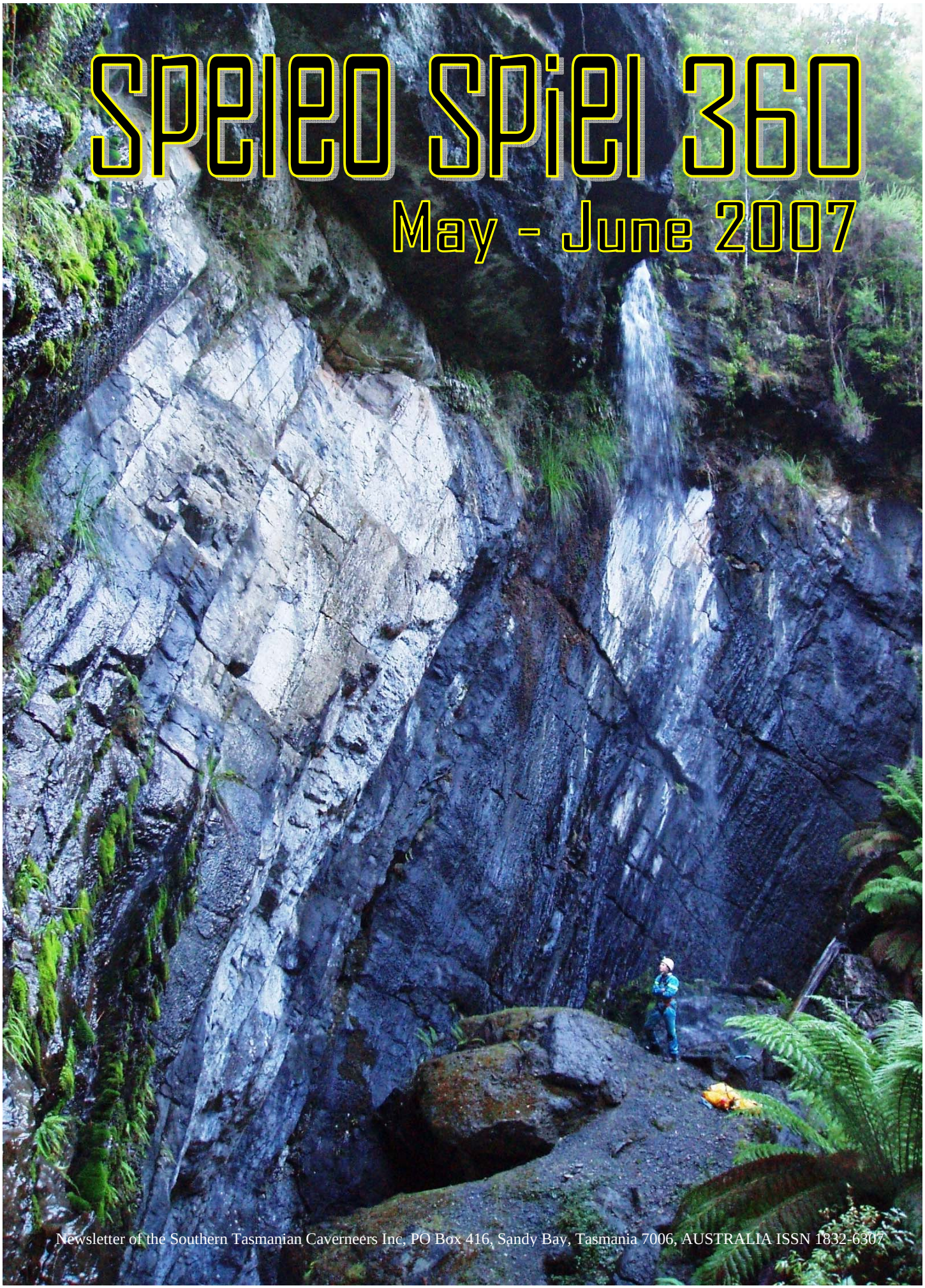
Speleo Spiel 360

May - June 2007



Newsletter of the Southern Tasmanian Caverneers Inc, PO Box 416, Sandy Bay, Tasmania 7006, AUSTRALIA ISSN 1832-6307

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Front Cover: JF-225 Three Falls Cave entrance doline (photo by Matt Cracknell)

STC was formed from the *Tasmanian Caverneering Club*, the *Southern Caving Society* and the *Tasmanian Cave and Karst Research Group*. ***STC*** is the modern variant of the Oldest Caving Club in Australia.

Speleo Spiel

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Editorial

With our 360th *Spiel* published is it reasonable to suggest that we've come full circle? Maybe if the name change back to TCC had gone through …

The winter doldrums are here which always makes the idea of caving less appealing. Particularly unappealing is the thought of derigging Tachycardia at its wettest time. No doubt a witless bunch of suckers can be mustered for the task. Unfortunately a recent trip to this cave has yielded a drafting lead near the bottom, so there'll be plenty more trips to do yet.

It looks like the volcanic caves on Mars have attracted Greg's attention – see page 17. Bloody lava tubes.

Well done to the Ken and Amy bunch for their breakthrough in Hooks Hole/Leech Pot at Ida Bay (although Ken informs me that all the credit must go to Amy for pushing the horrible squeeze that lead to the discovery – I guess these enthusiastic mainland recruits are useful for something after all …) It will be very interesting to see the survey and work out what is going on with the new passage that seems to be going the wrong way.

It's nice to see a contents page that is mostly devoid of my name. Not only are other members of the club actually caving but they're also writing about it too! I am a happy editor. I've been too busy taking holidays to go caving, although I was surprised to find myself in some superb karst while sea kayaking on Flinders Island. There are abundant calcarenite deposits around the coast and I even got to paddle through a cave/arch. Next thing I know I'll be getting excited about sandstone caves …

You may have noticed my home phone number has changed. Yes, I'm aware it is a strange number.

Alan Jackson

Stuff 'n Stuff

SPORT AND RECREATION TASMANIA – GRANT APPLICATION - At the June business meeting it was accepted that the club would pursue the Sport and Recreation Tasmania's minor grant application. Due to be completed by mid July.

This grant provides 50% funding for community sporting clubs (i.e. us) to purchase equipment for the use of its members. The criteria for eligibility are that the project (equipment purchase) will:

-increase or maintain the number of people participating

-improve the quality or safety of participation

-improve the range of access to participation

Basically this means that the club can make a proposal to purchase caving gear (to enhance safety, participation opportunities, new members).

Some ideas for gear the club needs mentioned at the June meeting were:

-helmets, lights, trog suits, GPS, ropes, EPIRB, SRT gear

I am interested in getting some feed back from members as to the types of equipment (and their costs/sources) that the club may want or need so that we can complete the application. Stuff I want to know is how many of each item, size (trog suits esp.) lengths, diameter and brand (rope). Lights, do we go to LED with rechargable battery packs (single units no maintenance i.e. disposable) or do we go with the new miners lights (easy maintenance, spare parts, heavy). GPS brand, SRT gear, etc etc.

Please contact me with any ideas. *Matt Cracknell*

Trip Reports

IB-28 Gollums Grovel

Ken Hosking

10-11 March 2007

Party: Arthur Clarke, Ken Hosking, Amy Robertson

Gollums Grovel was explored in the 1980s, but its position mid way between known underlying passages in Exit and Mystery Creek Caves suggested that further investigation might be worthwhile.

Amy, Arthur and I set out on the Saturday of the March long weekend to re-locate, explore and survey the cave. Predictably, we had difficulty in relocating the cave and spent some time bashing around in the bush, before realising that the GPS coordinates taken from the notes in the archive were clearly not correct. Yes, I know we should have used Madphil's master sheet, which we later found had the correct coordinates, but somebody had forgotten to put those in the GPS.

When Arthur, using the inbuilt GPS that he carries in his head, finally found the cave, it was apparent that nature had been at work. The upper entrance had disappeared beneath logs and mud and the lower entrance was nearly blocked with a squalid mess of mud and decaying vegetation. A little digging away of the lower entrance finally enabled a descent through a veritable mud bath, into a rockfall chamber with many apparent ways onward. We later found that the easiest way down was to descend immediately after the entrance down a climb and into a vee-shaped drop. However, initially many other prospects looked promising and we three all managed to reach the same vee-shaped drop by different routes. A short horizontal shuffle brought us to a flowstone obstruction, requiring an awkward manoeuvre to get to the top of a vertical drop. Here we found a pair of gloves, apparently left there years before by Arthur.

The drop (christened "hand-in-glove") looked like a pitch to me but Amy decided it could be free climbed and proved she was right by climbing down while Arthur and I waited for further news. Amy reported that after climbing down the drop, she had followed a further climb in rockfall after which she had found a pitch that really did need rigging, together with a clearly discernable draft. With the time getting late, we decided to head back out and come back on the next day with surveying gear.

Amy and I went back without Arthur on the following day, and surveyed our way into the cave. The seven-metre hand-in-glove climb after the flowstone boulder proved to

be much easier than it looked. Although it felt quite exposed, there were ample handholds and things to stand on. In any case it was near impossible to rig as a pitch, but we did put a hand line down for pack hauling.

After a short and uninspiring climb down through rockfall we came to a short pitch of about five metres, very difficult to rig at all, let alone achieve a free-hang. This pitch led to a larger pitch of ten metres. We had not seen much bedrock until now as most of the cave was nothing more nor less than rockfall, but now we had a solid wall on our left as we descended. The pitch was rigged as a near free-hang by belaying the rope to a bridge of large boulders.

At the bottom of the pitch was a large dripping chamber with the way on being a short drop of 3 metres to a lower chamber. We subsequently found that this very awkward little drop could be bypassed via a climb, but on this trip we had to suffer the annoyance of rigging the pitch and dealing with a nasty little overhang for the most brief of descents.

From the next chamber, there were two ways on, both involving climbs down through rockfall eventually reaching stream passages, dry on the day of our visit, both of which were blocked. A little bit of climbing around revealed that these two areas were connected via the rockfall that fills the lower section of the cave.

By now we had had enough of the cave, as the survey in through the seemingly endless rockfall had taken some time and it was time to turn back.

On the way back we were glad to have rigged the handline on the hand-in-glove climb, as by now we were plastered in mud and everything was slippery and wet. Even then, it was not easy to haul the packs up this climb as the handline was so muddy that it was nearly impossible to get a grip on it.

Although the survey was taken right through the cave and down to the lowest point, we had lost the draft somewhere above the ten-metre pitch, and with a few unexplored crawls and squeezes still being evident, we reluctantly decided to return at a later date.

IB-131 Old Ditch Road/IB-14 Exit Cave thru trip

Matt Cracknell

7 April 2007

Party: Tom Aberdeen, Matt Cracknell, Peter Freeman, Doug Henry

I arrived from Hobart at the Ida Bay carpark at 6:45 am; the Victorians were keen for an early start. I guess it was a good idea because it was going to be a long day. By the time we got to "40 Minute Creek" almost 90 minutes had passed.

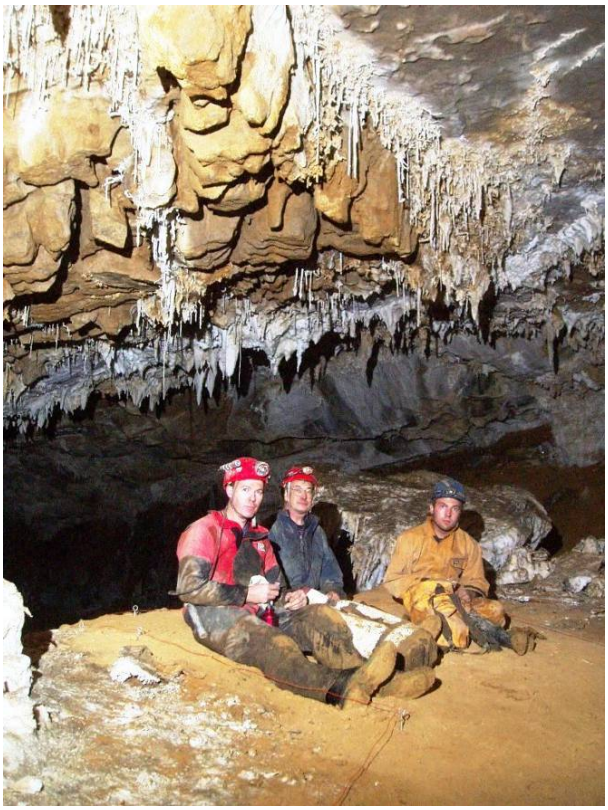
Finding the turn off to the Old Ditch Row (Road) entrance was no problem with Ric's freshly installed character turn-off system but Peter had still brought his trusty GPS though, just in case it was possible to get a good reception under the dense canopy! By following the foot prints left behind by the trip a few days before we made it to the cave, no problems.

I rigged all the pitches, spending a bit of time between the first and second just to make sure that the Victorians were going to be alright. Overall the descent was straight forward, dropping down through a series of pits and narrow slots. I am so glad that I was first down the last pitch, not only for the exhilaration of dropping down into a huge room at the bottom but also because of what was about to ensue.

It seems that Victorians are used to caving in caves where every man and his dog has been before, it was bit of a surprise to get into space underground. The idea that there are places where foot prints do not exist is completely foreign to them. After a few harsh words on my part, the situation had been explained. There are important reasons why we walk where we do …

At the river we dumped our gear, made a turn around time and then set off into the rockpile. I think it was the first time that I didn't get side tracked on the way through there, even though a 'Petzl Gloom' was my best source of light.

The trip up the river is all a bit of a dream for me really. I had been up since 4:30 am and was in walk mode. I barely noticed the fantastic channel deposits dumped in the river passages. Somehow we made it to the Grand Fissure for a spot of pretty watching, but I guess I was more interested in the ceiling, what I could see of it that is.



The Victorian lads pose in the Grand Fissure.

A few hours later we were back outside in the last rays of daylight. Not before I had a power nap at the Eastern Passage junction on the way out. We refueled in anticipation of a long walk back.

I guess the Victorians had enjoyed themselves because they were still talking to me by the end of the day. Hopefully they will tell their friends about the finer points of minimal impact caving.

IB-28 Gollums Grovel

Ken Hosking

8 April 2007

Party: Sarah Gilbert, Ken Hosking, Amy Robertson

The objective of this final trip to Gollums was to seek out every last possible lead, particularly in the area where the draft disappears.

Before we began to descend the cave, Amy found a promising entrance in an adjacent doline, but it ended in a mud filled choke, barely out of sight of daylight. An attempt to find the exact location of the upper entrance of Gollums convinced us that we had the right place, but a large amount of mud had filled the entrance over the last few years, making entry impractical unless some major earthworks were to be undertaken.

The lower cave entrance was a little less muddy this time, following a spell of dry weather, and I noticed that the slow oozing of mud into the entrance climb had almost ceased.

We descended the cave, systematically exploring every possible lead. A number of possible side passages at the level where the downclimb to the first pitch begins were followed. Several merely reconnected into another part of the cave, while the remainder terminated in breakdown. The draft disappears in this area of the cave, and the lower levels are draft free. Nevertheless, we crawled into every nook and cranny in the lower levels, but to no avail.

It was in the lower chamber that Sarah found the climb that bypassed the last pitch, and more connections between chambers in the lower levels were found, but no way on was apparent.

Annoyingly, we could not find any sign of a connection to the system associated with the other entrance, at any level of the cave. The old *Spiels* are ambiguous as to whether a physical connection actually exists, but it does seem that the systems connect to the extent that light can be seen from one system to the other – until such time as the upper entrance has been excavated, this other part of the cave will have to remain a mystery.

For the benefit of masochistic cavers who might feel tempted to visit Gollums Grovel, the description and rigging details for that part of the cave accessible from the lower entrance follow:

From the lower entrance, slither, climb or otherwise free-fall over a vee-shaped gap into a muddy chamber formed from rockfall, from where there are numerous alternative climbs leading down to a lower chamber. At one end of the chamber is an awkward slither past a flowstone coated boulder, leading directly to the Hand-in-glove climb. The climb is much easier than it appears, but care should be taken in squeezing past the boulder as the drop is immediately below. A hand line is recommended for pack hauling, as the climb is best tackled as a chimney and there are numerous protrusions that try to catch bags on the climb out.

A further downclimb follows this first climb, and it is prudent to rig a belay before entering, as there are very few rigging points for the pitch which follows and the best option for a back-up to the main belay is to tie off to one of the large boulders at the bottom of hand-in-glove, and run the rope down the next climb to the top of the pitch.

The first pitch suffers from a dearth of anchor options, but placing a tape around a large boulder at the head of the pitch provides a safe, but badly placed, main belay. A rope protector is required near the top of the pitch and there are other but less problematic rub points on the way down.

The next pitch is probably the only enjoyable part of the cave, being a ten-metre drop which can be rigged off a bridge to give a near-free hang, although it is wise to protect the knot from abrasion. There are very few back-up options: using the rope from the previous pitch is probably the best.

The ten-metre pitch terminates in a large dripping chamber, with a sloping floor with a further drop of three metres at the lowest point. This can be bypassed by a climb to the right, over unstable boulders.

The cave continues with two obvious parallel climbs leading down to a dry streambed with numerous interconnections via the ever-present rockfall.

Most of the cave is formed in rockfall and very little bedrock is to be seen. There are many dolerite boulders in the cave, many of which are quite loose and care needs to be taken at all times to avoid dislodging rocks onto cavers at lower levels.

Pitch details:

***Hand-in-glove**: 7 metre climb, hand line recommended for pack hauling.*

4 metre climb through rockfall.

5 metre pitch: main belay is an obvious boulder at the head of the pitch, back-up to large rocks at the top of the previous climb. The main belay requires a four metre tape and the back up requires a three metre tape. A rope protector is required about one metre below the take off point.

10 metre pitch: rig off a large rock forming part of a rock bridge above the pitch, back up to the rope from the last pitch. A four-metre tape is ideal. The knot rubs on the belay rock (if it was set lower it would be difficult to get on and off the pitch) and a protector is required there, and would also be beneficial to protect the rope against abrasion on a ledge about two metres down.

A single rope of around 45 metres is sufficient to rig the entire cave as the pitches follow immediately after each other.

The total depth of the cave is approximately 50 metres.

JF-345 Ice Tube

Janine McKinnon

14 April 2007

Party: Janine McKinnon, Dale Pregnell, Jane Pulford, Grant Roberts, Ric Tunney

Grant and Dale wanted an easy SRT trip. We had been intending, for most of the summer, to get back to the first couple of pitches in Ice Tube for some photography in the current dry conditions. Jane just wanted to go caving. Only Ric and I had been to the cave before, so it was all new territory for the others.Thus a photography trip to the top of Ice Tube suited everyone (well, they didn't complain).

We got underground at 11:30 am on a beautiful day. The cave was drafting inwards quite strongly and it was cool at the pitch head. I rigged Phreds Downfall, whilst Ric started happy snapping, and I then continued down Degenerated Man, leaving Ric to use the others as photo subjects for a change. We have way too many cave photos with me in them.

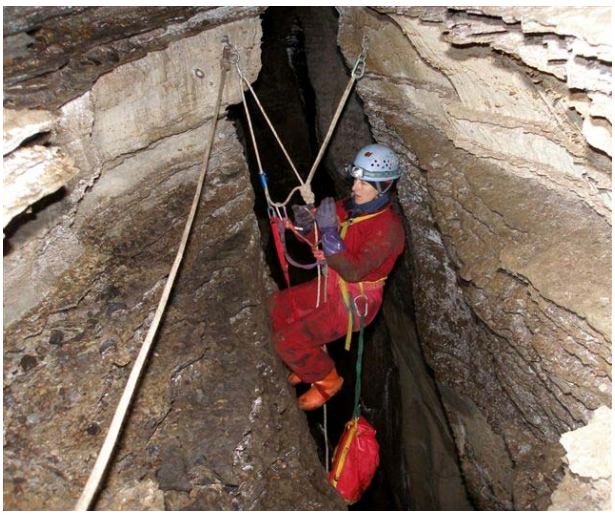
Dale looking far from a degenerated man in Ice Tube.

We were all at the bottom of the second pitch not long after 12:30 pm.

The bottom half of Degenerated Man was still drippy despite the lack of rain for several weeks and the temperature felt significantly cooler than at the top of the pitch.

We had a look at Placebo Effect but as we didn't have the gear for any further pitches no-one was particularly enthused about continuing on just to look at the top of Inlet Pitch.

Ric continued snapping away. He was doing a wonderful job. Pity the remote flash with the Firefly trigger didn't want to work. Thus no flashes half way up the pitches. The new Olympus digital flash we were using for the first time, which integrates with our Olympus digital camera, had a surprising range fortunately. It illuminated almost to the top of the 20 m pitches, despite its display claiming it would only illuminate to 12 m.



Jane at the top of Phreds Downfall.

Everyone started back up, with Ric going up in the middle of the group to get photos from both above and below. I came up last derigging as I went. We were all out by 3:30 pm.

On reviewing the pictures, our photo quality has taken a dramatic leap upward with this new system, despite not having the remote flash working. The flash fires five times when triggered (yes, we all counted), so it must be doing all sorts of clever computer monitoring stuff! This is the first time we've had a system where the camera and flash "talk" to each other properly and the results look amazing. It almost makes one keen to do more underground photography. I can't wait to see what happens with pitch photos when we get the remote working too. Jane had her camera and flash there as well and hopefully got some good photos too.

Another advantage of digital photography is the participants get a copy of the photos. Some compensation for all the waiting around and smiling for the camera.

H-X4 Erebus

Sarah Gilbert

22 April 2007

Party: Matt Cracknell, Sarah Gilbert

We left the Hastings car park at about 10:30 in a brief patch of sunshine, and headed off for a soggy, wet walk through the rainforest in the rain. We timed it well though, so the weather had let up by the time we reached the cave, and we were able to gear up in relative comfort.

After starting to rig the first pitch Matt discovered an old rotten log hanging dangerously over the pitch, a few meters below the rebelay. The obstinate log nearly turned us back, but after a bout of cursing Matt finally managed to muscle it out of the way, to land with a crash at the base of the pitch.

With the log in pieces below we headed down the 40 m pitch, then rigged the second 10 m pitch with a quick knot lesson, to arrive uneventfully at the bottom. We left our SRT gear at the base of the pitch and headed off to check out the rest of the cave. We went along the rift passage and down the steep climb at the bottom with the aid of a

handline. Then into The Sewer, aptly named for its impressive, dark brown mud banks. It was strange to be in a cave chamber with no echo. There were also some rather interesting cracks in the partially dried mud on the floor and intricate mud drip features on the walls. After climbing over and crawling through this beautifully sticky mud, my shiny new trog suit wasn't so shiny anymore.

Matt took a few photos of mud banks and drip pools, and then headed up the steep (10 m?) climb to investigate a supposedly unexplored lead, the main purpose of the trip. Unfortunately all he found were a few footprints and a dead end. He managed to climb back down safely and we headed up to the bottom of the second pitch for a late lunch.

After some sustenance we went up and out, with a few more photos along the way. There was only a light drizzle by the time we emerged, so we had a marginally less soggy, wet walk through rainforest, to arrive back at the car at about 3:30.

JF-4/5 Khazad-dum – Many Happy Returns

Stephen Bunton

25 April 2007

Party: Stephen "Birthday Boy" Bunton, Matt Cracknell, Janine McKinnon, Jane Pulford, Ric Tunney, Tony Veness.

I'm one of those people who like to celebrate life's landmarks. If you don't then life just passes you by and then one day you wonder "Where did it all go?" and "What did I do with my time?" So, as someone who firmly believes that life is too short to do things twice, what was I doing going down KD again?

KD is by far and away my favourite cave and so I came up with this crazy plan to take a mudcake down to the bottom and celebrate my 50th birthday with members of STC. In the end the plan went off brilliantly. There were enough people in the party to make a party and we did the thing alpine style i.e. rigged and derigged all in the one trip.

A quick get away saw us at the cave by 10 am with the ropes all sequenced in people's packs. I rigged the scaling pole for a quick exit at the end of the trip with a sacrificial rope, which we left behind as a permanent fixture to expedite future trips. The rigging went well and I was even on the pointy end of it for a bit. The climb up to the ledge on the right above the second streamway pitch is not for the faint-hearted but it's better than the p-hanger bolt traverse. On the way out I noticed the magic knot fairy had changed a few things but that's up to them.

The fourth pitch always guarantees a soaking and then the step over to the Brew Room adds that bit of excitement before the respite offered in this little oasis. I whipped out the cake, which was intact. We had a little birthday ceremony, a photo and Matt composed a little version of "Happy Birthday" which involved rhyming Buntee, KDee and Fiftee. As I served it out on plastic plates Matt disappeared over the wall to rig the last pitch and Janine followed; they would get their slice of cake on the way out. The mist in the cave was the most I'd ever seen and there weren't good views down into the last chamber. Ric's Stenlight was just like high beam in the fog. I touched down last, just after 2 pm, which meant that we'd bottomed it in 4 hours which is a bit slower than I expected given that the p-hangers make it a bit of a clip up.

Janine started up straight away whilst I escorted Matt, Jane and Tony to Sump I. The high tide mark from the most recent flood provided an awesome reminder of the fact that you would not want to be in the cave when it floods. Tony tried a few photos before we headed back. Matt and I packed up and raced up a few pitches to wait on a ledge out of the streamway. Tony and Jane did the first bit of derigging and Tony managed to salvage the fixed rope, which led down the first part of the last pitch. This was left behind from the KD through-trip.

As we exited the cave we often thought of the pioneers who bottomed the cave on ladders; they were tougher then. So was I! I struggled a bit on the way out, not just because I was hauling wet rope but possibly something to do with a possible raw prawn from the previous night's dinner. I thought back to the previous trips I'd done and how I found them easier. Yes I must be getting old! In the end we were out of the cave by 7 pm in a total time of 9 hours, which is a pretty good time for this style of trip, normally I'd recommend allowing 10-12! Perhaps we were busting a bit of a gut.

With the new p-hangers it is now possible to pack haul up the 22 m pitch. In the old days this was fraught with danger because it was difficult to throw the rope down again. I marvelled at the efforts of Bryan Cleaver and Jeff Crass who both had to free-climb this pitch to retrieve ropes on separate occasions in the past. On the way out Matt always volunteered to tote the heaviest pack and at one stage rescued me from confusion. The mist was so thick in parts that my little lightweight LED couldn't cut it and I bumbled around at the bottom of the Ninetyfooter; not the place you want to bumble around! Further up I never saw anything between the top of that pitch and The Flattener where I caught up with Janine who needed a boost for the climb up into The Corkscrew.

Gradually everyone caught up and we waited inside the entrance for all to appear because it was sure to be warmer than waiting outside in the cold, clear, night air. We were back at the car well before 8 pm and I blessed everyone with some bubbles from the lovely bubble wand that Tony and Jane had bought me as a birthday present. (Thanks.) By the light of head torches the bubbles looked magical. I should have taken it down the cave but was concerned I'd destroy it. Perhaps it needs to visit an easier cave. Perhaps after bottoming KD for the eighth time, so do I!

It really was a case of "many happy returns" and as such I can't see that I need to go and do it again. With a celebration like this I feel I have got all I ever wanted from my favourite cave and I would like to thank those people who came along and were a part of it. As a final note I should point out that although I was treated like royalty as the birthday boy, Ric and Janine are both older than me and probably in much better shape; still I had to get up and go to work the next day! (Jealousy.)

Australian Cave and Karst Management Association Inc – Biennial Conference, May 2007

Pat and Tony Culberg

29 April to 5 May 2007

Party: Many Tasmanians, including Serena Benjamin, Arthur Clarke, Pat Culberg, Tony Culberg, Ian Houshold, Nic Haygarth, Cathie Plowman, David Butler and Chester Shaw.

A large band of Tasmanians attended the conference. From what we saw they all enjoyed themselves. There were many useful papers and workshops covering topics such as cave lighting, paying particular attention to high intensity LEDs, education for cave guides, a new cave reserve in Slovenia, the development of Ruakuri Cave at Waitomo, progress in China towards World Heritage Listing of a karst region, reports from East Timor, Vancouver Island, New York state and Madagascar. In addition we helped celebrate the centenary of Show Caves at Buchan, specifically Fairy Cave.

As always with an ACKMA Conference there were many trips into the present (Government) show caves, an old show cave (Federal Cave), some privately run, now closed, tourist/adventure caves and some of the undeveloped caves in the region. Serena will have more detail on that.

One of the most important benefits of a conference like this is the exchange of ideas and the often vigorous debate.

Field trips also included tours of the Snowy River National Park, a local geology excursion conducted by Dr Susan White, a winery tour and tours of the various historic features of Buchan. The primary bus driver, Jenny, did sterling work in a bus with sloppy transmission linkages.

Buchan itself is a small community about 75 km inland from Bairnsdale and/or 50 km from Lakes Entrance. It is one of two show cave areas in Victoria; the other is at Glenelg River on the western border of Victoria. In either case the show caves are about 5 hours drive from Melbourne. The town has perhaps 100 residents, adding 95 ACKMA delegates certainly gave the town an economic boost, and a logistics problem. Morning tea and lunch were supplied by a different community group each day, the P & F one day, football club another, the CWA ladies another. But it was always the same people serving us.

All delegates acquitted themselves well in both the eating and drinking, but it was disappointing that the eating prize was not won by a Tasmanian this year. Kevin Kiernan was the star four years ago at Chillagoe, being awarded a battery powered pink pig. Pat Culberg won the fluffy bird award – it will be displayed at a meeting – for always being well dressed. The official dinner was its usual peculiar event – delegates from New York confessed they had never been to a dinner quite like it; Jenny the bus driver was equally stunned.

Like ASF, ACKMA runs an AGM every year [*is that what 'annual' means …- Ed.*], the AGM in even numbered years is a low key affair, the other has a conference attached. The next AGM is planned for Capricorn Caves near Rockhampton, Qld on ANZAC weekend 2008. There will be caving at various levels available around the time. The 2010 AGM is tentatively planned for Mulu Caves in Malaysia, and will have a longer program of probably a week, to justify the airfares.

The next ACKMA conference is at Margaret River, WA, in May 2009, the May 2011 conference has been awarded to Tasmania and will probably be centred on the NW Coast. There will be the opportunity for pre and post conference field trips. Cathie Plowman is head of the organising committee; Tony Culberg is likely to be financial officer. Many delegates are fit and active cavers, although others are semi-retired. Offers to run field trips are welcome. The conference itself will spend time on karst features around Montagu, Trowutta Arch, Lake Chisholm, the mound springs and Dismal Swamp. A lengthy site examination and report on land management issues at Mole Creek, where some caves are on private farms, some in National Parks and others on Forestry land, should be a feature.

ACKMA conference, May 2007

Serena Benjamin

The Culbergs have written a short article on the conference already so thankfully I can be brief. I managed to time my flights so that my exposure to Melbourne was kept to a minimum (my last trip there really left an impression) by going straight from the airport to the meeting point for the bus providing transport for 'international' visitors to Buchan. Oddly enough there was a disproportionate number of Taswegians on board. Well I guess we do have to cross the water! Needless to say I enjoyed the whole conference immensely, learnt heaps and ate lots. I couldn't look at a bakery for at least a day after I got home.

For the elective activities each afternoon I went on a tour to the Snowy River National Park, a walking tour of the pyramids karst area, a workshop on responding to change in cave management, a quick tour of Royal Cave, Slocombes Cave and on the final day to the former show caves of Shades of Death, Lilly Pilly and Murrindal. I really enjoyed the walking tour at the Pyramids as we visited a number of cave entrances, dolines and three of us zipped off to the Pyramid formation itself which included some of the best surface solution features that I have seen. The caves themselves were warm and dry, quite different to what we're used to down south. Royal Cave contained beautiful formations but it was somewhat marred for me by the presence of the most amount of chicken wire that I've ever seen in a cave. The three former show caves we visited had been developed privately so had some interesting old home made infrastructure in them as well as containing some magnificent formation. The cave I most enjoyed was an impromptu trip that occurred when several of us missed out on what we wanted to do and weren't thrilled by the other choices available. So Ian Houshold, Nick White, Dave Chitty and son, Russell Commins and myself headed out to Slokums. The entrance to this was a small doline in a paddock that led to a short pitch with mazy passages at the bottom. I had my first experience of seeing bats really close up in a cave, little bent-wings of

some description. If only one of us had had a camera! We spent a while exploring around with the most challenging part being a squeeze out onto a 3 metre climb (I was certainly glad I'm quite flexible on the way up). All too soon we had to get back because as always the conference itinerary keeps you in hyperdrive. Everyone wished they could be in at least two places at once. Another successful conference and a great introduction to the Buchan karst area.

Ida Bay Ramblings

Ken Hosking

6 May 2007

Party: Ken Hosking, Amy Robertson, Dion Robertson

The day began with a return visit to the Gollums Grovel doline, assisted with better instructions from Arthur as to where the upper entrance is, to see if this could be opened. On our previous visit we had not been entirely certain that we were looking in the correct location. This time, we located the rift in the cliff above the doline as described, but found it blocked with mud and vegetation. An attempt to dig it out was soon abandoned due to the volume of material that would have to be moved, and we had no suitable tools with us.

From Gollums we headed uphill and over the ridge, where Dion found a nearly hidden opening nearby to, but higher up in the doline from, IB-195. The entrance pitch of about 7 metres was promptly rigged, and Amy and I descended to find a small chamber, followed by a sloping flattener leading to another chamber with an obvious sink. While Amy played in the sink, I climbed up to a higher level and found a passage which blocked off after a few metres. Amy was quite excited about the prospects for opening the sink, but with Dion waiting on the surface, we deferred this to another day.

We continued roughly in a westerly direction, entering another large doline. There is an entrance in the lower part of this doline, but it looks like a serious earthmoving job to gain admission here. Dion and I climbed up and along a small cliff to the south of the doline and immediately I found a small hole which might have some promise, but required some excavation. About the same time, Dion, who was further along the cliff, found another entrance, well disguised behind tree roots, but offering real promise if the sounds of rocks bouncing down at least a couple of drops was any measure. A particularly large tree root prevented access, but I could just get my head in to look around, and a nice little pitch was visible, and it seemed that a further drop followed.

We left this for another day as we still had to locate IB-199, a supposedly undescended 10 metre hole. We found this nearby, and headed for home, dropping down onto the Southern Ranges track for an easy walk back.

With several reasons for returning, we planned an early trip to check out the leads.

More Ida Bay Ramblings

Ken Hosking

19 May 2007

Party: Serena Benjamin, Ken Hosking, Amy Robertson, Dion Robertson, Tony Veness

After leaving the Southern Ranges track, the party split into two groups, with Amy, Tony and Serena heading for the cave found the previous week, in which Amy wanted to dig, while I headed off for the entrance with the tree root barrier, with the intention of removing a few obstacles to entry. Dion, who had come down separately, joined me and we set to work to open the entry from head size to body size. This took some time but I had almost completed the rigging, while not looking forward to the awkward entry, when the others joined us. Meanwhile, they had rigged and surveyed Chip Grotto (so named because Amy's lunch on this occasion consisted of potato chips) but found that the dig at the bottom was not as promising as initially thought.

The entry to this new cave involved sliding sideways into the pitch, through a still narrow opening. The rigging consisted of a seventeen-metre rope, rigged from the cliff above and re-belayed to a firmly bedded rock above the entrance. In order to provide security while slithering into the entry, another, shorter rope was tied back to a nearby tree. The idea was that a changeover to the longer rope could be done further down the pitch, where there was plenty of space, as the approach rope was potentially subject to abrasion should it form the main descent means.

While I was dithering around, still without my SRT gear on, Amy set forth, squirmed into the pitch and disappeared. Although the report from below was not that promising, I geared up and began to follow her. All went well until I put my arm through the tape that formed the main belay – all of a sudden there was no further movement and I was unable to either move up or down. I was, in short, suspended by my armpit. A rock was grinding itself into my back and I was cast. Fortunately, Serena was able to grab the strap of my chest harness and pull me back to give me enough slack to squeeze back out of the hole. After that, I kind of lost my enthusiasm for following Amy. Nobody else seemed to want to go down either, and Amy re-emerged saying that the pitch was rather nice but that the cave terminated in rockfall. Rebirth Cave seemed like a great name for this little pothole. The entry seemed to be as uncomfortable and painful as being born, not that any of us have clear memories of that occasion. In my case I had to be dragged out of the opening, just as in an assisted birth. Fortunately I wasn't in a breech position. I don't think that this will be a regularly visited cavern. [*One more visit to tag the entrance and survey it into the Ida Bay surface network would be good! Ed.*]

From there we ambled off to nearby IB-199, reportedly a cave having an undescended ten metre entrance pitch. We rigged this pitch quickly and I descended to find that there was no more at the bottom of the pitch than can be seen from the top. I would be surprised if the pitch had not been descended in the past – it is quite enticing from above, and is not difficult to find.

We then set off for Holocaust and quickly found it. In fact Amy almost fell down it after ducking under a log that

obscured the entrance. We lacked the rope to descend on this occasion but a few rocks dropped into the entrance shaft (around 42 metres) made satisfyingly loud booms. We promised ourselves a return trip. Lethargy having then set in, we headed back to the cars, with little to show for the day's exploration other than dirty gear and, in my case, a souvenir of Rebirth Cave in the form of a painfully wrenched back.

Rotten Logs, Tonsils and Leeches

Ken Hosking

26 May 2007

Party: Serena Benjamin, Ken Hosking

Arthur had a theory about IB-43 Rotten Log Hole that suggested there might be the potential for extensions. As it happened, the residual effects of dental surgery sidelined Arthur, leaving Serena and me to investigate.

We approached the vicinity of Rotten Log Hole from above, following the Southern Ranges track for some distance prior to descending. As soon as we left the track, we came upon a series of dolines and features, most of which had been tagged. However, as we entered the doline tagged IB-126 (Big Doline) I noticed a small opening at the base of a limestone cliff. It seemed as though this hole might have opened up recently, as although it was only a few metres from the tag on the doline wall, there was no sign of a tag on the cave itself and no sign of prior entry. The sound of an underground stream could be heard coming up from the hole. This got me very excited and we rapidly did some gardening to open up the hole. Most of the material blocking access was merely loose vegetation and before long an enterable pitch of about seven metres was exposed. The only problem was that about halfway down a large rock protruded from the wall of the pitch, suggesting that descent might be interesting. The appearance of the rock later gave rise to the name of the cave – Tonsil Pot.

Descending over the mud and rotting vegetation was a squalid business, and the tonsil proved to be thoroughly immoveable and an awkward barrier to entry. At the bottom of the pitch it became evident that the majority of the noise was coming from water draining from the base of the doline, entering the pitch a few metres below the entrance that I had just descended. The volume of water was much smaller than the noise would suggest and the water sank onto loose cobbles on the floor. It was possible to follow a low streamway, carrying little water on this occasion, but showing signs of higher flows in the recent past. Two squeezes were encountered, the first under a flowstone arch and the second in a rockpile, before the passage became too small to follow. This was the end of what had seemed to be such a promising find. Serena declined to join me to see for herself – a very wise decision, no doubt prompted by my complaining as I struggled with the tonsil, not to mention the filthy nature of the whole cave. This is yet another cave that I doubt will be frequently visited.

I later found a report of a cave found in Big Doline (*Spiel* 308) by Jeff Butt and Arthur Clarke. However, the description of the cave differs somewhat from that of Tonsil Pot. A return trip with Arthur may be needed to check whether there are two caves in this doline or one. We saw no sign of another cave, but anything is possible in the dense vegetation in this area.

An adjacent doline contains Rotten Log Hole, IB-26 Hooks Hole, IB-41Leech Pot and IB-42 Mudraker. It also contained an unnamed cave tagged IB-163. We stumbled across all of these other caves while looking for Rotten Log Hole. Eventually we found it, a mere five metres from where we had dumped our packs!

The entrance to Rotten Log Hole is quite impressive, which makes you wonder why we didn't see it earlier, and has the great merit of being easily rigged from adjacent karst features. The entrance pitch is an open ten-metre free-hang, leading to a ramp down to a boulder filled chamber. By climbing down under the boulders, a stream passage can be followed for some distance, but this ends in apparently impenetrable rock fall. There are many dolerite cobbles in the stream passage. A high level passage above the boulders looked promising, but it proved to be blocked after a short distance. It can be surmised that the stream in Rotten Log Hole may flow into the lower levels of Hooks Hole – the direction looks about right and the distance between the caves is only a few metres.

Serena pushed the stream passage as far as she could, but it was not going to be a goer without substantial excavation. After returning to the surface, de-rigging and packing up, darkness was approaching and it was time to go. By heading downhill rather than the way we came, we soon intersected the track to IB-1 Revelation Cave and were back at Blaineys Quarry in a short time. In fact, the log lying across the top of the IB-22 Con Cave doline can be seen soon after leaving the Rotten Log doline. This is an easily accessed area and there appears to be enormous potential for further discoveries.

JF-287 Coprocessor, JF-289 (JF-X57) Bone Cleft

Alan Jackson

3 June 2007

Party: Gavin Brett, Alan Jackson

This was Gavin's first caving release since contributing to the over population of the globe. We headed up to JF-287 Coprocessor to drop the pitch. Some handy naturals got me down the ~5 m pitch to an unpromising looking floor. Some excavation led to some minor extensions, both with faint drafts, but nothing promising remained. A crappy hand sketch has been sent to the archives for future reference.

With time left in the day we toddled over the ridge to JF-289, the cave Janine had located on our first foray into this area back in January 2006 (see *SS*352 – page 13). When we found this cave we noticed a piece of old orange tape tied around a projection on the left wall of the entrance. The tight rift entrance turned out to be free-climbable but we used a rope just in case. The ~6 m entrance pitch was followed by a series of short climbs to a bone filled gravel bed at the bottom. Many of the bones were very large

(kangaroo/large wallaby?). A small rock cairn had been erected here by the previous explorers. We then headed out to the car.

After a few days of mulling over JF-289, I remembered reading a 'cave report' that I'd seen in the latest version of the electronic archive. There are two cave reports filled out by Peter Ackroyd et al. (including the one and only Ken Hosking) following a VSA trip to Tasmania in April 1988. They had been doing some surface bashing in the vicinity of Ice Tube and had discovered two new entrances which were assigned the JF-X numbers 56 and 57. JF-X57 was called Bone Cleft and Peter described the cave as '*cleft in side of hill leads via 3 downclimbs to water washed floor scattered with bones … many skulls and large bones. Ent. marked with orange tape.*' The plan and vertical section sketches match up beautifully with JF-289. I think it is therefore reasonable to claim that JF-289 is synonymous with JF-X57 Bone Cleft. Another loose end tied off!

JF-225 Three Falls Cave

Serena Benjamin

11 June 2007

Party: Serena Benjamin, Matt Cracknell

With likely participants thin on the ground, Matt and I headed up to Three Falls which is a cave I've wanted to check out for a while. An ominously upgraded Westfield Road sped up our trip to the usual parking spot. Not a tree fall in sight. After interpreting the differing trip reports we had on hand we sorted out our gear and stuffed it into our three packs. Climbing down into the Three Falls entrance at the base of the doline's dramatic cliff line we quickly came to the squeeze marked on the map. A pack-pass through here and we continued our crawling/scrambling descent through interestingly formed and in some places beautifully decorated passage. Progress was halted at the start of the vertical bits, beginning with a 10 metre handline. Matt rigged this off a large boulder which itself had to be negotiated (i.e. squeezed over) to access the climb down. At the base of this was a small ledge at the top of the 11 metre pitch. A surprise to us both when we'd read the more recent trip report was that this cave had bolts in it. We'd both previously been under the illusion that it was all naturals. After a quick inspection Matt baulked at the idea of using the bolts at this pitch, instead rigging a trace off a large boulder further up a small side passage and using the handline rope as a back up. Unfortunately for me the ease with which the person rigging and anyone following is able to descend can be vastly different. After some creative problem solving (and a fair bit of swearing) I got to the bottom some 20 minutes or so later. A precipitous climb down past where the stream reappears and we were at the top of the next pitch. The bolts looked better (usable) here so Matt went ahead, placing a redirection in where the pitch goes round the corner. Over the roar of the waterfall in the next chamber my single-functioning brain cell couldn't comprehend Matt's call of 'on the ledge'. Yes the redirect on the ledge was proving to be a bit of a pest but when I got to the bottom I discovered he meant I should have swung onto a ledge now a couple of metres above me. With Matt's assistance in avoiding the waterfall I prussiked back up and pendulumed across to the ledge. Unable to return the favour Matt's interpretation of the pendulum experience seemed to involve aiming for the waterfall! Behold the virtues of the plastic suit. Once in the large lunchroom chamber we had a mini-feast before deciding we'd explore down to the top of the 40 metre pitch to check the bolts there and then leave the cave rigged for a return in the near future. Matt found a climb down through the rockfall and rigged a 'handline'. From this next chamber I took the lead, climbing down into the streamway and the top of the final pitch. On the way out Matt wanted to tidy up some of the rigging so he came up behind to work on the redirect. I came within a hair's breadth of plummeting to my doom on the climb before taking my time to first get up the next pitch and secondly to re-rig it. Cruising out of the cave from here we emerged into what at first looked like a downpour but when in it turned out to be just mizzle. It would have been ironic to have come out of the cave which, contrary to my belief given its name, was reasonably dry, only to become soaked outside. It wasn't the snow I'd half expected. The thought of hot soup was calling so after dropping Matt off I made it home having achieved an unbelievable clear run of green lights right throughout Hobart.

Other Exciting Stuff

Put your helmet back on again Alan as this comes at you!

Amy Robertson

Alan has taken issue with the expense of ASF membership and his perception that it has a significant effect on our membership base.

Since the start of 2005, we have issued a total of 17 prospective ASF-STC memberships. Two of the memberships were repeats, so the total number of people commencing prospective memberships is 15.

Of these, six have continued into an ongoing membership – five as singles and one as a student. That's 40% retention, and from what I understand from mainland clubs, that's pretty good.

Two prospective memberships (14%) are still current, and at least one of these is likely to continue through into an active ongoing membership.

Of the 46% that haven't been retained, about half have UTAS email addresses. All but one commenced their prospective membership at trips run in November 2005, and there has actually been no recruitment of ongoing members from those trips.

There was one additional prospective member who was already an ASF member, who I don't count as being affected by STC's charging of ASF fees – but then again, who illustrates that we do also recruit members from other ASF clubs interstate. (I'm another - earlier - example of the

valuable (?!?!?) resource that can be recruited through ASF links interstate.)

So, how does Alan's argument stack up statistically? The club's retention of prospective members is not bad, and those who aren't retained – while they do tend to be uni students – are actually more likely to drop out if they start through a designated 'beginner' trip.

Maybe the club should stop running beginners' trips? I think that Serena and Matt would both agree that a significant level of hassling and organisation goes into 'dragging' prospectives along on those trips, and that the majority of these people don't continue for reasons that largely reflected their motivation. Perhaps money is a factor, but then again when you look at the $61-68 ASF cost in the context of what it costs in petrol to get to the cave ($5-10), gear hire ($8-17), and lost wages from a day of part-time work ($50-ish??), the ASF fee isn't that huge. STC's own fees are an additional $4-17, and compare favourably with mainland clubs that charge between $5 and $45 or more annually.

I do agree with Alan that we should expect value for our ASF fees and that if this is an issue then we should do something about it. But let's do something, not whinge and nag from the sidelines or threaten to take our bat and ball and go home. We have a president, an ASF rep, and a committee who have the capacity to liaise with ASF effectively and ask targeted questions to get clear answers that let us make an informed and considered decision. And, we have a broader caving community throughout Australia who are likely to share the same questions and concerns as us.

Helmet off again Alan, I'm done. Let's continue to encourage motivated beginners and enjoy our caving.

Measuring temperature in a deep cave, JF-270 Tachycardia

Matt Cracknell

INTRODUCTION

Tachycardia (JF-270) is a deep cave (~375 m) located within the Junee-Florentine karst area of Tasmania. During a trip to the bottom of this cave a range of climate variables were measured using an electronic weather meter. Measurements of air temperature (ºC), Relative Humidity (%), wind speed (m/s) and dewpoint temperature (ºC) were recorded. Although Relative Humidity values and dewpoint temperature have been omitted from the following data analysis.

The aim of this exercise was to assess the feasibility of conducting cave climate measurements with a portable electronic weather meter and to determine if ambient temperature is a function of depth within a deep cave system.

METHODS

A total of 42 basic climate measurements at 14 randomly selected locations (depths) were recorded within Tachycardia over a six hour period using a 'KESTRAL 3000 Pocket Weather Meter'. This includes one reading taken on the surface within the boundaries of the entrance doline. For each individual measurement the time at which the measurement was taken and four climate variables were recorded (includes manufacturer's specifications); air temperature (ºC ±1ºC), dewpoint temperature (ºC ±3ºC), Relative Humidity (% ±3% of scale), and wind speed (m/s ±3% of reading). Descriptions of the approximate location of the measurements within the passage and its characteristics were also noted. At six of the 14 locations that climate was recorded multiple readings were achieved.

At each location measurements took place the 'KESTRAL' was hung by a cord on a cave wall projection or a rebelay. Each measurement was conducted for >= 2 minutes. While measurements were taking place the person recording the data remained as far away as practical from the instrument and avoided making rapid movements. This was done in an attempt reduce the effects of body temperature on the climate measurements. The 'hold' function was used when it was time to record observed values as it was necessary to handle the 'KESTRAL' in order to do so. This function stores the readings displayed at the time it was activated. This is most important for temperature, Relative Humidity, and dewpoint temperature readings as they are all measured in real time (wind speed is time averaged by the 'KESTRAL' from when it is turned on).

An estimation of the depth (m ±5 m) that measurements occurred at was made by locating relevant areas on the JF-270 true elevation map (Jackson 2006). For depths with multiple readings the time in minutes that had passed since the first reading was calculated. A depth vs. temperature diagram and for the stations with multiple readings a temperature vs. time diagram was produced from the data set.

RESULTS

Table 1 displays data and comments relevant to this report collected from the 42 climatic data measurements. Figure 1 shows maximum (all locations where climate variables were measured) and minimum (locations where multiple measurements occurred) temperatures as a function of depth. This graph has been placed adjacent to the true elevation section of JF-270 that includes the locations of all sites where climate variables were measured.

On the day that the measurements were taken (11/03/2007) clear skies and clam weather conditions were recorded throughout southern Tasmania, a slow moving high pressure was positioned over Tasmanian and a low pressure system and associated cold front was approaching from the west (BOM, 2007). A temperature of 11.4ºC was recorded on the surface in the JF-270 entrance doline.

A mean wind speed of 0.5 m/s over a period of approximately two minutes was recorded just inside the entrance. Air was observed to be flowing into the cave which is unusual (A. Jackson pers. comm. 2007). This was the only air flow detected over the course of the experiment.

The first measurement at every location was the maximum temperature recorded for that location. The highest maximum temperature was 15.2ºC recorded in a confined space within a rock-pile at the base of the large "Upper Breakdown Chamber". All minimum temperatures were the last measurements to be recorded at locations where multiple measurements were achieved except at a depth of 320 m where the minimum recorded temperature was 7.7ºC at eight minutes and 7.9ºC two minutes later. The

lowest minimum temperature recorded was 7.1ºC at the bottom of a deep shaft within 5 m of the lowest point of the cave (~370 m below the entrance).

Figure 2 shows temperature plotted as a function of time since the first measurement at each location where multiple measurements were taken over a period longer than 12 minutes. At depths of 200 m, 250 m and 370 m a base level temperature of 7.7ºC, 7.7ºC and 7.1ºC was reached after less than 20 minutes respectively. At a depth of 150 m the minimum temperature recorded was 7.4ºC. The data suggests that the base level temperature may not have been reached after 20 minutes at this location.

Table 1: JF-270 Climate Measurements

11/03/2007

Measurement	Depth (m)	Time (hrs)	Minutes since 1st measurement at location	Mean wind speed (m/s)	Temp (ºC)	Location	Comments
1	0	1029	0	0.0	11.4	surface doline	Fine and sunny day
2	5	1034	0	0.5	11.2	entrance	sml chamber, airflow in
3	25	1042	0	0.0	12.9	top of pitch 1	lrg chamber
4	80	1102	0	0.0	15.2	The Dig	confined space
5	90	1119	0	0.0	14.7	Gypsyland	confined space
9	110	1134	0	0.0	13.2	Starburst junction	sml chamber
7	130	1148	0	0.0	11.2	top of pitch 2	water
8	150	1227	0	0.0	10.3	top of pitch 3	water trickling/pools
9	"	1232	5	0.0	8.9	"	"
10	"	1236	9	0.0	8.5	"	"
11	"	1238	11	0.0	7.9	"	"
12	"	1240	13	0.0	7.8	"	"
13	"	1242	15	0.0	7.8	"	"
14	"	1244	17	0.0	7.6	"	"
15	"	1247	20	0.0	7.4	"	"
16	190	1320	0	0.0	11.2	aven above pitch 4	aven
17	200	1341	0	0.0	9.4	top of pitch 4	water
18	"	1346	5	0.0	9.1	"	"
19	"	1348	7	0.0	8.6	"	"
20	"	1352	11	0.0	8.9	"	"
21	"	1355	14	0.0	7.7	"	"
22	"	1358	17	0.0	7.7	"	"
23	"	1401	20	0.0	7.7	"	"
24	250	1420	0	0.0	8.6	rebelay 2 pitch 4	water in vertical shaft
25	"	1423	3	0.0	8	"	"
26	"	1425	5	0.0	7.8	"	"
27	"	1427	7	0.0	7.9	"	"
28	"	1431	11	0.0	7.7	"	"
29	"	1434	14	0.0	7.7	"	"
30	300	1453	0	0.0	8.8	rebelay 4 pitch 4	vertical shaft
31	"	1456	3	0.0	8.1	"	"
32	"	1500	7	0.0	7.9	"	"
33	320	1508	0	0.0	9.7	rebelay 5 pitch 4	"
34	"	1510	2	0.0	9	"	"
35	"	1513	5	0.0	8.6	"	"
36	"	1516	8	0.0	7.7	"	"
37	"	1518	10	0.0	7.9	"	"
38	370	1537	0	0.0	8.1	bottom of pitch 4	base of vertical shaft
39	"	1542	5	0.0	7.7	"	"
40	"	1546	9	0.0	7.4	"	"
41	"	1552	15	0.0	7.1	"	"
42	"	1623	46	0.0	7.1	"	"

DISCUSSION

The maximum temperatures measured within Tachycardia show that an increase in depth below the entrance did not result in a uniform decrease in temperature. In the upper sections of the cave there is an increase in maximum temperature readings with an increase in depth. This may be accounted for in the airflow conditions that were observed within the cave on the day that measurements took place. That is, there was airflow into the cave that brought (relatively) warm air from the surface to the areas of the cave close to the entrance. However it is more likely that the temperature increase in these areas is due to a climatic influence on the measurement from the person taking the measurements, either from a direct influence on the cave climate (i.e. body heat in a confined space) or on the instrument's climate (Oke, 1987; Michie, 2006).

Homoeothermic animals (includes humans) must maintain an internal core body temperature, in environments where ambient temperatures are cooler than this body temperature (i.e. Tasmanian caves) there is net heat flux from the animal to that environment (Oke, 1987). An experiment designed to measure temperatures in a tourist cave at Jenolan Caves has observed an increase in the temperature of the cave atmosphere when large groups of people move through that section of cave. The temperature fluctuations in this particular case were <0.5ºC and it took hours for the cave temperature to return to 'base level' (Thurgate, 1999). This however does not account for the fluctuations in recorded temperatures of up to 2.9ºC over periods of 20 minutes (at 150 m). It is therefore more likely that the fluctuations observed were a result of body heat influencing the instrument directly.

The 'KESTRAL 3000 Pocket Weather Meter' is a small device that while being transported through the cave was stored up the sleeve of a plastic caving suit. This provided the instrument with protection from exposure to water, mud and hard surfaces and also made it easily accessible when a suitable location to take measurements was encountered; both are important considerations when using electronic devices in the extreme environments caves present to the subterranean researcher. However this method of transport is unsuitable because the instrument is in close contact with the user for periods of time over course of the observations, thus there is a large contrast in the ambient climates that the instrument is exposed to. This results in a certain period of time before the instrument's climate has reached equilibrium with that of the climate being measured (Oke, 1987).

The only measurements that truly represented base level temperatures of the environment being measured were those that were taken within the cave after the instrument's temperature had stabilised to the temperature of the cave (i.e. after more than 10 minutes), and the single

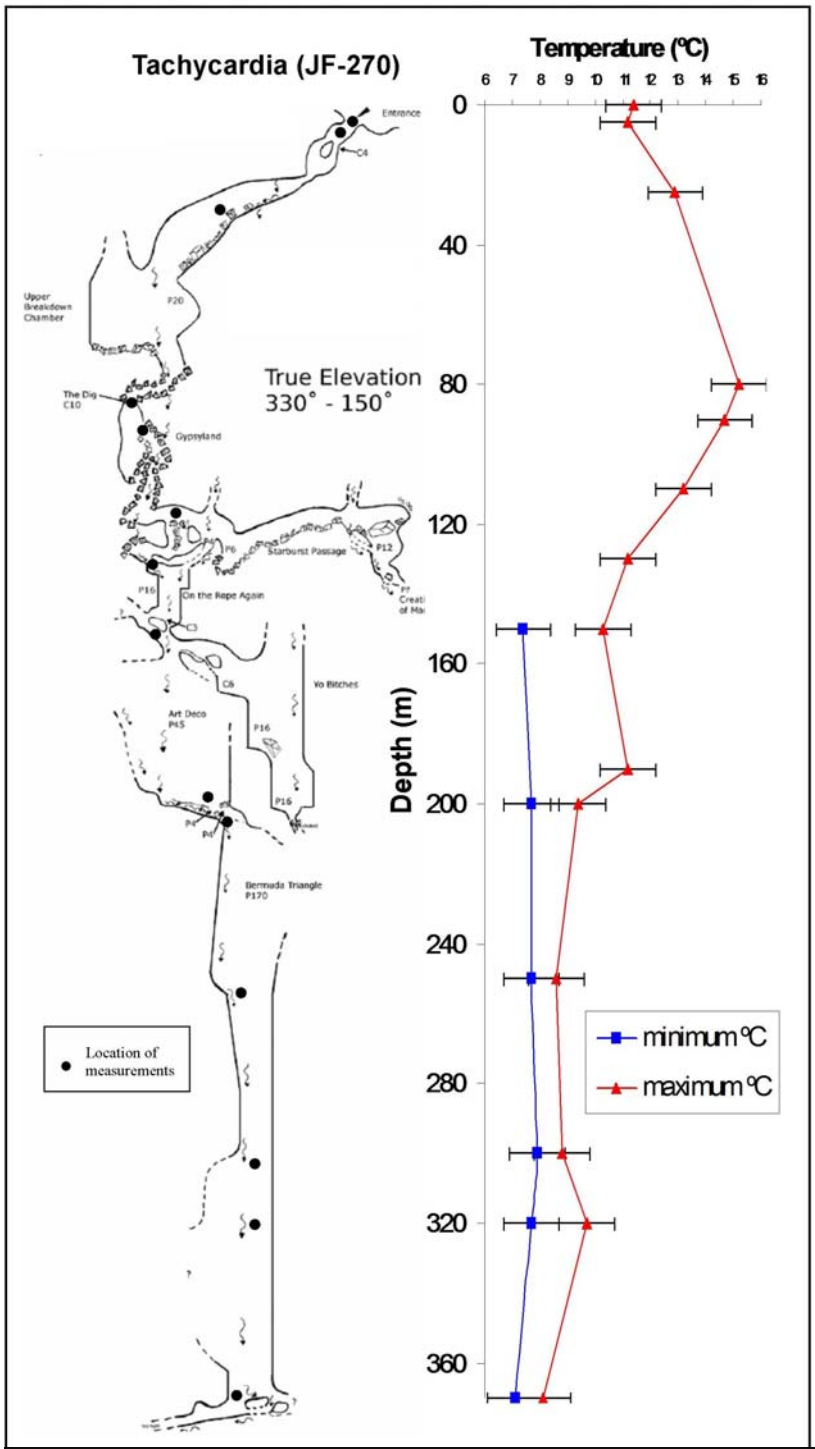


Figure 1: Location of temperature measurements and maximum/minimum recorded temperatures as a function of depth within Tachycardia (JF-270) at those locations, modified from Jackson (2006)

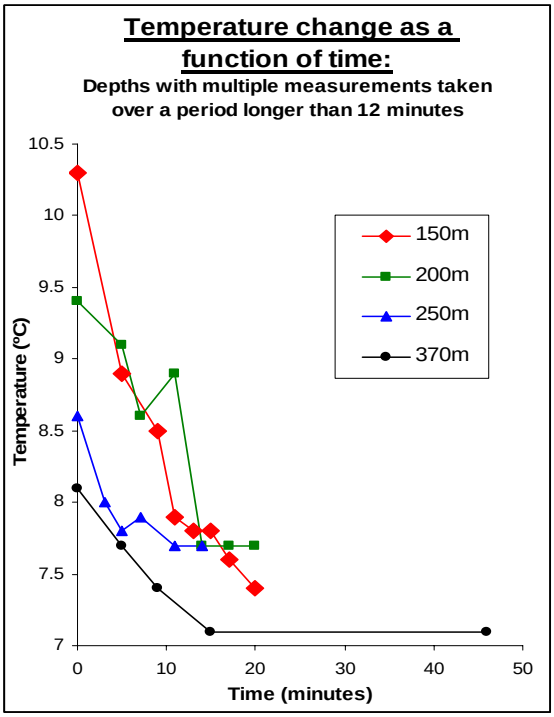


Figure 2: Temperature change as a function of time at locations where multiple measurements were taken.

measurement on the surface (see Figure 2). These 'in cave' temperatures are represented as the minimum temperature values in Figure 1. Looking at this data set there is an overall decrease in temperature with an increase in depth below the surface. Closer inspection of the data shows a slight increase in temperature with depth at the location 300 m below the entrance. This may be due to the large unexplored opening in the wall of the vertical shaft that coincides at this location. Air flow from a connection to the surface with this opening could account for the slight temperature fluctuation observed (Michie, 2006).

CONCLUSION

The data collected from this experiment can only be used to determine absolute ambient cave temperature recorded at locations where multiple measurements were taken. In this case there is no conclusive evidence to support the hypothesis that ambient cave temperatures are a function of depth as temperature readings have been influenced by the person conducting the measurements. It is safe to say that accurate climate measurements within the confines of a cave environment are difficult to achieve. It is however feasible to conduct experiments of this kind with careful planning and a knowledge of the limitations of the instrument(s) being used. Future research will need to minimise the affect of body heat on climate measuring equipment.

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A landslide in Permian and Ordovician terrain at Marble Hill

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BACKGROUND

On 4 February 2005 101 mm of rain fell[1] near Lune River in the Huon District of Forestry Tasmania and shortly afterwards cavers noticed a large landslide had formed on the northeast flank of the saddle connecting Marble Hill (to the southeast) and Moonlight Ridge (to the west). Marble Hill (476 m elevation) is located on Sheet 4818 (Leprena) at GDA 487822 5187130. Although the landslide is not in state forest it was investigated because state forest occurs nearby and an analysis of the landslide was likely to provide information on the risks that might be incurred by harvesting similar terrain. The landslide was visited on 17 January 2007.

OBSERVATIONS

Marble Hill is mapped as Permian glaciomarine rocks (pebbly sandstones and mudstones) overlying Ordovician limestone (Hobart Geological Atlas 1:250 000 Series, Tasmania Department of Mines 1975). Several caves and sinkholes occur in the nearby limestone and the drainage pattern is complex: drainage from the northeast side of Marble Hill may flow underground to the southern side. The landslide was sketched using GPS to fix positions (Figure 1). The backwall of the landslide (Figure 2) (GDA 0486987 5187615) is a vertical scar about 10 m wide and 2 m high. Mottled silty clay with boulders is exposed in the backwall scar. The boulders consist of sandstone containing rounded and subrounded 'dropstones' typical of Permian glaciomarine sequences. The slope of the landslide from the top of the backwall scarp to the two logs spanning the landslide at its base is 27°. Its orientation (true) is 60°. Water is seeping out of the backwall soil exposure.

A large tree with a trunk >1 m diameter has fallen from its original position about 40 m upslope from the top of the backwall, leaving a depression c. 4 m wide showing gleyed (grey) soil. Southeast of this depression is the backwall scarp (GDA 486960 5187569) of an earlier landslide. This backwall scarp is about 2 m high and the associated landslide scar is 10 m wide. This old landslide, now vegetated, does not connect to the present active feature, although just upslope from where the fallen tree has impacted the ground is a fresh scarp 1 m high within the old landslide scar.

[1] Recorded at Hastings Chalet, weather station 94027, altitude 35 m.

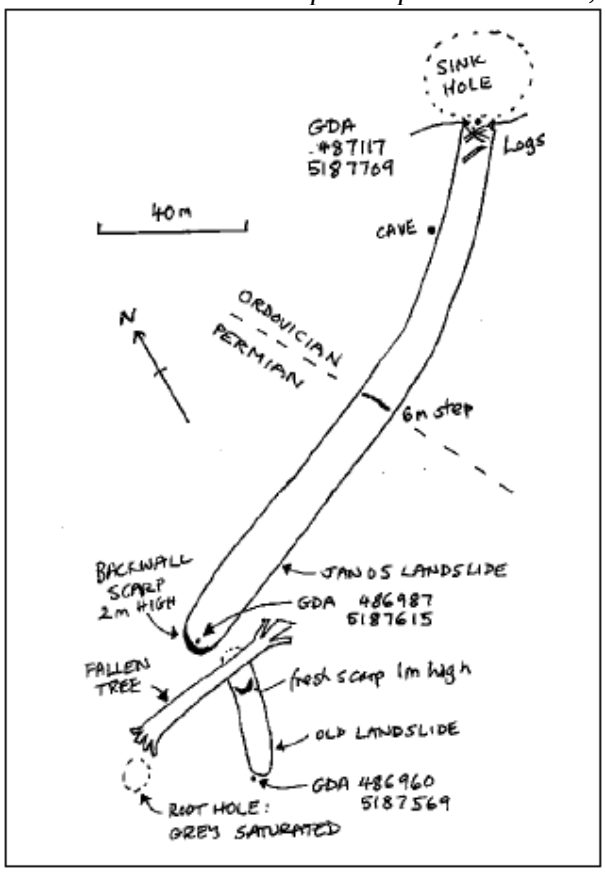


Figure 1. Sketch of landslide. All features and distances are approximate.

Figure 2. The landslide backwall.

Halfway down the landslide is a 6 m-high near-vertical 'step' of unweathered Permian rock (with dropstones) overlying Ordovician limestone. The Permian rock is jointed at 10–50 cm intervals but is impermeable. In this middle portion of the landslide the landslide 'channel' is about 2 m deep and 8 m wide.

The landslide ends at GDA 0487117 5187709. The total length of the landslide (horizontal distance) is 160 m, which is 180 m on the ground surface (Figures 3 and 4). The landslide is adjacent to a cave entrance on its northwest side and ends in a sinkhole in front of which several large tree trunks have accumulated. There is no accumulation of debris at the end of the landslide and the debris appears to have entered the sinkhole and the underlying cave.

Figure 3. Looking down the landslide from the top of the backwall.

DISCUSSION

Classification

In the Australian Geomechanics Society classification (AGS Subcommittee 2002) the landslide is an *Active Confined Single Rapid Wet Debris Flow*.

Cause

There was heavy rain in January 2005 which is likely to have saturated the ground. Saturation of the soil will have been aided by the impermeable nature of the massive Permian rocks about 2–3 m below the surface of the soil. While it is quite possible that the saturated soils on a slope of 27° started to move purely as a result of gravitational forces, it is also possible that the collapse of the large tree at the head of the landslide had a sufficient impact, when it hit the ground, to initiate movement: the local scarp 1 m high upslope of the tree trunk is certainly a result of the tree falling and shock waves may have been the trigger for the larger landslide too.

Although solution of the limestone rocks may have played a part in oversteepening the slopes at the Permian/ Ordovician contact, it is concluded that the nature of the

limestone and its karst features have not caused the present landslide.

Risks and implications for forestry operations

The landslide is at risk of being reactivated by heavy rain. It can be expected that headward erosion of the backwall scarp and further entry of debris into the sinkhole and cave as the northeast end of the landslide. There is also a slight risk of entry of debris into the cave on the northwest flank of the landslide; this risk is only slight because the cave entrance is now higher than the floor of the adjacent landslide channel.

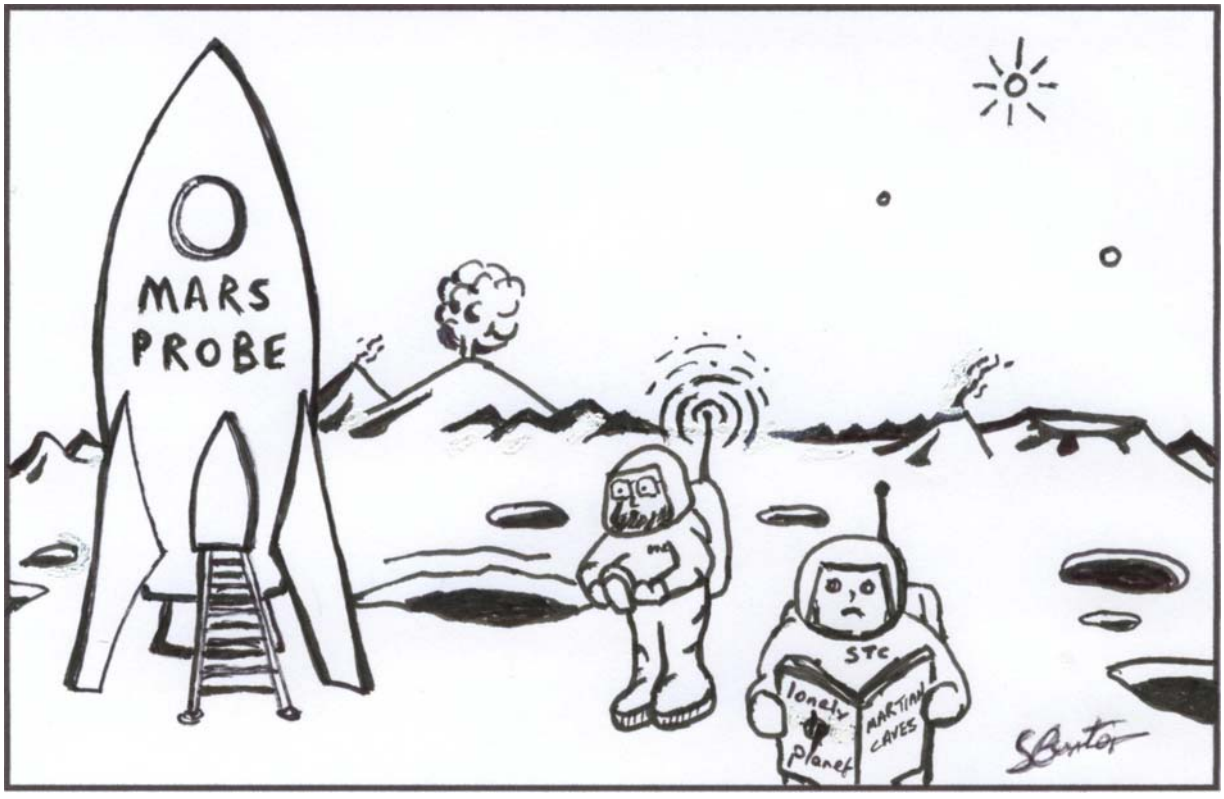
The 'landslide threshold slope angle' for Permian rocks, above which landslides can be expected, is 15° (Code, table 7). This landslide confirms that steep slopes on Permian glaciomarine sediments are landslide prone. Similar Permian rocks occur in the Styx and Tyenna catchments as well as elsewhere in the Huon district. As the landslide occurs on very steep slopes (27°) it does not enable the threshold angle in Table 7 to be 'fine tuned'.

[*It should be noted that this slip severely altered the entrance to IB-1 Revelation Cave and completely inundated the entrance to IB-25 Yodellers Pot, which remains inaccessible – Ed.*]

Figure 4. Looking upslope from the northeast end of the landslide.

Some people will go to the ends of the Earth to find caves.

Some people will go beyond;



"Middleton reporting, Sir.

We've found the caves but the bloody GPS doesn't work!!"

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