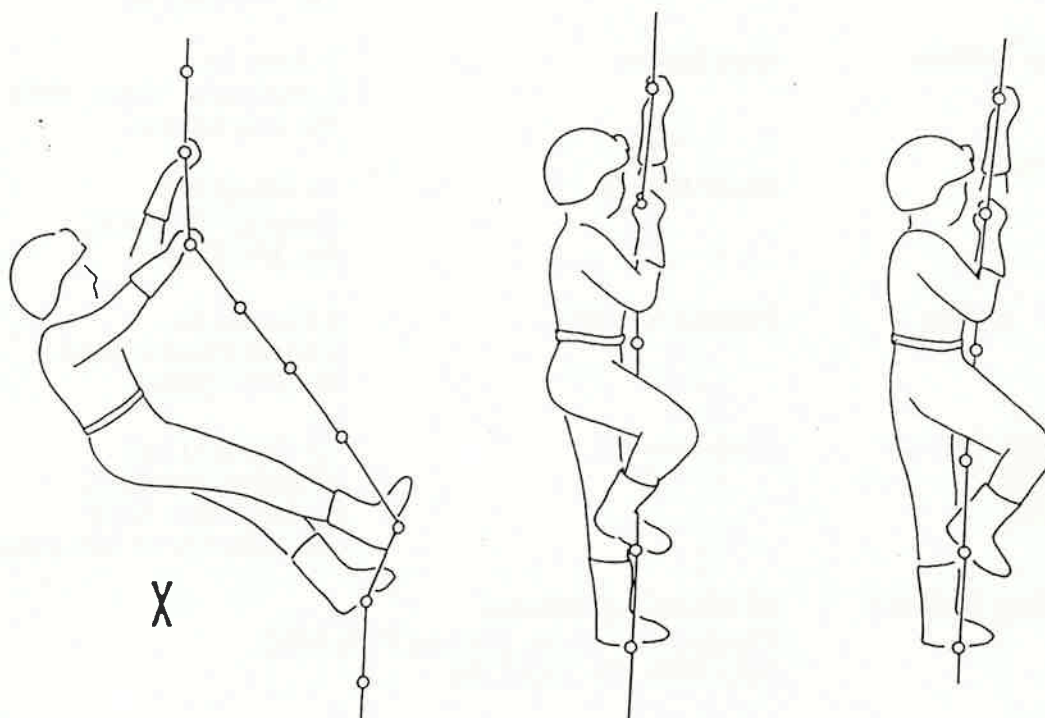


FUSSI

VOL 3 NO 1 MARCH 1991

Ladders and Lifelines



Figs 25 – 7 Ladder climbing: free hanging pitch. (Left) with the hands gripping the ladder rungs from the front, a large amount of the body weight is taken on the arms; (centre) the powerful leg muscles are allowed to take the load by keeping the ladder close in to the chest. Both feet may be in front of the ladder, or (right) one may be put in from the back

THE QUARTERLY NEWSLETTER OF THE FLINDERS UNIVERSITY SPELEOLOGICAL SOCIETY INCORPORATED.

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MARGARET RIVER : PART ONE

Members Present: Clare Buswell, Tania Wilson, Heiko Maurer, Richard Ewart, Jenny Laidlaw, Lee Coshell

The Journey

Although our trip to Western Australia had a rather inauspicious beginning, Tania and I both being ill on the day of our departure, the long journey from Adelaide to Margaret River was surprisingly enjoyable. (Tania, who was feeling a lot worse than I was, might dispute this assertion). On the morning of our departure we set a FUSS record for lateness of departure time. Despite our best intentions, we didn't leave the Laidlaw-Coshell Hilton at Henley Beach until 11.17am. This was after a morning of chronic disorganisation during which Clare was often heard to bemoan the fact that she had entrusted Heiko with the important task of packing her gear. As a consequence of this mistake, Clare suffered from a severe shortage of clean clothes throughout the trip.

After a couple of hours of cleaning, packing, drinking cups of tea and eating breakfast (with quite a bit of help from Peter Wallis), we finally managed to hit the road. We spent the first night in Ceduna and then, after many hours on the road on the second day, we eventually arrived at Balladonia. We amused ourselves along the way by reading good books, indulging in fascinating conversation and listening to music. It should also be noted that Clare took great delight in spotting windmills. We stopped to look at the Great Australian Bight, which on this occasion was much less windy but equally as impressive as the last time I was there, in 1989. At Eucla, we took a detour to Weebubbe, a cave which we reached by taking the Flinders Uni vehicle on a road that wasn't dirt. After scrambling about in Weebubbe for a while, Heiko, Clare and I emerged to discover several people from Highland Caving Group, trying to find their way around the Nullarbor. It was quite strange to unexpectedly discover familiar faces outside of a cave miles from civilisation.

The journey from Eucla to Balladonia was long and straight, and there was a distinct lack of windmills for us to spot. The many dead and mangled kangaroos on the side of the highway reminded us that one of these creatures could leap in front of the car at any moment. Fortunately, we did any kangaroos, but the possibility was quite worrying, particularly at night. We arrived in Balladonia fairly late in the evening and stayed in the caravan park, sleeping soundly despite the noise of a nearby generator.

Our journey across the Nullarbor finished when we arrived in Norseman shortly after the WA border guards took most of our food early the next morning. Although it was a relief to no longer be on that straight road, crossing the Nullarbor was not as boring or monotonous as one might expect, especially with such scintillating company and in a car which had both a stereo and air conditioning. Nevertheless, after replacing our provisions in Norseman, it was good to head south instead of west. We drove down to Esperance, passing through some small towns with strange names, ('Grass Patch'), and noticing some extraordinary trees with bright orange flowers, commonly known as 'Christmas Trees'. We spent a couple of hours in Esperance, a town with great views, impressive beaches and many windmills, and then headed for Fitzgerald National Park where we spent the night. Fitzgerald is an impressive National Park despite the fact that much of it has been burnt out. We found a great little camping spot near the beach which was overshadowed by a burnt-out mountain. Now known to be a stegamite!

As we drove through the National Park the following morning (on a road which definitely wasn't dirt) the views were excellent once again. There was a plethora of Christmas trees even in the burnt out areas. This was probably the best day of the journey because, as we drove through the south-west of WA, we saw some beautiful countryside. The Stirling Ranges were particularly impressive. More importantly, we also drove through Nannup, the birth place of Keven Cocks.

The Conference

We drove into Margaret River late in the afternoon, and, after registering at the conference centre, had a very pleasant reunion with a grubby looking Sackie (who had just spent a few hours caving). Margaret River is a small town, populated mainly by surfies, near some great beaches and surrounded by lush bush. This was a perfect spot for the conference - close to sun, sand, beautiful forests, and, most importantly, excellent caves. We spent six days in Margaret River, staying at the Margaret River Lodge, a very comfortable backpackers' hostel which was close to the conference centre. There were many cavers from all over Australia staying in the hostel and in the nearby caravan park. This provided us with an excellent opportunity to meet and socialise with cavers from all over the country. Consequently, we established friendships with people in many different caving groups and hopefully these contacts will be maintained.

During the week we spent in Margaret River there occurred both an ASF committee meeting, which is described elsewhere, and the conference. The conference was extremely well run and very interesting. The many papers which were presented covered a wide range of interests - cave management, biology, conservation, cave surveying, karst geomorphology - and, as well as being well presented, were illustrated by numerous slides. I was particularly interested in the papers presented by Patrick Larkin and Keir Vaughn-Taylor as each concerned personal involvement in legal battles to conserve caves. However, there was a sufficient variety of papers presented to satisfy the interest of even a casual caver. The only complaint I heard about the conference was that the temperature of the hall in which the papers were presented was many degrees lower than the outside world. Indeed, it was so cold at times that many of those who attended the conference were in danger of freezing their boulders.

The organisers of the conference also provided several enjoyable social events; an icebreaker party of the first

MARGARET RIVER : PART ONE

evening, a New Years Eve party and a caving dinner. The New Years Eve party, which was held at the football club and featured a band playing some old dance faves, was fun but weird in several respects. Many of the speleologists spent the evening as only speleologists could; squeezing through coathangers, fences or any other vaguely 'cave-lie' structure that could be found. Although our President was initially reluctant to squeeze through a palling fence, Clare, Jenny and Lee demonstrated a notable ability to fit through tight squeezes. FUSS was very well represented at this stage; Lee, Jenny, Clare Heiko, Tania and myself, plus one ex-member - Sackie. Fortunately, Mavis was not present at this point. During our journey to Margaret River, Mavis had taken both the Mobil card and Clare's sunglasses. Clare had subsequently persuaded Mavis to retreat from civilisation for a while so that Mavis could contemplate her wicked ways and perhaps adopt a positive new years resolution. Mavis did return the Mobil card shortly after New Years Eve. However, our hopes

for a reformed Mavis have since been diminished somewhat by the fact that Clare is still waiting for Mavis to return her sunglasses.

A highlight of the week was speleo sports. Although no South Australian cavers took part in this fun but mad activity, we had a good time watching the teams make their way through the wet and filthy obstacle course. The sports were held in a beautiful part of the bush several miles from Margaret River. To reach this location we had to take the uni car on a very rough bitumen-like road. Speleo sports can take different forms, but in this case the teams were required to make their way along a creek in as short as possible time, while at the same time demonstrating an ability to get through squeezes (tyres), not touch 'stalactites' (beer cans), perform correct first aid when the leader breaks his or her legs, and then carry the leader through some tyres to the end of the 'cave'. Points were lost if teams did not 'cave' correctly, for example, by not performing correct first aid or by

touching stalactites. This was a mad, filthy activity, but the participants seemed to be having a great time.

The other major social event, the caving dinner, was considerably more formal but equally as enjoyable. The food was good, we drank quite a bit of wine and there was much revelry, including the throwing of paper jets (made from menus). As well as being given an excellent meal, we were shown the winners of the slide competition and various awards were given to members of the caving community. A couple of nights later, after the close of the ASF Committee meeting (which was a relief to all concerned), we celebrated the birthday of one of the organisers of the conference. Again, much alcohol was consumed and a fun time was had by all. Both the conference and the committee meeting being over, we left the town of Margaret River the following day and headed for the nearby caves.

R. Ewart

To Be Continued!

ASF COUNCIL MEETING MORE EXCITING THAN UN SECURITY COUNCIL MEETING.

New years' eve saw members of the ASF get together, report on the years activities, try and sort out a new constitution for the Federation, direct the activities of its various commissions and make some policy for the Federation.

It was great to see all states were represented and so many South Australian representatives present, six Fuss and three Cegsa members.

The first morning was spent dealing with reports from the executive and commissions. The executive, which consists of four vice presidents, secretary and assistant secretary and treasurer have had a busy year restructuring the constitution, writing replies to draft management plans, and keeping an eye on who has gone off with the money or spent it on buying T shirts of bad taste to be worn at ASF council meetings!

The President, Lloyd Robinson, has spent some of the time in 1990 trying to find other sources of funding for the ASF apart from membership fees. It was decided at the meeting that the new executive would spend some of their time in 1991 in approaching organizations such as the Wilderness Society, the ACF and similar like minded organizations to gain some financial support (More on this later). Lloyd also suggested that there be a sunset clause put into the new constitution concerning the length of time office bearers can serve in any one position. Also of importance in his report is a request form ACKMA, (Australasian Cave and Karst Management Association) that the ASF to hold their conferences back to back so that people who have interests in both organizations don't have to select one of the two conferences to attend due to time or financial restraints. There was some discussion on this but no resolution occurred. Pity, as there is an ur-

gent need for managers and spleleos to get together and talk about approaches to the issues of managing caves.

The secretary, Chris Dunne spent 1990 writing replies to Draft management plans for what seems to be most of the country. In particular, the secretary replied to three plans issued in SA on Naracoorte, Piccaninni Ponds and Tantanoola as well as commenting on the draft Public Access Policy in SA. Chris also replied to the draft management plans for Cutta Cutta, Wellington, Kubla Khan and the Tasmanian World Heritage Area Listing.

The treasurer, Brendan Ferrari presented the budget for the 1991 financial year and it isn't large. Total income and expenditure is to be \$5800.00, and the Newsletter will take \$4500.00 of it. The remaining \$1300.00 is to be spent on the Library (300.00), Conservation (300.00), Admin (300.00), Special Projects,

ASF COUNCIL MEETING MORE EXCITING THAN UN SECURITY COUNCIL MEETING.

(200.00) and a couple of subscriptions worth 190.00. The membership fee is to be \$7.50 per person per member organization if paid before the 30th of June or \$13.50 if paid after. In light of the president's suggestion that the Federation seek funding outside of membership subscriptions the newsletter is to seek advertising to help offset some of its costs. The treasurer will gratefully accept any donations or great ideas to raise money. How you run a national organization on five and a half thousand dollars and effectively carry out its mandate amazes me!

Reports from the Commissions

As per usual the Conservation Commission highlighted a number of ongoing struggles to gain some form of protection for some of Australia's caves. Craig Hardy reported the following: Mt Etna that the Central Queensland Speleo Society, (CQSS), has costs awarded against it to the value of \$230,000.00, Craig Hardy and Don Henry of the World Wide Fund for Nature also have costs awarded against them totaling \$340,000.00. It is not yet known if Central Queensland Cement will take action to recover those costs. The Mt Etna caves have now been gazetted as a National Park and this year should see the formation of a management plan for the new Park and its surrounds.

Central Queensland Cement is also mining close to another area of karst known as Fanning River. There could be possible conflict in the future in this area but at present detailed scientific work is being done to ascertain the area's full value and possible proposal as a National Park.

In NSW the Yessabah Caves at Kempsey are under threat from quarrying. (See Keir's Report in this issue of Fussi.) Tasmania however has some big problems, two of which revolve around Exit Cave.

Exit cave is the longest cave in OZ, is included in the World Heritage area and in 1990 access to the cave was reviewed. This review was not an easy process with submissions being written by caving groups around the coun-

try and NPWS conducting meetings with mainland speleos in Sydney and Melbourne. After six or so months of negotiations cavers and the Dep't of Parks Wildlife and Heritage agreed to the continued use of the cave as a recreational cave, that track marking occur and also the marking of no go areas due to threatened habitats and the vulnerabilities of ecologies due to pollution in catchment streams.¹ Importantly, they also agreed on the limitation of the number of trips and size of parties to the cave per year.

However after all of this it appears that Mr Tony Colberg, a past ASF secretary, has been granted a six month license to take adventure caving parties into Exit cave: Three trips a week, ten per party. Officers in PWH initially opposed or banned the idea for a license, (Interest was expressed from the mainland as well), but following appeal to higher authorities, (the Minister), the ban was revoked and the license issued to Colberg. So much for negotiations.

Benders quarry is 800 metres away from Exit cave. 1990 also saw a continuation of the struggle to limit the activities of the Quarry until studies of the caves extent and habitats, and the possibility of mining in another area, cost of moving the quarry, compensation etc were completed.

The results of these studies have found a relationship between Exit cave and the quarry as well as finding significant fossil deposits in the surrounding karst area. Alternative limestone sources have been found at the Risby Basin area and also by back loading from Japan, which is in the habit of knocking over its Tower karst to obtain flat land! ²

The ASF council meeting passed a motion requesting that the Minister review his decision to grant a license for adventure tours into Exit Cave and calling for the immediate the closure of Benders Quarry.

The Safety commission convened by Anne McClaren, reported that it had been a quite year as far as the Commission was concerned with the

publication of the Cave safety guidelines at the beginning of the year and the reportage of a major accident at Mystery Creek in Tasi in July. Anne also published details of reported accidents since 1973 and noted that of the 13 accidents 8 were due to lack of experience - poor technique, getting stuck, lost, incorrect attire and 5 due to an "act of God" - flood entrapment, rockpile collapse, falling rocks. Anne requested that accident report forms be sent in so that the Commission can continue to build up a database on the type and number of accidents that occur.

Anne also resigned as convenor of the Commission and "is looking for some knowledgeable and enthusiastic young cavers to take it on!" ³ With Anne resigning the ASF will have only two women in its formal structure, i.e. executive and Commissions. They are Julia James, on the International Commission and later on in the year Clare Buswell when she takes up the editorship of the newsletter.

John Dunkely, Convenor of the Cave Management Commission, reported that the commission has been active in writing replies to draft management plans and answering requests for information on cave classification systems. His report presented four types of cave classification systems which are currently in use or are proposed to be used in the future. (Have we lost the chance for a unified national system of cave classification?)

John also requested the need for direction for the commission and pointed out the importance to the commission of having a club based contact so as to facilitate management issues at a club level. At the Conference the commission also conducted three workshops on issues to be considered when managing caves. The results of which will appear in the *Australian Caver* 4 later in the Year.

The newsletter editor Ian Mann reported that he managed to bring out the last four issues of the *Australian Caver* under budget and that the major problem with the newsletter is a lack

ASF COUNCIL MEETING MORE EXCITING THAN THE UN SECURITY COUNCIL MEETING

of writers! The Council decided that, as Ian has decided to cease being editor of the Newsletter as at the end of this year, the editorship be phased over to Clare Buswell during the course of 1991.

The Constitutional Debate.

Well it did not quite reach the dizzy heights of the post coup constitutional debates in Australia in 1975 but for some time there was concern over its wording and structure. The discussion on the constitution took about a day of the two days allotted to the council for its meeting.

The changes to the constitution revolve around representative and equitable voting rights for member clubs, increased power given to the executive to run the organization, appointment of positions within the executive made by the executive rather than the council directly electing a person to a particular position.

The implications for Fuss for the changing representation and voting procedures are that we will no longer receive one vote for being a corporate member organization regardless of how many members we have. The number of councilors per organization is now based on the number of members it has. This is as follows:

no of members	no of votes/ councilors
6-15	1
16-30	2
31-45	3
46-60	4
61-75	5
76+	6

In 1990 Fuss had 13 full members, based on those figures there would be no change in the number of councilors we would have at a meeting. Hopefully for organizations such as the Victorian Speleological Association such a change in the numbers of councillors will mean a more equitable representation. Further such a change in voting rights will hopefully see more people at ASF council meetings.

Changes giving more power to the executive are aimed at making the day

to day running of the ASF easier and without having to leave it to the annual council meeting to give the nod of approval to the executives actions.

I hope that it works, but my sinister mind leaves me questioning the accountability of the executive to Council members. Are Council members going to be notified of executive meetings so that they can place items on the agenda and be able to attend executive meeting if they wish? Are minutes of the executive meetings going to be distributed to member organizations so that they firstly, know what has transpired and secondly, can act and add weight to the executives actions? The ASF is after all a council of member organizations not solely an executive doing all the work.

Election to positions on the executive by the executive has both its drawbacks and its merits. The drawbacks revolve around lessening the power of choice given to council members on whom it would like to see in the position of treasurer or secretary or vice president/s, and the increased opportunity for executive members to place people who are very capable of doing a particular job in a different position because they may, for example, hold ideological positions different to the rest of the executive. **This is not to say** that any of the above will happen but investing such power in an executive often results in a lessening of participatory democracy. Or put simply, knowing and understanding what is going on, why a decision is made and being able to influence those processes.

At any rate, for the ASF to really work it has to continuously be in dialogue with its members, which means that its executive should be referring back to its grass roots members what it is doing and its commissions should be doing the same. Council members also have a reciprocal responsibility to actively

support both their executive and their commissions.

C. Buswell

1. Clarke A., Report to ASF Council Meeting Margaret River. p 2.

2. Ibid. p 3.

3. McClaren A., Cave Safety Commission Report. 1990. p 1.

4. The newsletter of the ASF.

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RING CLARE

WHAT HAPPENED AT YESSABAH

Keir Vaughn-Taylor

History recalls that the formative years at Kempsey were pioneered by a logging industry based on giant cedar trees. The wood from these 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 sawers 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 overwhelming response. SUSS members were advised of the situation and exploratory visits to Yessabah revealed an area of rare beauty and 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 not mining 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 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 Christ 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 paid 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. And 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

WHAT HAPPENED AT YESSABAH

with legal action in an attempt to promote a "meaningful dialogue".

I applied for legal aid through the government agency, the Environmental Defenders 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 stand 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 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 bulletin sheets to keep them informed of the state of our case. We managed to obtain 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 object. Our actions were "rocking the boat".

Kempsey Speleological Society was reluctant to support us since it we being assured by the National Parks and Wildlife Service that their negotiations were being threatened by our disruptive influence. KSS had been shown a "restrain" 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 on the problem of public outcry. At worst it gave us two bites at the cherry.

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 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

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WHAT HAPPENED AT YESSABAH

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 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 regeneration plan under the advice and management of National Parks.

Bungonia is a tragic example of the value of 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. 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.

This made the development of a mining settlement 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 dialogue. Settlement could not be reached without access to the mine site. Naturally, until a settlement was consummated 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 intrusion 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.

SUSS trips to Yessabah were organised 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.

A note on the formation of Yessabah Caves

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 cave 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 and 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

WHAT HAPPENED AT YESSABAH

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 spills 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 beeded 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.

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 metres just inside the wall of the one of the mine benches. The internal wall of this caves on the side of the mine is cracked 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.

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

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WHAT HAPPENED AT YESSABAH

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 laid 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 affidavits quantifying the importance of values relating to heritage, flora, fauna and karst. We need to prove that mining is inconsistent 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 photogramatist'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.

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 of 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.

Crushed limestone is presently selling for \$30 a tonne which means this plan provides reserves of limestone worth 18 million dollars. Only time will show whether they will accept this plan or whether we shall run the Gauntlet.

At Christmas 1990 the situation radically changed and our desire to negotiate will never again be so conciliatory. While the Courts and the environmental lawyers from the Environmental Defenders Office were on holiday the Minister of Mines Neil Pickard granted a mining lease to David Mitchell Melcann. This action was a complete shock since we possessed two reassuring letters from the Minister stating that he would not grant a mining lease until after the Court case had been heard. Although the Section 25 enables the Court to restrain beaches of the mining act and it may be true that the mining company has been operating full steam ahead since 1983, once the mining lease is granted, the mine operation is then magically transformed into a legal operation and the Section 25 case is academic.

What happened at Yessabah

It was felt that the Minister had interfered with the due process of Natural Justice and we tried to obtain through subpoena all the documents he possessed relating to Yessabah. In Court he successfully resisted the subpoena. The mine at Yessabah had almost exhausted its reserve stocks and it is now necessary for them to blast again in order to continue mining. The only restriction to this is the undertakings they had given to the Court not to blast or mine bedrock until the outcome of the trial and so they applied in Court to have these undertakings dissolved. In this hearing we applied to have the Minister of Minerals and Energy joined in the proceedings claiming that the mining lease he granted was not legal. Fortuitously the Court held that the Minister was now part of the proceedings and the documents that he was loath to surrender to our scrutiny should now be available for a more equitable assessment of what has taken place in the last few months to change his mind.

Since DMM have now admitted in Court that they have been continuous-

ly mining it is the argument as to whether or not the lease is legal that the whole case now stands. This case will be heard in June.

In the meantime recent events have seen an increase in legal activity.¹ On the first of February, at a hearing in the Land and Environment Court, DMM agreed to continue, for one week, to abide by the undertakings that prevented them from mining at Yessabah. The judge ordered that the Minister be joined as a second respondent (defendant) in order to investigate whether or not the Minister's actions were lawful or otherwise.

On the seventh of Feb the hearing continued and DMM gave an undertaking to the Court which allowed limited operations. They are allowed to remove 16,000 tonnes from the bottom two benches. Mining is otherwise prohibited. This agreement is without admissions and allows DMM to continue operations pending a full trial, which is set for June 3.

February fifteen the Minister files an

appeal against the Land and Environment Court's order made against him on the 1st of February.

There will be a hearing in the Court of Appeal of the Supreme Court of NSW to determine whether the Minister is to be given leave to appeal. The Minister's determination to resist an investigation by the Land and Environment Court into the propriety of his conduct is evidenced by his decision to engage four barristers, (two QC's including the solicitor-General of NSW and two other barristers) for this appeal. DMM will also be represented.

The campaign to defend Yessabah desperately needs financial assistance. Any donations should be sent to:

Yessabah Campaign
C/- Macquarie Uni Caving Group
Sports Association
Macquarie University NSW 2109.

1. See D. Hobbs. Yessabah Update. Appeal for Donations. Insert to Australian Caver No. 126. pp. 1-2.

For Sale
At a greatly reduced price
the

Australian Karst Index

Edited by Peter Mathews.

This is the book that lists
most known and documented caves in Australia up to 1985.
It was put together by speleos who have spent heaps of their time
mapping and documenting the caves they've explored.

It is the first place to look, apart from under a rock, when planning a trip
anywhere in the country.

Reduced from 25.00 plus postage to

\$10.00 plus postage.

Place your order with the Club Secretary.

TROG DELIGHTS

LIBRARY NEWS

Mavis has returned from the extended meditation trip that resulted from the not-so-nice habits indulged in last year. One good thing to come out of this is Mavis' review of the following new additions to the library.

Australian Caver 125. ASF Newsletter.

Notes on the activities of the Metropolitan Speleological Society and the Speleo Research group of W.A. Report of an accident at Brides Cave, Leeuwin Naturaliste Ridge April 1990. Write up of a project undertaken by the friends of Buchan Caves involving the removal of 80 years of silt and mud, surveying of an existing streamway and the design and construction of a new pathway in Fairy cave. Abstracts of new material on speleology from around the globe. A book review of Chris Howes latest book titled: *To Photograph Darkness*, which is a "comprehensive history of underground photography".

Australian Caver 126. ASF Newsletter.

A report of the Mystery Creek Accident, and the mailing list of Australian Caver.

Journal of the Sydney Speleological Society. Vol. 35 No. 1. 1991.

Reports on: A Trip to Lucas Cave Jenolan: A reprint of a chapter from *Two A Wheel* titled, Caveland from without: caveland from within. It was first published in 1903. Notes on what is happening club wise. Minutes of the AGM of March 1990. Notes from the President concerning members' activities on the Nullarbor and a talk from Prof. Zhu Zhen from China.

Nargun. The Newsletter of the Victorian Speleological Association. Vol. 23 No. 6, Dec. 1990.

Programme to the end of February. A list of who has not returned books that have been borrowed from the

VSA library (naughty people), notices from the VSA, in particular, adverts concerning VSA digging activities over the Xmas-New Year break. The use of a wet and dry vacuum cleaner at Buchan caves which helped clean up 80 years of lint, debris, mud and rubble. Finally, a report of the Friends of Buchan Caves Working bee in November.

Nargun. The Newsletter of the Victorian Speleological Association. Vol. 23 No. 7, Feb. 1991.

Editorial by P. Akroyd on Cave safety and the Press. Programme for the next few months. Notice of a Cabinet reshuffle due to the departure of the President. (*President is now in exile in Tasmania ed.*) The major result of the reshuffle is that the VSA now has a women for president. Trip report on Thailand: Review of two decades of on and off exploration to Moon cave. Lots of talk about mud.... Reports on searching for caves in Tasi and of solving a mystery over a confused numbering system. A report of the joint VSA Cegsa Dinner, VSA 14 and Cegsa 3. Note on the rescue practice held in December and on first aid kits. A bit of history on the making of ascending gear using hemp rope and sash cord for equipment, article dated 1960.

Troglodyte. Newsletter of the Northern Caverneers Inc. Tasmania. Vol. 2 No. 9, Jan. 1991.

Notes concerning the release of the Draft Management Plan for Kubla Khan. Trip report to Croesus cave and copies of letters from Parks, Wildlife and Heritage concerning permits and cave reports.

Scout Caver. Issue No. 1. Jan. - Mar. 1991.

This is the new newsletter of the Scout Caving Group of South Australia.

Editorial. An article on Caving clubs of South Australia, which is a brief history of the SCG: Notes on safety and training: an article by Mr Brian Clark, on Caves, Conservation and Conflict (*well worth a read, ed.*). Lift out of the regulations and procedures

of the SCG: a trip report to the Murray. What is on for the next nine months.

Rimstone. No. 15. Oct. - Dec. 1990.

Report of the activities of the TESS for the 1990's. (*Scandalous subterranean reading. ed.*) A copy of their submission to the Conservation Commission of the Northern Territory concerning the Cutta Cutta Nature Park Draft Management Plan. (*Much better. ed.*)

The Caver Chronicle. The newsletter of the Speleo Research Group (SRG) of Western Australia. Vol. 17 No. 3, Dec. 1990.

Editorial concerning the use of fire by Homo Sapiens. Trip report to Barrow Is., Brides Cave restoration which put into position some abseiling bollards. Press clippings dealing with the mystery creek accident, heritage moves on the Nullarbor and a press release by CALM concerning working relationships with speleo clubs. It is also noted that SRG are going to be on the Nullarbor around the same time as the Fuss trip, July 6 - 21.

Oolite. Journal of the Blue Mountains Speleological Society. Vol. 20 No. 2. Jan. 1991.

Historical issue celebrating the silver anniversary of the society. Well done folks.

ASF Council Meeting.

Documents from the meeting held in Margaret River. Some of it makes for scintillating reading.

ASF Conference Proceedings and Field notes.

Just borrow, steal or beg them and have a good read in between the boring Maths 1 lectures. Good stuff.

Library material is available on a monthly loan basis. Ring David Manuel if you want anything.

Mavis the Gibbon.

How Caves are Formed

Water containing dissolved limestone drips from the roof and leaves deposits in the form of stalactites.

Slightly acidic water dissolves the rock as it percolates down, widening the vertical cracks.

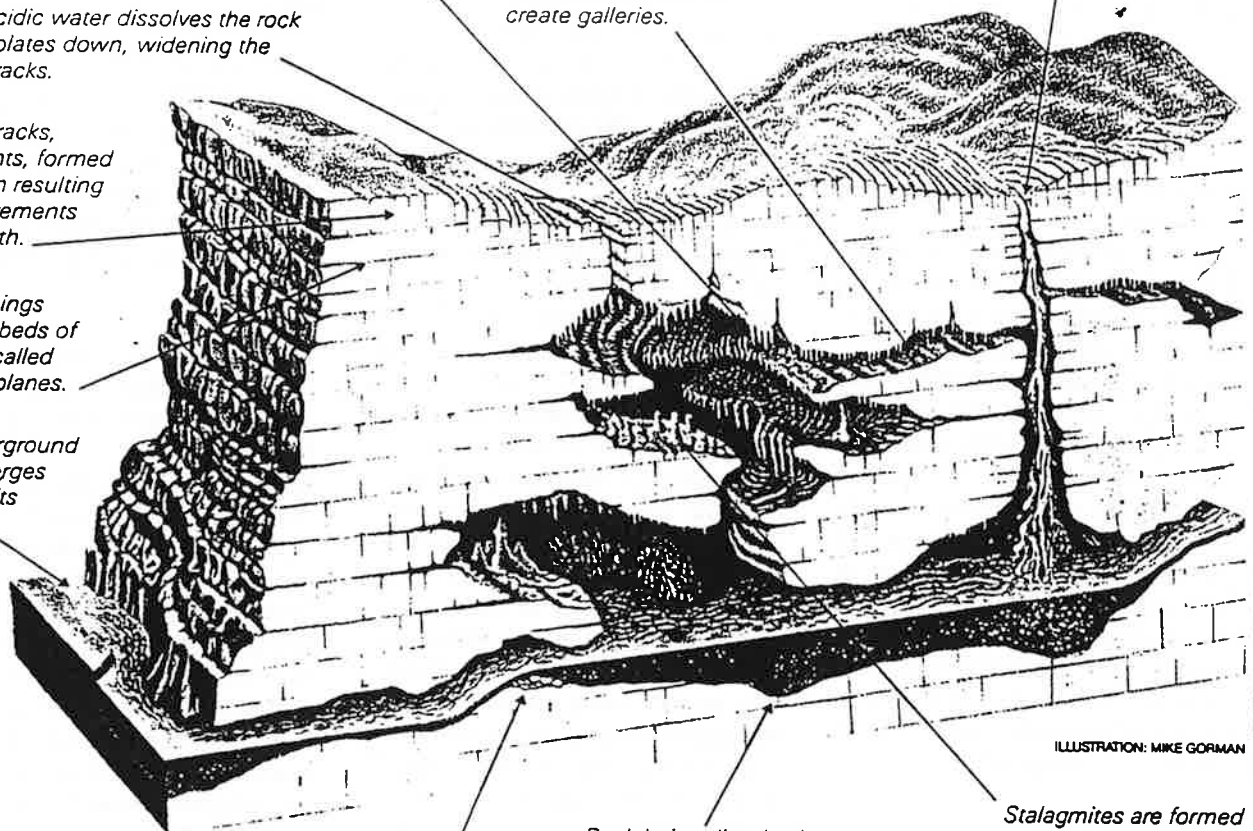
Vertical cracks, called joints, formed by tension resulting from movements in the earth.

The openings between beds of rock are called bedding planes.

An underground river emerges far from its source.

Water in horizontal breaks dissolves the rock to create galleries.

A surface creek has widened this crack to form a sinkhole. Farther down, the crack has widened into a chimney.



As the water-level drops, caves may collapse, having lost the support of the water that used to fill them.

Rock being dissolved underwater, continuing the cave formation process.

Stalagmites are formed when deposits left by falling water that contains dissolved limestone build up on the cave floor.

LARGE caves are most commonly found in limestone and were created by the action of water over time.

Limestone consists of calcite (calcium carbonate) and often contains the remains of ancient sea creatures. However, the Mt Anne caves are in 600-million-year-old dolomite, a rock made up of calcium magnesium carbonate. The clue to cave formation in both these rocks is that they dissolve in water, though dolomite does so more slowly.

The formation process begins when limestone is exposed at the Earth's surface. This might happen when relatively young limestone is raised above sea-level by movements in the Earth's crust or when older limestone and dolomite in mountain ranges are uncovered. In Australia, caves have formed in rock as old as 1000 million years and as young as a few thousand years. They are usually a lot younger than the rocks in

which they have formed.

Falling rain absorbs carbon dioxide from the air and picks up more from plant roots, bacteria and other organisms as it percolates through the soil. This makes it slightly acidic and as it finds its way into openings in the rock it begins to widen them by dissolving the limestone.

Limestone forms in layers, called beds. There are two kinds of openings in this rock: bedding planes, which are gaps between beds; and joints, which are vertical splits in the beds caused by tension in the earth. Deep caves, like those at Mt Anne, are often formed in rock that has been tilted by movement of the earth.

Near the surface, openings contain both air and water, but lower down they are completely filled with water. Here a significant stage of the cave formation process takes place. Sluggish

water dissolves the limestone to create large cavities while fast-moving water forms complex plumbing systems with rounded cross-sections.

When the water-level in these systems drops and air gets in, the water begins to behave as it does in streams on the surface, cutting out meandering courses and canyons in the cave floor. Large cavities, losing the support of the water that used to fill them, may collapse.

Stalactites and stalagmites form only in air. Both are known as dripstone because they consist of deposits left by water dripping from a cave roof. They are among the many features that attract people of all kinds to caves. But undoubtedly the biggest attraction of all is the perpetual lure of the unknown – because so many caves are still waiting to be discovered.

Armstrong Osborne

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# First Semester Programme

Tuesday 16th April 7pm **Annual General Meeting**  
Purple Lounge. Flinders University

**MID SEMESTER BREAK**  
**19TH APRIL - 29TH APRIL**

Tuesday 23rd April 6.30pm **SRT Practice** Drama Studio Flinders Uni.

Sat.-Sun. 27-28 April **Yorke Peninsula** Corra-Lynn.  
Simon Schmidt Co-ordinating Ph: 261-6497

Tuesday, 7th May 7pm **General Meeting.** Caving in Mexico. Steve Milner will present his slides of Caves in Mexico

Tuesday 14th May 6.30pm **SRT Practice** Drama Studio Flinders Uni.

Tuesday 21st May 6.30pm **SRT Practice** Drama Studio Flinders Uni.

Sat.-Sun. 25-26 May **Yorke Peninsula, Town Well, Corra Lynn**  
and Windmill Cave Project  
Co-ordinators Di and Clare.

Tuesday, 4th June 7pm **General Meeting. Rock, Rattle and Roll**  
**A talk on Cave Formation** Pam Storer.

Sat.-Sun. 23-23 June **Naracoorte Mapping.** Jenny Laidlaw  
Co-ordinator (Tentative)

**FIRST SEMESTER ENDS JUNE 23**  
**SECOND SEMESTER STARTS JULY 29**

Fri. 12/7 - Sun. 21/7 **Nullarbor.** Meeting up with SRG and WASG?  
**Co-ordinator/s Di, Clare, Simon?**

**FOR YOUR LONG TERM PLANNING:**

Jan 12 - 27 1992 Yarrangobilly, Bungonia, Jenolan  
Jan 25 - 26 1992 9am ASF Council Meeting, Jindabyne  
Dec 1992 ASF Conference, Tasmania  
1993 International Speleo Conference in China.

**DON'T MISS ANY OF THEM!**

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Simple Bowline

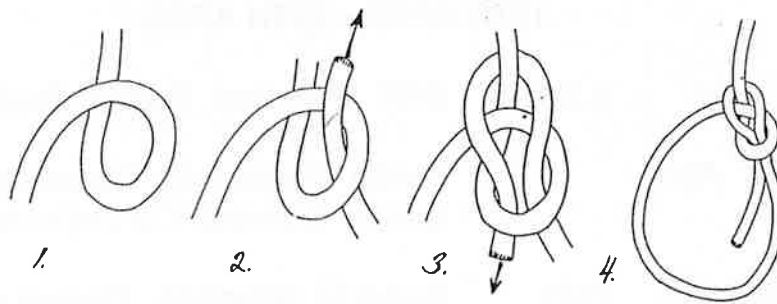


Fig. 11.7 Simple bowline.

This is still the standard climbing knot in many parts of the world (Fig. 11.7). Easy to tie, but it must be tied off or backed up in some manner to insure that it will not loosen while not under tension. Feeding the free end back through the eye of the knot works well as a safety, as in figure 11.11. It is not a problem to untie after loading. If the loop is formed wrong, then the result is no knot at all. It is also possible to tie the knot incorrectly, reducing its strength by about half (Fig. 11.9).

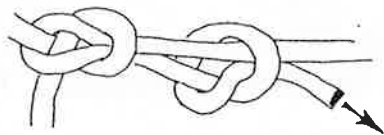


Fig. 11.8 Simple bowline with overhand safety. A double fisherman's knot can also be used as tie-off.

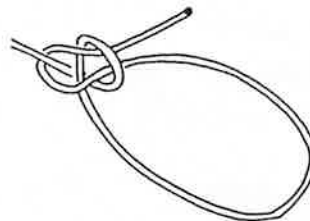


Fig. 11.9 Incorrectly tied bowline.