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Front Cover: Anthodites. Herberts Pot

Photo: Ben Lovett

Back Cover: Original Leigh Gleeson et al. (SCS) plan of Herberts Pot, with updates by

Glyn Johnson and Peter Bell

STC was formed in December 1996 by the amalgamation of three former southern Tasmanian clubs: 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

The *Spiel* this issue starts with a truly brilliant and inspired poetic adaption. It is wonderful in so many ways. If you are not familiar with the original then I strongly suggest you read it, possibly even before reading Serena's amazing piece.

We continue in this issue with the reporting on the Niggly to Growling Swallet connection, and equally newsworthy further discoveries in Niggly. This time with actual trip reports and hard data, rather than the media superficialities covered in SS 432.

It's not all about Niggly. Other caving is happening as well. Several trip reports are included in this issue. Sometimes we all seem to get dazzled by the bright lights of new, big discoveries, however caving is much more than major breakthroughs, exciting and newsworthy and historymaking as they are. For caving clubs to survive and flourish over the long term, and particularly through the low times which always occur, a sense of community is needed. A commitment to the core business of caving. Some would argue that IS exploration but I beg to differ. Exploration doesn't happen in a vacuum. That requires a variety of people and caving interests, and in particular those that stay in the club over many years, or decades; to hold the sense of history and knowledge together. Cavers willing to train new members, take beginners on trips and encourage and nurture their development, run fun caving trips for a variety of abilities, fitness levels and interests, do the scientific work and surveying of known caves, hold and organise the club's written history, do the mundane bureaucratic stuff and generally keep a sense of purpose and community going. These people are the life-blood of the club, without them this club, and any other, will collapse as soon as whatever current exciting stuff wanes. The short-term thrill seekers, and passage baggers, come and go. A point worth remembering.

Stuff 'n' Stuff

- This is really funny...at least it appeals to my sense of humour. Arthur Clarke reports: If you go down to the woods today, you're sure of a big surprise! Certainly not what Gabriel Kinzler was expecting when out of the woods someone reached for his helmet trying to turn off his light. He was in the company of Chris Sharples and Liz McCutcheon returning from the new H-11 and surrounds, perhaps making a slight detour being attracted to the bizarre sound of 2000 squawking ravens outside Newdegate Cave, and not knowing they were walking into a Dark Mofo event: Hrafn Conversations With Odin... the last of three days of freebies for local residents before the main event started the following week, participants were meant to be sitting in silence in the dark cold forest listening to ravens.
- Andy Spate, a long-time Australian caver, currently resident in Hobart, has been awarded a gong in the Queen's Birthday Honours list. The award is "For significant service to conservation, particularly for caves and karsts" (sic-Ed). Our local paper, the Mercury, reports in just one paragraph... The award is an AM. Full details are at the official

- website itsanhonour.gov.au and also at honours@gg.gov.au
- Bill Nicholson really started something when he decided to research this tragic event for its 50th anniversary; The coroner has no record and the Police can't find theirs!

"Police seek relatives as part of review of 1969 disappearance of John Boyle

Tasmania Police is reviewing the disappearance of John Boyle who was last seen in Tasmania's Southwest National Park in 1969. In October 1969 Mr Boyle, who some months earlier moved from Sydney to Hobart, was part of a group exploring Mt Anne. During the exploration, Mr Boyle became separated from the other group and sadly, despite an extensive search, he was not located, and no trace of him has been located since. At the time he went missing, Mr Boyle was 26-years-old. As part of the review, Tasmania Police would like to speak with relatives of Mr Boyle. He was the son of Edward Boyle and brother of Ken Boyle who at the time were living at Fairfield in New South Wales. "Given the passage of time since Mr Boyle's disappearance a report is being prepared for the Coroner and, as such, we're reaching out across Australia with the aim of finding a sibling, a cousin or any other relative," said Sergeant John Delpero.

Relatives of Mr Boyle are asked to contact Tasmania Police on (03) 6173 2426 during business hours."

Update to this bulletin; a family member has apparently contacted Police.

• The date has been set for the southern Tasmanian cave rescue exercise – 30 November 2019.

The rough plan will be a single long day underground with a patient extraction scenario and associated technical rigging, stretcher carrying, communications and general logistics. Venue will most likely be Growling Swallet entrance series (between first sump and entrance), so minimal rope work/SRT skills required. 1 December will be clean-up day. If there is sufficient demand to run any surface refreshers of basic rigging and comms techniques the weekend before, or earlier, then I'm happy to facilitate that but at this stage none is scheduled. Save the date for now and there'll be more details to come later. *Alan Jackson*.

 Craig Challen is giving a free lecture at UTAS on Saturday 10 August at 5 pm. Tickets are free, but need to be booked.

The blurb says: "Joint Australian of the Year Craig Challen SC OAM explores how a love of investigation and environment enabled him to help others. Craig will share his fascinating story from the depths of the 2018 Thai cave rescue mission and participate in a panel discussion about extreme environments and emergency medicine and response."

Check out the link below if you are interested in going.

https://tinyurl.com/y5p97msp

The Hunting of Depth in the Dark

(With apologies to Lewis Carroll) **Serena Benjamin**

FIT THE FIRST

The Landing

"Just the place for some depth!" Alan joyfully cried, as he surveyed the cavern with care. Supporting his team, but sometimes snide, with his survey book waving in air.

"Just the place for some depth! I have now said it twice. That alone should encourage my crew.

Just the place for some depth! I have now said it thrice.

What I tell you three times is true."

The crew was complete: all shod in gumboots, also well stocked with foods.

Janine, brought in to smooth out their disputes and Serena, to help tote their goods.

Petr, with his strength, graced us with his presence, perhaps carrying more than his share.

Plus Stefan engaged for his science-minded essence, had the whole of their photography in his care.

There also was Stephen, who liked things high-tech, with odd gadgets, whose numbers would grow. "This," Alan said, "if not kept in check, could weigh down the mission below."

Andreas was famed for the number of things he forgot when he signed up for such cave trips: his trog suit, his Stop, all his 'biners and things, and thermals coloured bright to transfix.

He had forty-two cavepacks, all carefully packed, with his name clearly writ in a sentence. But, since he omitted to mention the fact, they were all left behind at the entrance.

The loss of his thermals hardly mattered, because he had seven coats on when he came. With three pair of boots — but the worst of it was, he had wholly forgotten his name.

He would answer to "Hi!" or to any loud cry, such as "Magoo!" or "Fritter my wig!"

To "What-you-may-call-um!" or "What-was-his-name!"
but especially "Thing-um-a-jig!"

While, for those who preferred a more forcible word, he had different titles from these. His intimate friends called him "Anchor-ends," and his enemies "Toasted-cheese."

"His form is ungainly, his intellect small" (so Alan would often remark).
"But his courage is perfect! And that, after all, is essential hunting depth in the dark."

He would joke with drop-bears, returning their stare with an impudent wag of the head.

And he once took a walk, paw-in-paw, with a gummi bear, "Just to keep up its spirits," he said.

He came as an Austrian, but owned, when too late (and it drove poor Alan half-mad) he loathed to survey — for which, I may state, made the other bold cavers quite sad.

The last of the crew needs description in breadth, though he looked an incredible dunce. He had just one idea, but that one being "Depth," good Alan engaged him at once.

He came as a Frenchman, but gravely declared, when they'd been caving together a week, he often dislodged rocks; Alan looked scared, and was almost too frightened to speak.

But at length Alan explained, in a tremulous tone, the cave had only one boulder pile, not too broad, which he felt would be wise to explore on his own; Any death or injury would be deeply deplored.

Stephen by chance who heard the remark, protested, with tears in his eyes.

Not even the thrill hunting depth in the dark could atone for that dismal surprise!

He strongly advised that Gabriel should be on a caver's apprenticeship. But Alan declared that would never agree with the plans he had made for the trip.

Navigation was always a difficult art, though with only one Disto and one book, he feared he must really decline, for his part, that yet another cave trip be undertook.

Stephen's best course was, no doubt, to procure a second-hand boulder-proof suit.

And so Andreas advised him to ensure Gabriel went first down any chute.

Yet still, ever after that sorrowful day, when Gabriel was standing nearby, Stephen kept looking the opposite way, and appeared unaccountably shy.

FIT THE SECOND

Alan's Speech

Alan himself many praised to the skies: Such a carriage, such ease and such grace! Such solemnity, too! One could see he was wise, the moment one looked in his face!

He had brought a large map representing the cave, without the least trace of a plan.

And the crew were much pleased that as surveying slaves this was a map they could all understand.

"What's the good of 2D plans, profiles or cave passages dry, LRUD's, passage detail, and plot lines?" so Alan would cry, and the crew would reply

so Alan would cry, and the crew would rep "They are merely conventional signs!"

"Other maps are such shapes, with their pitches and landscapes!

But we've got our brave Captain to thank" (So the crew would protest) "that he's brought *us* the best A perfect and absolute blank!"

This was charming, no doubt; but they shortly found out that the Captain they trusted so well had only one notion for his surveying motion, and that was to berate people and yell.

He was thoughtful and grave, but the orders he gave were enough to bewilder the crew. When he cried "Survey a backsight node, but keep it out of backsight mode!"

what on earth were the surveyors to do?

Then the forward sights got mixed with backwards sometimes.

A thing, as Alan remarked, that frequently happens in caving confines, when the surveying is, so to speak, "farked."

But the principal failing that occurred in the surveilling, and Alan, perplexed and distressed, said he had hoped, at least, when what they drew as due East

that the cave would not trend due West!

But the danger was past—they had landed at last, with their DistoXs, dive gear, and cave bags. Yet at first sight the crew were displeased with the view which consisted of chasms and crags.

Alan perceived that their spirits were low, and repeated in voluminous tone some obscene jokes he had kept for a season of woe but the crew would do nothing but groan.

He served out lolly snakes with a liberal hand, and bade them sit down on Mt Niggly beach. And they could not but own that their Captain looked grand,

as he stood and delivered his speech.

"Colleagues, cavers, and troglodytes, lend me your ears!" (They were all of them fond of quotations.)
So they ate lollies to his health, and they gave him three cheers,

while he served out additional rations.

"We have caved many months, we have caved many weeks, (in many different caves you may mark), but never as yet" ('tis your Captain who speaks) "have we caught the least glimpse of the deepest depth in the dark!

"We have caved many weeks, we have caved many days, (in Tachy, Ice Tube and KD I allow), but the deepest depth in the dark, on which we might lovingly gaze, we have never beheld till now!

"Come, listen, my colleagues, while I tell you again the five unmistakable marks by which you may know, wheresoever you go, how to seek genuine warranted deepest depths in the dark. "Let us take them in order. The first is good taste, requiring colourful stuff, not too hip.
This includes a trogsuit, often baggy at waist, to be held up by harness and alloy clip.

"Those with a habit of getting up late you'll agree, are less likely to achieve it I say.

Thus breakfast at Banjo's, perhaps with some tea, also provides goods for the rest of the day.

"The third is a willingness to take things in jest, should you happen to venture on one. Otherwise caving with me could leave one deeply distressed, as I'm fond of making a pun.

"The fourth is a fondness for mud it seems, which is a constant thing that's about.

Some believe it adds to the beauty of scenes — a sentiment open to doubt.

"The fifth is ambition. So it would be right to say when rigging a cave from scratch, that, when the cold truly does start to bite, you may easily meet with your match.

"For, although common depths do no manner of harm, yet, I feel it my duty to say, some are Boojums —" Alan broke off in alarm, For Andreas had fainted away.

FIT THE THIRD

Andreas's Tale

They roused him with muffins. They roused him with ice; they roused him with mustard and cress; they roused him with jubes and judicious advice; they set him conundrums to guess.

When at length he sat up and was able to speak, his sad story he offered to tell.

And Alan cried "Silence! Not even a shriek!" and excitedly sat down as well.

There was silence supreme! Not a shriek, not a scream, scarcely even a howl or a groan, as the man they called "Ho!" told his story of woe in an antediluvian tone.

"My father and mother were honest, though poor —"
"Skip all that!" cried Alan in haste.
"If soon we don't embark, there's no chance of depths in the dark.
We have hardly a minute to waste!"

"I skip many years," said Andreas, in tears, "and proceed without further remark to the day when you took me onto this cave trip, to help you in hunting depth in the dark.

"A dear uncle of mine (after whom I was named) remarked, when I bade him farewell —"
"Oh, skip your dear uncle!" Alan exclaimed, as frustrated, he started to yell.

"He remarked to me then," said that mildest of men,
"if your depths be depths, that is right,
sketch the cave by all means — both plan and profile
scenes,

but ensure you have a working light.

"'You may seek it with DistoX's, and seek it with care; you may hunt it with survey legs and rope; you may break the record with a bit of dare; deepening cave passages with increasing slope —"

("That's exactly the method,") Alan bold in a hasty parenthesis cried. ("That's exactly the way I have always been told that the capture of depths should be tried!")

"'But oh, beamish nephew, beware of the day. If your depth be a Boojum! For then you will softly and suddenly vanish away, and never be met with again!

"It is this, it is this that oppresses my soul, when I think of my uncle's last words: and my heart is like nothing so much as a bowl brimming over with quivering turds!

"It is this, it is this —" "We have had that before!" Alan indignantly said.
And Andreas replied "Let me say it once more.
It is this, it is this that I dread!

"I engage with the depths in the dark in dreams that are stark

In a dreamy delirious fight.

I sketch plan and profile scenes, though somehow it seems, this is hampered by the magnet on my Scurion light.

"But if ever I meet with a Boojum, that day. In a moment (of this I am sure), I shall softly and suddenly vanish away and the notion I cannot endure!"

FIT THE FOURTH

The Hunting

Alan looked uffish, and wrinkled his brow. "If only you'd spoken before! It's excessively awkward to mention it now, with the depth, so to speak, at the door!

"We should all of us grieve, as you well may believe, if you never were met with again.
But surely, my man, when this caving trip began, You might have suggested it then?

"It's excessively awkward to mention it now as I think I've already remarked."

And the man they called "Hi!" replied, with a sigh, "I informed you the day we embarked.

"You may charge me with murder or want of sense (we are all of us weak at times) but the slightest approach to a false pretence was never among my crimes! "I said it in Austrian; I said it in Dutch; I said it in German and Greek. But I wholly forgot (and it vexes me much) that Australian is what you speak!"

"'Tis a pitiful tale," said Alan, whose face had grown longer at every word:
"But, now that you've stated the whole of your case, more debate would be simply absurd.

"The rest of my speech" (he explained to his men)
"you shall hear when I've leisure to speak it.
But the depth record's at hand, let me tell you again,
'tis your glorious duty to seek it!

"'To seek it with DistoX's, and seek it with care; to hunt it with survey legs and rope; to break the record with a bit of dare; deepening cave passages with increasing slope.

"For the depth's a peculiar creature, that won't be sought in a commonplace way.

Do all that you know, and try all that you don't.

Not a chance must be wasted to-day!

"Though none expects it — I forbear to proceed.

'Tis a maxim tremendous, but trite,
and you'd best be unpacking the things that you need
to rig yourselves out for the fight."

Then Stefan endorsed the scientific prospectives, and took a photo or two for notes.

Andreas with care combed his beard and hair, and shook the cave dust out of his coats.

Gabriel and Serena calibrated the Disto as an aid, each trying to do it in turn.
But Stephen sat eating Shapes, and displayed no interest in the concern.

Janine sat and ferociously planned a novel way of surveying but froze. When looking at Petr she saw that with quivering hand he was snorting cave mud out of his nose.

But Gabriel turned nervous, and dressed himself fine with yellow thermals and a muff; said he felt it exactly like going to dine. Which Alan declared was all "stuff."

"Introduce me, now there's a good fellow," he said, "if we happen to meet the depth together!"

And Alan, sagaciously nodding his head, said "That must depend on the cave weather."

Stephen went simply galumphing about, at seeing Gabriel so shy.

And even Andreas, though stupid and stout, made an effort to wink with one eye.

"Be a man!" said Alan in wrath, as he heard Stephen beginning to sob. "Should we meet with a Jubjub, that desperate bird, we shall need all our strength for the job!"

FIT THE FIFTH

Stephen's Lesson

They sought it with DistoX's and sought it with care; they hunted it with survey legs and rope; they tried to break the record with a bit of dare; deepening cave passages with increasing slope.

Then Stephen contrived an ingenious plan for making a separate sally and had fixed on a spot unfrequented by man, a dismal, squeezy and desolate valley.

But the very same plan to Gabriel occurred: He had chosen the very same place. Yet neither betrayed, by a sign or a word, the disgust that appeared in his face.

Each thought he was thinking of nothing but "depth in the dark"

and the glorious work of the day and each tried to pretend that he did not remark that the other was going that way.

But the valley grew narrow and narrower still, and the mud got darker and colder, till (merely from nervousness, not from good will) they marched along shoulder to shoulder.

Then a scream, shrill and high, rent the shuddering sky, and they knew that some danger was near.

Gabriel turned pale and through mud began to flail, and even Stephen felt queer.

He thought of his childhood, left far far behind — that blissful and innocent state — the sound so exactly recalled to his mind a pencil that squeaks on a slate!

"'Tis the voice of the media Jubjub!" he suddenly cried (this man, that they used to call "Dunce").
"As Alan would tell you," he added with pride,

"I have uttered that sentiment once.

"'Tis the note of the media Jubjub! Keep count, I entreat; You will find I have told it you twice.
Tis the song of the media Jubjub! The proof is complete, If only I've stated it thrice."

Gabriel counted with scrupulous care, attending to every word.
But he fairly lost heart, and outgrabe in despair, when the third repetition occurred.

He felt that, in spite of all possible pains, he had somehow contrived to lose count, and the only thing now was to rack his poor brains by reckoning up the amount.

"Two added to one—if that could but be done," he said, "with one's fingers and thumbs!" recollecting with tears how, in earlier years, he had taken no pains with his sums.

"The thing can be done," said Stephen, "I think. the thing must be done, I am sure.

The thing shall be done! Bring me paper and ink, the best there is time to procure."

Gabriel brought paper, portfolio, pens, and ink in unfailing supplies: while the rest of the cavers waited for these two media tarts again, and watched them with wondering eyes.

So engrossed was Stephen, he heeded them not, as he wrote with a pen in each hand, and explained all the while in a popular style which Gabriel could well understand.

"Taking three hundred and ninety five as the subject to reason about —
a convenient number to state —
we add seven, and ten, and then multiply out
by one thousand diminished by eight.

"The result we proceed to divide, as you see, by nine hundred and ninety and two. Then subtract seventeen, and the answer must be exactly and perfectly true.

"The method employed I would gladly explain, while I have it so clear in my head, If I had but the time and you had but the brain. But much yet remains to be said.

"In one moment I've seen what has hitherto been enveloped in absolute mystery, and without extra charge I will give you at large a Lesson in Natural History."

In his genial way he proceeded to say (Forgetting all laws of propriety, and that giving instruction, without introduction, would have caused quite a thrill in Society),

"As to temper the media Jubjub's a desperate bird, since it lives in perpetual passion. Its taste in costume is entirely absurd; it is ages ahead of the fashion:

"But it knows any friend it has met once before.: It never will look at a bribe:
And in charity-meetings it stands at the door, and collects—though it does not subscribe."

Stephen would gladly have talked till next day, but he felt that the Lesson must end, and he wept with delight in attempting to say he considered Gabriel his friend.

While Gabriel confessed, with affectionate looks more eloquent even than tears, he had learned in ten minutes far more than all books would have taught it in seventy years.

They returned hand-in-hand, and Alan, unmanned (for a moment) with noble emotion, said "This amply repays all the wearisome days we have spent on this caving commotion!"

Such friends, as Gabriel and Stephen became, have seldom if ever been known;

in winter or summer, 'twas always the same — you could never meet either alone.

And when quarrels arose — as one frequently finds quarrels will, spite of every endeavour — the song of the media Jubjub recurred to their minds, and cemented their friendship for ever!

FIT THE SIXTH

Stephen's Fate

They sought it with DistoX's and sought it with care; they hunted it with survey legs and rope; they tried to break the record with a bit of dare; deepening cave passages with increasing slope.

And Stephen, inspired with a courage so new, it was matter for general remark, rushed madly ahead and was lost to their view in his zeal to discover depth in the dark.

But while he was seeking with DistoX and care, a Bandersnatch swiftly drew nigh and grabbed at Stephen, who shrieked in despair, for he knew it was useless to fly.

He offered large discount, he offered a cheque (drawn "to bearer") for seven-pounds-ten, but the Bandersnatch merely extended its neck and grabbed at Stephen again.

Without rest or pause — while those frumious jaws went savagely snapping around — he skipped and he hopped, and he floundered and flopped, till fainting he fell to the ground.

The Bandersnatch fled as the others appeared led on by that fear-stricken yell.

And Alan remarked "It is just as I feared!" and solemnly toned down his yell.

He was black in the face, and they scarcely could trace the least likeness to what he had been. While so great was his fright that his trogsuit turned white a wonderful thing to be seen!

To the horror of all who were present that day, he uprose in full evening dress, and with senseless grimaces endeavoured to say what his tongue could no longer express.

Down he sank in a chair — ran his hands through his hair and chanted in mimsiest tones words whose utter inanity proved his insanity, while he rattled a couple of bones.

"Leave him here to his fate—it is getting so late!" Alan exclaimed in a fright.
"We have lost half the day. Any further delay, and we shan't deepen this cave before night!"

FIT THE SEVENTH

The Vanishing

They sought it with DistoX's and sought it with care; they hunted it with survey legs and rope; they tried to break the record with a bit of dare; deepening cave passages with increasing slope.

They shuddered to think that the chase might fail, and Stefan, excited at last, went bounding along, through mud he did flail, on the surface, daylight was near past.

"There is Thingumbob shouting!" Alan said,
"He is shouting like mad, only hark!
He is waving his hands, he is wagging his head.
He has certainly found the deepest depth in the dark!"

They gazed in delight, while Gabriel exclaimed "He was always a desperate wag!"
They beheld him — their Andreas — their hero unnamed on the top of a neighbouring crag.

Erect and sublime, for one moment of time. In the next, that wild figure they saw (as if stung by a spasm) plunge into a chasm, while they waited and listened in awe.

"It's the deepest depth in the dark!" was the sound that first came to their ears, and seemed almost too good to be true.

Then followed a torrent of laughter and cheers.

Then the ominous words "It's a Boo —"

Then, silence. Some fancied they heard in the air a weary and wandering sigh that sounded like "-jum!" but the others declare it was only a breeze that went by.

They hunted till the darkness of fading batteries came on, but they found not a skerrick, or trace, or mark, by which they could tell that they stood on the ground where Andreas had found depth in the dark.

In the midst of the word he was trying to say; in the midst of his laughter and glee, he had softly and suddenly vanished away — for the depth *was* a Boojum, you see.

Trip Reports

JF-237 Niggly Cave connection Trip report summary

23-26 May 2019

Compiled by Stephen Fordyce

Party: Serena Benjamin, Patrick Eberhard, Rolan Eberhard Stefan Eberhard, Stephen Fordyce, Alan Jackson, Fraser Johnston, Gabriel Kinzler, Chris Sharples, Petr Smejkal

Trip Summary

Yes, finally the connection between JF-237 Niggly Cave and JF-36 Growling Swallet is confirmed, as just one of the exciting accomplishments of a large team who spent up to 4 days underground recently. As Alan put it "everything turned to gold" and as such, multiple reports for various highly successful missions within the trip will be detailed separately.

The connection in particular is an achievement which was made possible by, and belongs to, everyone on the trip, as well as everyone on previous trips going back 50 years or more. By taking the lowest point of Growling Swallet (at the 25 m deep point in the Dreamtime Sump) and the Niggly entrance (top lip method), the depth record of 397.7 m (after recent data fandangling following the 395 m claim immediately after the trip) is claimed. A survey error of about 36 m over the 5 km between main entrances is testament to many surveyors over the years (and particularly impressive considering the 700 m of knotted line/dive compass survey at the bottom). A through trip next summer

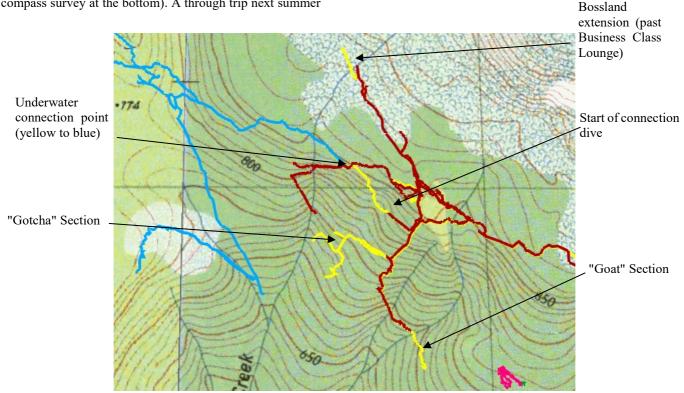
is being contemplated, if enough cavers think it's worth the effort.

Apart from the connection to Growling Swallet on day 1, over 1 km of new base level passage was found and surveyed from Atlantis, keeping the dry caving/dive support crew well occupied. Leads are heading towards Tiger Mountain (current gap 220 m), so perhaps a dry caver through trip will also be possible! The Goat section which follows the Game of Thrones has turned away from Tachycardia, but some leads remain to be pushed. Al Warild's waterfall climb above the tyrolean was surveyed, sketched and the rope retrieved, and a return dive to the Business Class Lounge yielded going master cave passage heading towards Living Fossils in Growling Swallet, and then to JF-387 Porcupine Pot.

A media strategy had been workshopped with the team, the STC committee and others, and was very successful in its aims, with particular thanks to Fraser for his footage and organising, Stefan for his still images and my new wife Nadia for her professional expertise in media. We gained great exposure for caving (and cave diving), for STC, and for *Australian Geographic* (who provided money for the rigging in the cave) as well as for the Tartarus documentary. There were 3 TV interviews, which broadcast across the country, 5 radio interviews and 4 newspaper articles, with plenty of online articles also.

The current state of play

An overlay of the caves is shown below (and at time of publishing, almost certainly outdated). JF-237 Niggly Cave is maroon, with the new data from the trip in yellow. JF-36 Growling Swallet is in blue. JF-270 Tachycardia Cave is bottom right in magenta.



JF-237 Niggly Cave: Serena's view of day one 23 May 2019

Serena Benjamin

Having picked Fraser up and a Banjo's stop we were getting ready at the start of the Niggly track when the others rocked up. My ambition (delusion?) of just having one large pack and one small pack this trip was quickly quashed when Steve revealed the amount of gear that needed to go in. This guy doesn't pack light. His puppy dog eyed pleading looks won out and I quickly upgraded to two large packs. The other lads fared worse. A steady and uneventful walk up the hill preceded a steady and mostly uneventful descent. While I belligerently adopt the attitude that I'll just do Tigertooth once each way, others like Alan, prefer to run shuttles. I can't remember how many times Alan went past. Lots. And especially appreciated by the others as there was a surfeit of packs. Passing rebelays with heavy packs was fun. Alan and I also got some extra excitement when Steve's ability to wrangle his posse of packs became insufficient to counter some rocks' desire to be free. Several fairly large ones had a fair bit of airtime on the big pitch.

All were on the bottom by about 18:00 where we regrouped, repacked and Alan shot off to dump things at camp. On his return we all proceeded across the flying fox and to the sump. My first view of it - and a beautiful sight it was. With water levels lower than when it had been discovered, Steve was keen to get in. By about 20:30 Steve began his dive and the rest of us began the task of waiting. Waiting and more waiting, distracting ourselves with DistoX calibration and the exciting task of choosing between hot soup or hot choc.

Niggly-Growling Connection Dive Report 23 May 2019

Stephen Fordyce

Acknowledgements

The connection is an achievement which was made possible by, and belongs to, everyone on the trip (Steve, Alan, Gabriel, Stefan, Serena, Fraser, Petr, Pat, Chris, Rolan), as well as everyone on previous club and private trips in both caves going back 50 years or more. Particular credit goes to Andreas Klocker for his drive by instigating trips and interest in both Growling Swallet and Niggly. 6 of us were there for the connection attempt, with 5 support crew waiting a cold and tense 100 minutes while I did the dive. Petr and Pat came in for a day trip and took a heroic amount of gear out, while Chris and Rolan walked up the hill in rather awful conditions, just to make 2 trips dragging horribly heavy bags through the Tigertooth Passage and down the hill. Thanks to Fraser and Stefan (and everyone who stood around patiently lighting, modelling and talking) for recording the historic moments.

History

The link between JF-36 Growling Swallet and JF-237 Niggly Cave was proven in the early days of Niggly exploration, when Rolan Eberhard dumped a whole lot of dye into Growling Swallet while Stefan Eberhard and Vera Wong were exploring Niggly. The timing was excellent, and

Stefan reported being able to physically see the dye, part way through the rockpile/streamway just before the large Mother of God passage. While people were busy with pushing the far end of the cave into the unknown, not much energy was expended in the mid sections, and with other exciting prospects, no further discoveries were made.



Surveying in challenging underwater conditions.

Photo: Stephen Fordyce

Several decades (and some confusion over exactly where the dye was seen) later, this spot was where a hunch and some home-made dye tracing gear courtesy of Petr Smejkal lead to arguably the biggest discovery of recent caving times. After 3.5 years of Niggly pushing (with a few successes but most leads shutting down) by various parties, the project was losing steam and participants. Petr, Ben and I pushed Petr's "Ninja Streamway" through some unlikely rockpile/ streamway passage before rising water saw a hasty retreat beaten. We also pushed to rockfall the passage accessed beyond the waterfall courtesy of Petr's epic aid climb and the now-rigged tyrolean. This is literally 5 minutes journey from the base of the pitches and the main thoroughfare, and the waterfall is obvious and well known.

A follow up last ditch trip by Petr and myself (with Ben having unfortunately just headed off for 10 months cave guiding in Vietnam) saw the Ninja Streamway break into spectacular passage named "Atlantis", and connect to the passage beyond the waterfall ("Vietnam") in a mind-boggling shortcut. The Pool of Promise was a sump with every indication of connecting to Growling, and there were leads galore. Including the Ninja Streamway, over 2 km of new passage have been discovered in this area and the cave overview looks distinctly different. Team morale and trip participants are at an all-time high!



Warming my hands looking towards the home sump pool in the Raptor Memorial Dry Chamber

Photo: Stephen Fordyce

Back to the other side of the connection. The history of exploration in Growling Swallet requires an article in itself (It is largely documented in the Tasmanian Explorations Journal published by Tasmanian Caverneering Club-TCCin 1992, now out of print - Ed) but the furthest reaches of downstream Growling were explored decades ago, with one dive attempt in the terminal Dreamtime Sump by Nick Hume, who was unable to get through the initial low flat section in a backmount cylinder. In early 2015, I was new to the Tassie caving scene but was fortunate to get a chance to dive the Dreamtime Sump - managing to get 500 m of penetration and survey data over the course of two dives, before we declared it a job for later. It was already at a 3tank dive, and needed a sidemount rebreather, or a breakthrough from the other side - this was at least in part, Andreas Klocker's inspiration for driving the early years of the current Niggly project.

With the stage set and signs extremely positive (survey data, amount of water, cave characteristics, etc.), the connection attempt was unusual in pre-empting the outcome in a major way, with considered media strategy, etc. Knowing a new Australian cave depth record was likely, we felt this was a rare opportunity to provide a positive news story, raising the profile of caving and cave diving, as well as give exposure to *Australian Geographic* (who contributed significant money towards rigging gear) and the Tartarus documentary about the cave. Increased pressure on myself as the push diver was a significant worry that was continually assessed.

The Depth Record and Possible Through Trip

By taking the lowest point of Growling Swallet (at the 25 m deep point in the Dreamtime Sump) and the Niggly entrance (top lip method - as for the previous Niggly depth record), an Australian record depth of 397.7 m is claimed. Note that 395 m was initially claimed, but with some untangling of old survey data Rolan, Alan and myself have agreed on the updated figure, and an explanatory note will be included in the STC Archive. A survey error of about 36 m over the 5 km between main entrances is testament to the diligence of many surveyors over the years (and particularly impressive considering the 700 m of knotted line/dive compass survey at the bottom). A through trip next summer is being contemplated, if enough cavers think it's worth the effort. (There is some repetition here, or I should say in the summary, but a little tolerance is to be allowed in recording this significant information -Ed)



Surveying out through the Raptor Memorial Dry Chamber
Photo: Stephen Fordyce

The Dive

After extensive planning and preparation (not least of which was a full-dress rehearsal at my favourite local dive site the weekend before), excessive re-dive filming and much considered faffing-about setting up gear, it was eventually time to go. I set the GoPro running, stuck a reg in my mouth, grabbed the reel and started swimming in the direction of the fault the Pool of Promise Passage was following... only to reach a dead end.

Not a great start to the dive, although I'd noted an obvious way on, down dip to the left. I must admit this threw me just a bit, as I'd been imagining the dive going dead straight along the same fissure, all the way to the connection. I made sure the straight ahead lead didn't go - it pinched out with a small air space not big enough to get my head out of the water.

Going back through my own silt cloud was disorienting, but I was able to drop down the slope, into comfortably-sized passage heading parallel to the dead end but at 3-4 m depth, presumably along the strike. Picking the well-defined left wall to follow (the right of the passage tended into silty, low flat areas, where a wall wasn't obvious) it was obvious the cave was "going" and made some good progress with a clean washed floor of cobbles and larger limestone flakes, before the left wall pinched away and the best option for forward progress was a dubious low flat thing with silty bottom and a whole pile of *Anaspides* (cave-adapted mountain shrimp) on a collection of washed-in organic matter.

This ~3 m long section of the cave was a classic cave divers' "line trap", where the guideline could easily get dragged sideways into impassably low passage, leaving a returning diver conscientiously following the guideline in zero visibility very puzzled as to why they could no longer fit. Two of my yellow plastic silt pegs were used at either end of the tightest section, and just when I'd made a fairly thorough mess of the visibility, the reel ran out. More mess was made in the still low section as I carefully fumbled with thick gloves while blindly trying to get the guideline off the spent reel and attach the correct next one. This is where experience and practise comes into play - and what could have been a highly stressful situation was just another part of cave diving.

Well, having applied considerable focus to this task, I was very surprised to confidently spool off 2 m from the new reel and surface into a large chamber, mostly filled by a lake of comfortable wading depth. This was later named the "Raptor Memorial Dry Chamber" (RMDC) after Ben Jackson's favourite rooster, which was sacrificed the night before the trip in the interests of peace and quiet for the residents of Moonah. The RMDC was again outside my expectations although it was a solid 30 m of easy passage, and a good spot for a rest without consuming gas. The connection dive was going even less as expected.

A couple of leads were noted - an aven in the ceiling and an uninspiring side lead - probably being instrumental in the main streamway passage shifting above the water table. The floor of the lake was cemented dolerite pebbles the size of squash balls, a change from the silt floor I'd experienced in most of the dive to this point. I made a solid tie-off on a rock protrusion above the water, with an arrow - hopefully this survives high flows. In retrospect there is quite a lot of line hanging free in the water.

At the far end of the RMDC, straight on was a small cobble beach with indication of an uninspiring sump pool just beyond, and a much more promising lead around to the right in the water. Being dressed for it, I went right but was quickly disappointed as the passage pinched into flat, wide, silty obscurity. I did a fairly thorough job of checking (also of silting it out) and there was no obvious way on. The last option was the small pool beyond the beach - this required fins off and a walk of perhaps 5 m, which was very annoying.

The pool barely had room for me to put fins on, and an awkward flop was required to get into correct diving orientation. It was a pretty desperate lead as far as they go. Fortunately, once underway, the passage was low but negotiable, and quickly opened up into large square underwater cave. When the second reel ran out (and knowing the connection distance was 220 m, with 200 m of guideline used) I knew the moment of truth had to be coming, one way or another.



Another reel bites the dust!

Photo: Stephen Fordyce

The first two reels had 3 mm floating orange line, selected for its abrasion resistance. The third reel had 2 mm sinking white line, selected because a whole lot more fits on the reel. An arrow was also placed at the change in line, confirming the way home. This passage had trended much deeper (9.9 m maximum) than the initial part of the dive, and was of much different character, being 1-3 m wide with both walls usually visible, and at least 2 m high (often the ceiling was not visible).

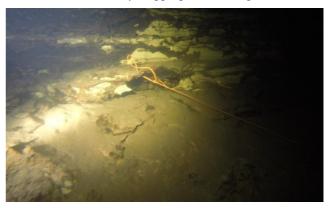
As the line sang off the reel, I was a bit nervous - about being so far from home, about whether the connection had been missed, whether the line was gone (we had found none washed through into the downstream parts of the cave), and whether I would have to solve any more underwater puzzles in this remote place. Looking and hoping for that piece of string which would mark success, I got a shock to see something else - a fin!



The surprise fin. Photo: Stephen Fordyce

It looked old and like it had been there for a while, but it was a bit hard to tell - the style is still used today. The team thinks this is most likely left from Nick Hume's dive. For it to be washed through that far indicates current enough to damage the guideline - this is a major factor for any potential through trip. I left the fin, meaning to bring it out later, but alas, couldn't find it. Maybe next time - until then, it's on the GoPro footage.

Still reeling (figuratively speaking) from the fin, I swam along and finally saw the orange guideline leading in the direction I was swimming. The connection was made! Or was it? I had expected to recognise the cave, or the line - but both seemed completely foreign. Could it be somebody else's line? Of course not, the survey was just about perfect. So I tied in, attaching back-to-back arrows to indicate the joining of the Pool of Promise and the Dreamtime Sump, and also installed the commemorative marker that the support team had written mostly inappropriate messages on.



The end of the Dreamtime Sump guideline!

Photo: Stephen Fordyce

Checking and recording gas I had oodles, so as planned, I continued swimming towards Growling, carefully inspecting the line as I went. Apart from a few lightly buried sections, it was in great condition, indicating that a good proportion should still be intact for a later through trip. Returning to the connection point and very glad to be heading for home, I turned off my glove heating (the electrical cable interferes with the compass) and commenced surveying out.

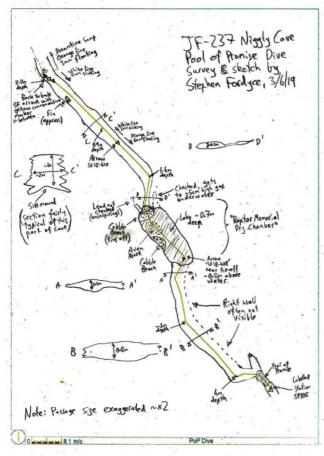


The back to back arrows and yellow commemorative marker

Photo: Stephen Fordyce

The trip out was reasonably uneventful, although punctuated by my spare reel generating a cloud of scary loose line, that eventually had to be bundled up to keep from tangling in everything. I also discovered an empty reel (with stuck open clip) lying next to the line where it had fallen - and failed to find the fin. A longer than necessary stop was made in the RMDC to warm up my hands, but none of the restrictions were problematic on the way out. Just before the final leg up into the Pool of Promise, my helmet light cut back power to save battery, and it was lucky that I remembered that would cause flicker on Fraser's "triumphant return" video clip. Never stop thinking!

Sketch showing details of the Pool of Promise/Growling connection dive (Below).





Cave diver's nightmare - line everywhere

Photo: Stephen Fordyce

I took the opportunity to put one of my backup lights on the helmet and turn it onto full, also letting some bubbles and light go up to the surface as a reminder to the support team to be ready to catch the shot (it's impossible to recreate the surfacing and the first sentences!). A "mission accomplished" and a few cheers later, everyone was told to shut up so the surveying could be completed.

It was already about 10:30 pm by this point, and the jubilance faded fast in the face of cold, fatigue and heavy loads. We had made the decision to carry all the dive gear with us - depositing drysuit, undergarments and empty reels at the base of the pitches for exit from the cave, and the rest to camp for another dive through to the Business Class Lounge in the coming days. Getting the gear at least to camp meant that the dry caving crew didn't have to spend part of their valuable dry leads pushing time hauling dive gear the next morning.



Welcoming committee on surface
Photo: Stephen Fordyce

Although pretty shattered, I couldn't help but stay up to enter the survey data into TopoDroid and see how it matched. Waking some hours later with a dry throat as Alan stumbled past to pee, I croaked "36 m, the survey error is 36 m". He was suitably impressed but hid it well.

A video showing most of the push dive is available on YouTube as an unlisted video - not properly vetted for the public domain, email me at stephen.fordyce@tfmengineering.com.au with your request for access.

Technical Dive Notes

- Gas pressures and usage:
 - Using 2x 9L composite cylinders, with Nitrox 30 in them
 - Start: 270/270bar
 - o At RMDC: 270/230bar
 - o At connection point: 200/230bar
 - After swimming along old Dreamtime line and then coming back to connection point: 185/230bar
 - On return to PoP: 140/190bar
 - So, gas used:
 - 360L getting to dry chamber
 - 630L getting from dry chamber to connection point
 - Ie. total 990L getting to connection point
 - And 765L from connection point to PoP while surveying
 - NOTE: when it became apparent that the sump was shallow, and return gas would not be much, I deliberately conserved gas in one cylinder, to give the best option

for leaving it in the cave for a future dive (which we did).

- Thermal notes:

- Water temperature was logged as a constant 7°C
- Total time away and in the water was 110 minutes (apart from 5 steps over the dry section)
- Membrane drysuit with thin polypropylene thermals, explorer socks,
 2-piece Fourth Element Arctic undersuit,
 1-piece Fourth Element Halo3D, 7 mm hood, heated 5mm (uncoated) wetsuit gloves (a TFM special!)
- I was quite comfortable on body, and head. Feet maybe a little cold. Hands were great with heating active, becoming unpleasantly cold and clumsy on way back when heating off for surveying.
- Dexterity of hands with the 5 mm gloves was noticeably low (i.e. changing reels in zero vis, tidying loose line on a reel, were difficult)

- Lights/camera:

- Helmet light on full flood for GoPro
- My GoPro Hero 4 running in low light mode (720P). Footage was collected of the entire dive and this is currently an unlisted video on YouTube (contact me for the link), plus many GB are available in my personal archive for anyone interested.
- o Hand light on full spot for penetration
- 4 spare lights on harness and in pockets, so 2 light failures could be tolerated and the dive continued

- Survey gear:

- All line knotted at 3 m intervals
- Aquasketch scrolling wrist slate for notes
- o Dive compass with 10 deg increments
- Shearwater Petrel dive computer (set to fresh water, depth to 0.1 m)

Dive profile of second section of dive only

i.e. From the Raptor Memorial Dry Chamber to the connection, about 75 m towards Growling, and then back to the RMDC. Initial section of the dive, from Pool of Promise to RMDC was too shallow and quick to be very meaningful.



The escape, car excitement and breaking the news: Friday

24 May 2019

Fraser Johnston

Serena was up early Friday morning, eager to get going, I was a little slower to wake up, heeding Serena's threats to leave without me I eventually got up, had some breakfast and packed my gear. I can't remember the time we left base camp. I went first, followed by Serena who said that if she went first she would leave me behind, which was fair enough. Nothing too eventful happened on the way out unless my slower than usual slowness counts as noteworthy. We reached the entrance at dusk; it was dark by the time we started back down the hill. It was a fairly nice evening, I had to take a couple of quick rests on the way back which pissed Serena off no end, I guess it was justified as she was carrying some of my gear.

We got back to the car and the battery was flat, brilliant... at least it wasn't raining... we tried to roll start it using Alan's car to tow, about then it started pouring... the roll start didn't work, we didn't find out until later that you can't roll start an automatic! I drove Alan's car to Maydena where I borrowed some jumper leads from an old guy in the RSL, drove back out to where Serena was waiting in the car and tried to jump start it to no avail, we decided to drive Alan's car back to Hobart and Serena would return to pick up her car with the RACT in the morning. We swung by the RSL on the way through to drop off the jumper leads and buy a beer for the guy who helped us.

Good times...($Or\ maybe\ not! - Ed$)

Waterfall Climb and Chamber

24 May 2019

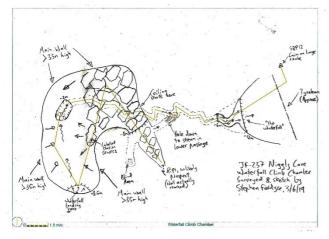
Stephen Fordyce

Al Warild and a crew from NSW installed almost all of the original version of the current rig, some 3.5 years ago. Al has been back a few times since and has focussed on a rather epic aid climb up next to the waterfall - this starts at the home side of the tyrolean, and goes up several overhangs and some scarily average rock to a Y-hang, and then another in a meander at the top of the waterfall. He pronounced it "finished", and it's been on the list to survey and de-rig for a while. The meander goes for a little way before breaking into a chamber of surprising proportions and soaring walls of uncertain height (the highest DistoX reading I managed was 36 m).

Deciding that I was too shagged for a proper dive attempt the day after the connection, I had a late start and figured this job was a worthy task for the day (it turned into a bit of a mission). I took a DistoX and phone with TopoDroid and did a detailed survey and sketch which is hopefully self-explanatory. I also recorded a detailed GoPro video tour. Of particular note - a stick the size of my little finger was found in the meander, possibly indicating a fairly direct surface connection.

Neither Al nor I noted any exciting prospects, so it's written off for now. The de-rig took a lot of time, and access to the meander from the top pitch-head is a bit exciting, but haul cord and at least one stainless anchor per pitch are left so that if anyone is ever inclined, it should be a whole lot easier to get up there again. There are two pitches, which use yellow markers 3 and 4. I made narrated GoPro videos of the top and bottom of each of these, which are securely backed-up in my personal archive and available to anyone who's interested. A report on all the climbs and a bit more detail on them will be done when the project is finished.

The video tour of this area is available on YouTube as an unlisted video - not properly checked for the public domain, email me at stephen.fordyce@tfmengineering.com.au with your request.



Sketch showing details of the Waterfall Climb and Chamber. Sketch by Stephen Fordyce

Niggly Cave - Business Class Lounge and Bossland

25 May 2019

Stephen Fordyce

History

About 18 months ago, I was able to dive the DIY Sump, which lies at the far upstream (north-western) end of Niggly Cave. The sump was first dived by Sandy Varin about a year earlier, and I extended her line and negotiated an exciting restriction to surface in the "Business Class Lounge". Despite a couple of hours that day and a subsequent entire day of hard upward pushing in rockpile, progress was desperate and slow - not worth dragging all the dive gear back for as sole objective. But given that it seemed like the only chance of continuing the master cave upstream, the chance for a return had been playing on my mind.

The Stars Align

With bulk dive gear coming into the cave for a push dive in the Pool of Promise, and plenty of dry caving leads to keep everyone else happy, I was excited to be able to give the Business Class Lounge one more go. Excited enough to convince everyone to let me bring a wetsuit - so that I could dive through the sump and spend the day in (relative) comfort and productivity, rather than in a highly restrictive (and hot) drysuit, or in soggy cold caving clothes as I'd done previously. Some tools were also brought into the cave to further increase productivity.

Stefan and I had portaged all the gear from camp to the sump and set it up the day before, so it was a matter of donning my wetsuit at camp and walking down. After some morning faffing and an impromptu photography session, I got a somewhat late start (the dive began at 12:05 pm). I used the canister from my glove heater as a drytube for the DistoX, although the Micro Pelican case with survey gear in it also survived the dive. Next time I will replace the lid-with-cable with a blank. This, along with survey kit, dive spares, and some rope to rig a handline on "The Corporate Ladder" climb were in a caving bag that I dived through.

The sump hadn't been passed in a while, and some of the gravel had slumped on the initial slope (where flow goes against gravity) to a point where I had to shift it to get through. The line was in good condition (although loose), despite at least one major flood event. I looked at the final restriction and didn't bother trying to shift the rocks constraining it - they were pretty big, and it wasn't all that nasty as it was.

Down (up?) to Business

I'd been dwelling on this for ages and was sure the top end of the Business Class Lounge would go. But first nod to the to-do list - and do a check of a small pool surrounded by clean washed rock. I didn't bother dragging dive gear up and over an annoying little climb but took my hood and mask - it was a bit annoying to stick my head into the nastily small sump pool and see that it had some promise. It would need to be checked, but I would do it on the way back in the unlikely event the dry rockpile lead didn't go.

<8 hours later>

It didn't go and I was nearly spent. I'd surveyed up, even optimistically making a labelled tape station for the next explorers to tie into. I also rigged a permanent 11 m rope with loops on the Corporate Ladder climb, making it much less scary. The twisted and torturous wriggles up the top of the rockpile I'd named "Middle Management", but finally had to admit defeat in a final flat void named "The Glass Ceiling" - sadly, it appeared that more time or another generation was needed to crack that one. I'd made perhaps 15 m of bitterly difficult progress, with burning arms shifting sticky rocks around in tight and awkward positions. The wetsuit was comfortable to roll around in but my arms were eventually only good for a minute or two of effort before they had to be quickly brought back to my sides to recover. The Glass Ceiling showed some signs of being the top of the collapse, but there was nowhere even to start poking next. I was shattered but could sleep well knowing it was truly finished.

I slowly repacked the caving bag and slithered back down to the main chamber, where the nasty little hole mocked me. Motivation for push diving was at an all-time low, but tomorrow we would be heading out of the cave and there might never be another chance to check that lead. Some chocolate and a mental stocktake of reserves tipped the balance and I kitted up in the main pool to see if there was a way around from there. Between the wall and a large rock, I could see through, but it was a tight vertical squeeze with ribs of rock sticking out and I couldn't fit. Maybe with some work it might be possible. So being pretty cold and grumpy,

I climbed out, up, over and down into the nasty little hole named the "Lateral Hire Sump" in line with the corporate theme.



The nasty Lateral Hire Sump pool entrance measures about 40 cm x 30 cm

Photo: Stephen Fordyce

This turned out to be a rather exciting exercise and on the way back I elected to carry each tank and the pair of fins over individually - much better. The sump pool, if you can call it that, was bounded by sloping rocks and not very big. I don't often go feet first because you can't see and it's often game over straight away, but in this case it was the only option. I immediately got jammed as I tried to crawl in backwards, and after some struggle was able to unclip a cylinder and get it above my head. I was then able to get into the water and submerge, turning around in zero visibility with relative ease and getting tidied up to dive on.

The passage was of reasonable swimming size and a bit exciting. In fact, after a few metres I surfaced into a pool with ongoing passage and the sound of running water - this meant the sump pool was finished and the way on was in streamway passage. Quite exciting now! A little awkward to get the gear off again in limited space, but I was soon skipping off along easy walking streamway passage. It was pretty clean, with no major rockfall, although a few leads heading up towards Middle Management and the rockpile (none particularly promising, given the enticing dive and being perfectly dressed for it). After enough small but wellproportioned streamway passage to get me really excited, I was in knee deep water, which turned into a very nice sump in clean passage free of breakdown. The way on was found, what looked to be a major sump needed a proper dive, and I had about 20 m of line left on a small spool, an excellent excuse to leave it for a well justified next time.



My "I almost don't feel wrecked any more" face
Photo: Stephen Fordyce (selfie)

I recorded a GoPro tour and a rough (dive compass and pacing) survey of the dry passage back to the line and marker I left - looks like the streamway passage is well and truly past the collapse. As the final piece in the corporate theme, the breakthrough passage was named "Bossland" and the new dive the "Bossland Sump". The Glass Ceiling might need another generation to be broken, but via the Lateral Hire Sump, Bossland could be reached. Probably game, set, match on the corporate theme, but who knows... (perhaps a tennis theme is next?!)

The very short and shallow (almost a duck-under) Lateral Hire Sump was surveyed on the way out and linked into the main survey. Further investigation could potentially yield a bypass of that, for what it's worth. The return dive through the DIY Sump began at 10 pm, and after deconstructing and packaging the dive gear, I rolled into camp with a load of water at 11:30 pm. It had been one epic day, where karma nearly got the better of me, and I learned a valuable lesson about checking the most obvious leads first.



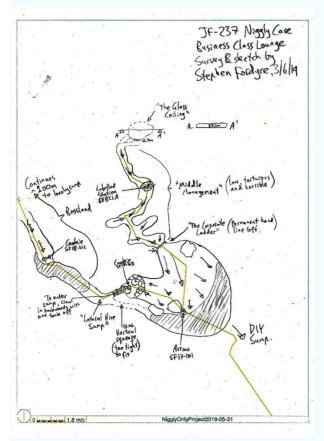
Enticing view of the Bossland Sump Photo: Stephen Fordyce

It's a bit complex to say how to approach a dive in the Bossland Sump, which is now the 3rd consecutive sump in the upstream direction. If the sump goes a long way, and is complex, a drysuit is much better for comfort and optimal underwater problem solving (and underwater surveying). But a drysuit is terribly restrictive and hot if there's any dry caving - even the 100 m walk from the Lateral Hire Sump to the Bossland Sump would be quite annoying. On balance, I recommend the next dive be done in a wetsuit, with a focus on finding out what the cave does (underwater survey should still be possible, above water survey will be much more likely).

If it turns out to be an epic dive with exposure the limiting factor, that exercise can be combined with the through trip, when the gear will be down there anyway. After the last 2 trips with epic loads, a wetsuit dive will be much less gear as well. A cylinder with 190 bar remaining, the rigging gear and weightbelt and the wing were left in the cave with this in mind - the next dive trip should only need 3-4 relatively modest bags of dive gear. This can also be used to check the new Gallantry Sump, which is likely to be short and have dry caving on the other side.

The immediate goal will be to push the master cave into the vicinity of the Living Fossils Extension of Growling Swallet, so that dry cavers can hopefully push through and all can ultimately continue pushing towards Porcupine with access via Growling.

A video giving a tour of Bossland, and another showing the access to the Lateral Hire Sump are available on YouTube as unlisted videos - not properly checked for the public domain, email me at stephen.fordyce@tfmengineering.com.au with your request.



Sketch showing details of the freshly surveyed Business Class Lounge, and the Lateral Hire Sump

Technical Dive Notes

- Gas pressures and usage:
- o Using 2x 9L composite cylinders, with Nitrox 30 in them
- o Start: 140/190 bar
- o At Business Class Lounge: 115/190 bar
- o After excursion to Bossland: 90/190 bar
- o (transit time through DIY sump 6 minutes each way)
- o Home side DIY Sump: 65/190 bar
- o So: 25 bar from single 9L each way for DIY sump (in wetsuit, with annoying caving bag, some difficulty equalising, and some squeezing). 225L each way, or 75 bar from a 3L cylinder each way (i.e. could be used as a backup)
- o Lateral Hire Sump 25 bar return, or 112L each way. Probably less next time.
- o NOTE: I deliberately conserved gas in one cylinder, to give the best option for leaving it in the cave for a future dive (which we did).
- Thermal notes:
- o Water temperature was logged as a constant 7°C

- o Seatec 7 mm semi-dry, 7 mm hood, 5 mm wetsuit boots over Warmbac wetsuit socks over explorer socks, 3 mm coated wetsuit gloves.
- o I was quite comfortable on body, and head. Toes a bit numb by the end of the day. Hands were fine.
- o The wetsuit was great insulation for lying in the mud, but restricted my arms a lot, and I used a lot of arm energy in awkward positions
- Lights/camera:
- o Helmet light
- o Backup dive lights on helmet
- o Backup dive lights in caving bag (for duration)
- o GoPro, in auto low light, 720p, standard housing
- Survey gear:
- o All line knotted at 3 m intervals
- o Aquasketch scrolling wrist slate for notes
- o Dive compass with 10° increments
- o Shearwater Petrel dive computer (set to fresh water, depth to 0.1 m)
- DistoX in canister
- Dive profile:
- o The new Lateral Hire Sump was too shallow to register on my dive computer!
- o The DIY Sump dive profiles are available on request (previously published, in SS 425)

JF-237 Niggly Cave - What we did while Steve stalked glory

23-26 May 2019

Alan Jackson

Thursday

Stupid, horrible slog with far too many bags. Tigertooth was traversed far too many times. It was a pleasure to finally reach the sump and kick back while far too much expectation and responsibility were directed at Steve. We calibrated (far too many) Distos and consumed far too many hot chocolates to pass the time. Camp was a welcome sight in the small hours of Friday morning and I slept very well.

Friday

A bit of a sleep in, Serena and Fraser headed for home, then Gabriel and I headed off to the Atlantis area to start ticking off jobs and leads. We decided to check the squeeze I'd noticed at the end of the ~30 m collapse passage which heads west (paralleling the Pool of Promise passage) at the base of Mt Atlantis. (Gabriel commented at the time that it was a Superman squeeze (one arm forward, one back) but a week or two later realised that Superman was a two arms forward flyer. Serena was present during that conversation and pointed out one forward, one back was Astro Boy-style, so Astro Boy Squeeze it is.) I liked the way this passage was oriented the same way as the Dreamtime/Pool of Promise stuff – it had the right vibe. The squeeze was a few metres

long before opening up into more large collapse passage. I called Gabriel through and we started checking for ways on. It was pretty complicated with lots of dead-end collapses to check (having an eager ferret handy saved me a lot of effort). There was some draught at times and Gabriel suggested 'Breeze Blocks' as a fitting play on words name for the area. After about 50 metres it was looking terminal. I scaled a ludicrously sketchy climb at the end and found continuing narrow rift with a short drop back into collapse (needing rope) and a continuing squeeze blocked with an annoying rock. We decided to survey out, grab our bag and come back in with a rope to protect the climb and get down the next drop. Surveying done, we shot back to Atlantis Junction for a drink (it was hot, dry work in Breeze Blocks) then headed back in. About halfway to the end I pointed out we hadn't done a three metre down climb to check a lower level on the southern side. Anything to delay the bastard climb that awaited us, Gabriel was sent in to prospect. He returned shortly and made very encouraging sounds. The passage was neatly off to the side of the collapse with solid wall and roof and muddy floor. It barrelled on for ~50 metres then dropped down a mud slope to a stream. Yippee. We rigged a rope (in case it was too slippery to climb back up) and slid down.

The stream passage continued up and downstream in \sim 4 m high, 1.5 m wide dimensions. Obviously, we chose upstream and squirmed our way over small muddy obstacles to a more intimidating mud slope. It took a few goes but I got to the top and proceeded to squeal with delight. Before me lay a large mud slope down to \sim 7x7 m passage barrelling off into the distance. Gabriel, having not seen me show much emotion underground before (other than abuse), didn't know what was going on but understood perfectly once he joined me on the top. We slid down and charged off.

Almost immediately on the right (west) a side passage with a small stream entered via muddy but good-sized passage. Straight ahead (south-west) the passage was classic exphreatic with a more recent vadose slot (keyhole cross section). Gabriel stayed low and I got up on the mud banks as much as possible to check for high side leads. One large inviting side lead was found on the right before I re-joined Gabriel in the channel. He had come to a junction of two streams at the end of the big passage. The right branch looked more inviting and continued for a bit before terminating in a pretty but small sump (later named 'Gallantry Sump'); maybe enough to excite a diver but not likely. We commenced the survey and headed back to the junction. The other branch was a tall narrow rift with a gurgling sound emanating from its far reaches. It soon got too narrow at stream level but the option to go up into wider rift was noted. We surveyed out of here too and back down the big main drag. At the larger upper level side passage we climbed up and started surveying down it (heading northwest). It was wide, flat mud-floored fossil passage which got progressively lower until it was a flat-out crawl then belly slide. We ditched the survey and continued on in misery. Soon we were standing again though, much to our relief. Shortly after a canyon slot in the floor led to a streamway several metres below. We bridged over this and continued on. A small chamber with lots of rounded dolerite boulders marked the end of navigable passage. One large boulder could be undermined with the right tools and rolled out of the way to gain access to continuing passage beyond. I surveyed out while Gabriel checked the climb down to the streamway. It was continuing (but not today). Together we

surveyed back out till we linked in with our earlier efforts in the flattener. Once the tie in was achieved and the roof rose enough, we were able to 'palm surf' while we crawled out, which was quite a novel way of moving about. We later named this area Slick Digits. We were tiring by this stage, so we set to surveying what we'd traversed earlier in the day and not pushing any new stuff. We retraced our route back to the bags at the top of the first mud slope to the stream, refuelled, then shot a few more legs to link in with the Breeze Blocks survey. Very happy with ourselves, we returned to camp. We passed Steve on the way (he was up Al Warild's waterfall climb above the tyrolean surveying it and pulling out the ropes) but we kept our discoveries quiet.

Once Steve was back in camp we casually apologised that we'd only crossed one of the jobs off the day's list, but ... we had collected nine pages of data and sketches! Enthusiasm for plotting the data was pretty high so Gabriel and I entered it manually into Steve's phone and it proved to be quite interesting. The Breeze Blocks passage and initial bit of survey trended west, then it swung south at the start of the big stuff. It was only ~230 m from Tiger Mountain in Growling in spots. 575 m of new data – a sterling effort.

The main area remained nameless for a couple of days but after the events of Saturday Gabriel came up with 'Gotcha' (explanation later).

Saturday

Petr and Pat arrived and everyone fulfilled some modelling duties for the Ghost of Niggly before P, P, G and I shot across the Tyrolean. Plans kept changing but with the exit playing on the mind of the day trippers we opted for the close leads in Gotcha. First, we checked the stream inlet on the right just after the big mud hill. It went about 50 m in muddy but spacious conditions then crapped out. It seems fairly likely that this stream is synonymous with the one we didn't push down the small canyon at the end of Slick Digits the day before. I'm thinking 'Sloppy Seconds' for this bit, since it was bloody muddy and pretty crap for P and P compared to what G and I had done the day before. We surveyed out and headed to the upstream limit of the big passage where we encouraged Petr to try to push the tight rift inlet (now called 'The Gurgler'). He made some progress but returned saying a wrecking bar was required to machine some crud off the walls to continue.

While the others looked at The Gurgler, I climbed the mud slope immediately opposite (a cross rift/joint runs through the roof and up the other side from The Gurgler). This terminated in the world's slipperiest climb into the roof (climb not attempted and not looking like it is worth the effort). I surveyed back down to the permanent station at the junction below. On our way back down the big stream passage we stayed as high as we could to check for other high leads (which can't be seen if you're down in the bottom of the vadose canyon here). Two small inlets come in on the east side but both emanate from tiny holes. At the Slick Digits junction I climbed up and poked myself down a narrow muddy slot which drains a few drips from this area. It heads south, parallel to the main stream passage to the east then drops down a ~4 m drop to a deep static pool. NOT a diving prospect though (unless you're very skinny or particularly insane). I didn't go down to the pool as getting out again was likely to be impossible.

Next we returned to the big mud mountain at the downstream end of the big stuff and gazed up into the rift above, wondering if it is worth bolt climbing in the hope that the master passage continues north at this corner. Petr and Pat checked a few upper levels between here and the mud slope back up to Breeze Blocks but didn't report on anything interesting. Gabriel and I explored downstream from the mud slope and found easy, open stream passage for 80 m or so. Then it crapped out into muddy rockfall which we pushed half-heartedly. We figured we knew this was just going to parallel Breeze Blocks to the Atlantis passage then swing north towards Atlantis Junction. Petr and Pat turned up and helped us survey back to the mud slope where we tied in to the previous day's survey.

We re-gathered at the base of Mt Atlantis and hatched a new plan. Petr and Pat were keen to start heading out so we said our farewells. Gabriel was dead keen to go and push the end of Game of Thrones (GoT) but I was worried it might be biting off more than we could chew. He talked me into it. It wasn't too bad and we were soon at the exploration front (finding Gabriel's back-up light waiting patiently for us at The Schism on the way in). We naively dumped our bags, expecting it to crap out fairly soon and climbed up into Gabriel's lead. It went and went and went. It was more narrow meander, only gently ascending, with a healthy stream and draught. It was high enough to be above the flood/mud zone which was both a blessing and a curse (the walls were covered in snaggy popcorn instead of vile mud). At one point I noticed the water levels dropped by 90% but hadn't noticed it coming in elsewhere. It eventually came to a halt at a small aven but Gabriel was having none of it. "I can climb this" was the call and he disappeared up a 6 m climb and insisted I join him. Another aven awaited us with perched limestone and dolerite bounders at the back. Gabriel went climbing again while I felt confident enough to start surveying back out while he tried to kill himself. I'd placed a pink tape and shot a few legs when he returned, defeated. Or so it seemed. He shot up a solid rift instead and progressed even higher, with boulders and shit raining down. Begrudgingly I followed him, reminding him that this was not a good place to break a leg. He got 10 or 20 metres further up in spacious perched collapse before I insisted that I was cold, unhappy and conscious of all the survey we still needed to complete in order for me to sleep with a clear conscience that night. We set another pink tape and surveyed out. The downclimbs were quite sporty.

At a little showering aven, just below the first climb we'd done, I pointed out Gabriel had missed a side lead. I refused to enter it, despite Gabriel's urging and descriptions of 'the most beautiful aven I've ever seen' (I suspected I'd seen better over the years). We stupidly didn't mark the nearby station 14 for future tie in but it won't be hard to work out next time. At station 25 I noticed the inlet we'd missed on the way in (where most of the water comes from). It looked like open passage so I left a labelled station for next time. We only got slightly confused at a wider section of passage with large sediment/clay banks (on the way out you need to climb up several metres rather than continue on at stream level) and to my surprise we linked back into the end of GoT much sooner than I'd anticipated. We had a good wash at The Schism and headed for home, getting back around the 7:30 pm mark. Kudos to Gabriel for overcoming my inertia and getting me through the afternoon.

A tally of the data showed just over 200 m of new data in Gotcha and the same off the end of GoT. We'd been using the survey prefix 'AG' in Gotcha (Alan and Gabriel) but I'd decided to change it for the GoT stuff to avoid confusion. I was going to use GOT when I realised it had a G in it and that adding an A made GOAT. It tied in with GoT, our names and is an acronym of 'greatest of all time' so that bit is now called 'GOAT' and the stupid climbs at the end 'Mountain Goat'. Gabriel was later spotted pissing into his own beard to impress the girls. The whole 'G and A, GoT, GOAT' thing transformed into 'Gotcha' and 'Gallantry Sump' for Friday's extension too (Gabriel wasn't sleeping well and spent a lot of time in his sleeping bag making notes and conjuring bizarre passage names).

Steve finally arrived back at camp at 11:30 pm with epic tales of fruitless digging and a new way on in the direction of Porcupine.

Sunday

The kings of faff looked like maybe being ready to leave camp at around noon, so Gabriel and I left them to it in the hope of connecting with Chris and Rolan at the top of the 85 before they lost interest and headed out without us. They'd been waiting an hour when I turned up about midday. It was a massive psychological boost to know that I'd only be doing Tigertooth once with one bag. A massive thank you to Chris and Rolan for braving the shit weather to help us out.

Back on the surface it was cold and raining. We saddled up and slogged down the hill while C and R headed back in to help Steve and Stefan through Tigertooth. Legends.

In a nutshell, a simply astounding four days in Niggly. Growling and Niggly connected, a new sump to push in the Porcupine direction, two lots of new dry passage (with leads remaining) and a total in the order of 1.5 km of newly explored and surveyed passage (wet and dry combined). Wow. And then there's the media storm that Fraser whipped up for our return. Quite an eventful few days.

"Birthing Day": Sunday

26th May 2019

Chris Sharples

Chris Sharples and Rolan Eberhard had decided to involve themselves in the big push just enough to catch a whiff of the vibe, and to this end had offered to help carry gear out along Tigertooth Passage on the last day. There seemed a pleasing symmetry in this since it was Rolan & Chris who started the Niggly re-survey way back in February 2010 (yes that long ago!).

Our aim was to be waiting at the top of P86 at the end of Tigertooth Passage at 11 am on Sunday, and to this end we managed a rendezvous in Kingston at 6 am. After driving up in my bomb (because all Eberhard cars had been requisitioned by offspring), a pleasant uphill walk and then a walk down memory lane ("Tigertooth Passage" to you), we arrived at the appointed place within about 10 minutes of the appointed time. Whereupon all of a sudden nothing happened, so we sat down and waited. After about half an hour, a far-off point of light appeared in the abyss below, and over the next 20 minutes or so got incrementally closer. Finally, Alan appeared at the top of the rope, and began

proclaiming uncharacteristically effusive thanks when informed that we were there to carry bags of gear out.

We waited for Gabriel to follow, which he did about an hour later, then between the four of us carried out the four gear bags Alan and Gabriel had somehow lifted up the big pitches between the two of them. I can't say I felt particularly helpful but I suppose it gave Alan & Gabriel a chance to recuperate a wee bit before emerging at the surface, only to immediately scurry for shelter from what soon became hours of the first heavy rain in weeks.

After seeing Gabriel and Alan off down the hill in the rain, Rolan and Chris retreated into the shelter of Australia's deepest (and now deeper) cave, with a view to carrying some gear for the remaining crew (Steve and Stefan). We ran into Steve halfway back down Tigertooth Passage, and after a sit down and natter in possibly the tightest and most uncomfortable section of that passage, Rolan and I carried Steve's two bags out while he went back to share Stefan's load. It was dark by the time we exited the cave, and the subsequent stumble back to the car in the teeming rain had us both treading carefully under the weight of extra gear. Steve and Stefan caught up with us at the cars, and all of a sudden it was over.

Except for the media storm, so read on...

Media Storm, A.K.A "The day Alan's junk went viral": Monday

27 May 2019

Fraser Johnston

After catching up with everyone at Alan's place the night before where Steve completed the first of many interviews, my morning started with a phone call at around 7 am from one of the many media organisations that would be in touch throughout the day as word of the depth record spread.



In the ABC studios with Leon Compton

Photo: Fraser Johnston

First media call was at ABC and 7 news in Hobart. Steve, Gabriel and I drove into the ABC studios so that Steve and Gabriel could do an interview with Leon Compton while I filmed proceedings. On the way we got a call from Stefan who raised concerns about the only pre-trip group photo that was taken and included in the press release that had been sent out the night before. I won't say what Stefan's main concern was, but the image has been included below for the reader's assessment.



Spot the 7 members of the team in this photo

Photo: Stefan Eberhard

Alan appears happier about this photo making its way around the public domain than the caving success achieved on the trip.

First two media calls were radio, then TV news, then back to Alan's place where Steve completed a couple of phone interviews while washing gear, then at around lunch time we met with Stefan and crews from WIN and ABC News 24, The guys tag teamed the interviews, taking turns to talk to the TV crews while I filmed the proceedings, Steve did a live cross to News 24 which was really cool!

The rest of the day was spent washing gear, with a couple more phone in interviews, the last one while I was driving Steve back to the airport! The next day or two we gathered all the media appearances, all in all, great success! I've finally got an end to Tartarus!



Fraser in his element
Photo: Gabriel Kinzler

JF Cave Numbering on Wherretts Lookout 1 June 2019

Alan Jackson

Party: Loretta Bell, Alan Jackson, Benjamin Jackson

As the Irish ploughed through their trip reports and surveys from their 2018-19 JF expedition it became apparent that they'd maybe pushed a couple of Rolan's old Z-caves but not tagged them. I had promised them that, once the fires were out and the roads re-opened, I'd dash up the hill and tag them so their maps would be right before they publish. It took longer than expected to see the road re-opened (in fact it is technically still closed but judging by the amount of traffic I witnessed up there I'm guessing no one is taking the signs seriously).

I sold the day as a pleasant stroll through the rainforest enjoying the fungus and crisp winter air but omitted the part about thrashing through head high bracken stumbling over logs. The shortest way to access would have been off the end of Four Road or from Florentine Gap but I knew it would be misery all the way so we opted for Eight Road and the McCullums Track. Lots of nice fungus was found, Growling was raging with snow melt and the walk round to the Constitution Hole turn off was all quite pleasant.



Alan starting fern indoctrination practical classes.

Photo: Loretta Bell

We straight-lined it from here to the targets which saw us climbing through reasonably open rainforest until we hit scrubbier vegetation on skeletal limestone soils on the ridge. There was an interesting blind doline on the ridge.

Loretta and Ben wisely opted to sit and wait at this point (there was a patch of sun) and I sprinted off into the ferns on a 600 m solo mission. It took me several minutes of wandering about to find the two holes amongst the man ferns once the GPS told me I'd arrived. I could just hear what I presumed was the Four Road Swallet stream babbling down the hill to my south. Both were very inviting-looking shafts which proved a little exciting to tag without being tied in to anything. The caves didn't match the descriptions of JF-Z-65 and Z-66 provided in Rolan's Forestry report (which is what the Irish thought they'd re-found). The southern one was tagged JF-689 in the obvious solid limestone back wall of the entrance. The other one, 20 metres to the north, was a little trickier as there was effectively no bedrock. I eventually found a small bit of rock on the northern rim (effectively on the 'downhill' side of the entrance) which didn't look like it was going to fall into the cave anytime soon. It was tagged JF-690. I tied a bit of pink tape in a tree at both entrances. It was at this point that I realised I'd left the camera with Loretta, so I couldn't get an entrance photo showing the tag placement. Poo. It's possible these two holes are Z caves but I'm not convinced. I'm guessing they're new discoveries.

I raced back to the others, taking a higher route to avoid the steep, ferny, loggy mess I'd traversed on the way over. There's heaps of limestone about. We packed up and wandered back in the direction of Constitution Hole. On the way we stumbled across an entrance.



We have now moved on to cave tagging classes

Photo: Loretta Bell

A narrow slot descended about 5 m to?. It had two very old yellow tapes on a tree nearby. They were very tight (i.e. the tree had grown a fair bit since they were placed) and they were partially obscured by moss and lichen. I'd guess they'd been there at least 20 years. We tagged (JF-691 on the large blank limestone headwall over the entrance), GPSed and photographed it. Ben was keen to name it. I pointed out that the GPS was listing the elevation as 666 m and since Ben is obsessed with the Salmon Hater song '6.66 (one hundredth of the number of the beast)', we decided to call it 'The Beast'. We wandered back to the car without finding anything else to distract us.

Cave Hill, Florentine Valley

2 June 2019

Bill Nicholson

Party: Callum Nicholson, Bill Nicholson

An opportunity arose to take Callum back into the Pepper Pot Plateau Master Cave for a bit of further exploration. We entered via JF-443, spent a number of hours over a number of levels, poking everywhere sort of stuff, still have a Westerly lead to push but that requires going on a diet so not in a hurry to do that.



Callum showing caving genes are inheritable

Photo: Bill Nicholson

JF-337 Slaughterhouse Pot – JF-36 Growling Swallet: The 10/90 Mini Epic

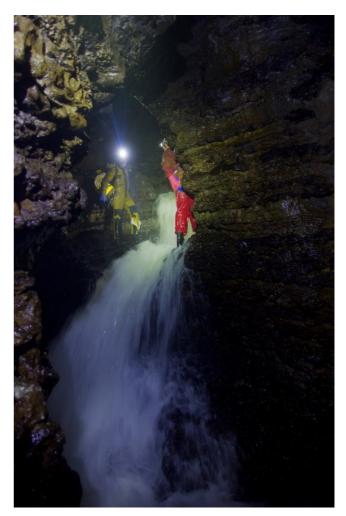
4 June 2019

Gabriel Kinzler

Party: Gabriel Kinzler, James Barnes, Liz McCutcheon

Following a trip through Slaughterhouse/Growling with Serena a month earlier, I had a few reasons for wanting to go back again so soon: we had rigged the newly-formed collapse in the ground after Windy Rift and it needed some more adjusting; I had misplaced my Petzl Stop (scatterbrain alert), which needed retrieving; it had been noted that the guest book was running out of space, so additional sheets were to be added; I wanted to improve my route-finding skills and, finally, Liz was visiting and we all just wanted a fun day out. And boy did we have fun; at least a "type 2" kind of fun.

Walking past Growling Entrance, James and I noted that the water was only just going over the usual "marker boulder": a speedy flow but not overly rushy, on the cusp. I reckoned our chances to do the through-trip were about 50/50 at that point, knowing that potential snowmelt might add to the throughput over the day. Down Slaughterhouse, we accomplished all our objectives: guest book updated, Stop retrieved, Windy Rift Chasm rigging optimised and swift route finding achieved up until that point.



Fun times in winter water levels (we use wetsuits for this!)

Photo: James Barnes

Rejoining Main Streamway after the Chasm is when things got a bit more thrilling. Seeing the amount of water rushing in with a deafening roar lowered my estimation of being able to make the through-trip safely to about 10/90. But after consulting my team mates and some more upstream investigation, it was decided we'd attempt committing to it, while retaining the option of bouncing back up Slaughterhouse if things got too hectic. Liz was more than happy to drink the Kool-Aid, as she really didn't fancy going back through the scary rifts, ladders, free climbs and ropes behind us, and reluctantly recognised pushing through was the lesser evil.

The further we ascended Growling's Main Streamway, the more determined we became despite being drenched. We all had to keep our cool for the remainder of the way, as our progress was occasionally slowed down by the necessity of belaying Liz up the sketchier-and-wetter-than-usual free climbs: better safe than sorry. Seeing the light at the end of the tunnel was a relief, but we all agreed the situation had been under control the whole way nonetheless. Water levels hadn't budged compared to earlier, so we were soaked, but not desperate. I was happy we'd defied the odds in a consultative and constructive way whilst facing an unpredictable scenario requiring a bit more critical thinking than the usual; my initial appraisal of a 10/90 success rate had turned into a very satisfying 100/0. Cue the triumphant fist pumps and exultant high fives.



The ever-changing chasm. Photo: Gabriel Kinzler

Andrew Briggs greeted us on the way back to the car, telling us stories of the past, for instance how it took a while until Windy Rift was eventually passed horizontally, with explorers initially persisting vertically instead of traversing over the chockstones to achieve an easy connection of Slaughterhouse Pot into Growling Swallet.

A final note regarding the chasm: the new rigging uses two old 11 mm club ropes going up, along and down a mud bank on the side of the hole. Both ends have been knotted for easier ascent and descent and the traverse line is fixed in place with two maillons hanging off bolts in the ceiling. It is very clear that the remainder of the mud walkway has been and is going to be progressively washed away in the coming months: I don't give it much more than a couple of years before it is entirely gone. Ironically, this will probably make that section easier to pass compared to the current situation: eventually, all you'll have to do is abseil from Windy Rift into Main Streamway.

JF-463 Constitution Hole – One last poke

9 June 2019

Alan Jackson

Party: Serena Benjamin, Alan Jackson, Gabriel Kinzler, Liz McCutcheon, Michael Packer

The Constitution Hole map was almost finished but two bits from the last two trips Petr and Andreas did in the cave back in June 2014 didn't quite make sense to me so a return to have a squiz was deemed necessary.

At the entrance Pax and Gabriel shot up the hill to JF-691 The Beast (tagged the previous weekend) to see if it did anything interesting. They returned with lacklustre descriptions of a small chamber and aven at the bottom of

the ~5 m deep rift visible from the entrance. Serena took charge of the rigging while the rest of us toddled along behind talking shit. Neither Serena nor I could find the rebelay halfway down Hang Glider Pitch Part 2. Leaving it out just made it a little drippier for longer.

First, we headed to North by Northwest and stopped at station XX44 to inspect the Get Lost area. The traverse and free-climb required to enter this steeply-descending, smooth and ridiculously slippery rift didn't look inviting so we postponed and headed up into the rockfall and through to the climb up into Dumb, Drunk and Racist. Gabriel and I headed up and in while the others touristed in the Grotty Grottos and surrounds. Gabriel and I pushed beyond station APK20 and into new ground for me. If the data and sketches Petr and Andreas collected have been entered correctly then it's clear that we got further than they had, but I'm not 100% sure it is entered correctly. It's all one hell of a mess in there (multilevel with rockfall and rifts going all over the place). I could have pushed further so I think it gets to go on the map as some dotted lines and a question mark to entice the next generation. We left the black (ok, brown) tape on the initial climb to help whoever that stupid member of the next generation is.

The tourists were awaiting our return so we returned to station XX44. The tourists were given instructions on how to find the Happy Ending area and set off while Gabriel and I tackled the Get Lost stuff. The slippery rift traverse was VERY committing. Gabriel decided it was over-committing and sat it out. I checked it all out and was happy to find it matched Petr and Andreas' notes quite closely. We then all headed out. I found the missing rebelay on the way out and removed the manky alloy hanger that had been rotting away for five years. There is a red reflective marker left on the bolt stub. The exit went smoothly and I made it back to Hobart in time to only be fashionably late for my dinner engagement.

Constitution Hole is now considered 'done'. I'll write something separate to accompany the map when it is published with details on possible leads (which is the next piece – Ed), but effectively the cave is such a jumbled, multilayered, interconnected mess that the chances we missed something are almost 100%. I wish the next generation the best of luck.

JF-463 Constitution Hole – Map and notes for the proverbial 'next generation'

Alan Jackson

Map in following section – Ed

JF-463 Constitution Hole is located on the lower western slopes of Wherretts Lookout. It is a rare example of a dry (non-swallet) entrance well below the contact which is not plugged with crap a short distance down. Access is via the McCallums Track beyond the Serendipity junction and is a pleasant, low gradient stroll from the end of the F8 East Road. The cave was discovered by visiting Swiss caver Laure Gauthiez-Putallaz in February 2013 and kept a large team of local, interstate and even international cavers busy for multiple trips over the course of twelve months. In the end it was enthusiasm that ran out, not leads, and the core team moved onto projects like JF-392 Warhol, JF-207

Voltera and JF-633 Ring Hole to broaden their horizons (it was an active and productive period in the JF).

The cave's name was a tongue-in-cheek poke by the mainlanders at my brief but spectacular time in the club's presidential seat. Meetings and email traffic on the STC list server were a little heated and the Canberra mob were finding it entertaining. Like all speleo-politics the solution was to flip the idiots the bird and go exploration caving.

The cave started out like any typical JF feature – descending narrow vadose meanders following the strike, punctuated by spacious pitches. The deepest point (a grotty base-level sump at -140 m) was reached within a couple of trips and attention was turned to Hang Glider Chamber (Andreas had found this chamber/pitch on the second trip and had excitedly declared it was so big you could fly a hang glider across it; we're still not sure what substance he was abusing that day but it was obviously good gear). This pitch was pushed on a 'rest day' from the mini-expedition to JF-382 Dissidence and proved to be ~40 m to a large lower chamber and multiple ways on. That day finished in a large fossil meander which the team labelled Happy Ending in response to Angry Wank passage in Dissidence explored in the days prior.

A general tourist and photography trip soon after confirmed that there were plenty of leads to check, with the Sleeping Dragon pitches and North by Northwest passages found and earmarked for a return. The return came in the form of a considerable number of cavers and trips over a long weekend. The mainlanders invaded and the 'locals' were mostly random new faces and international visitors. Over the course of three days the cave grew considerably in both length and complexity. It quickly became apparent that we'd moved from 'traditional linear JF cave' to 'crazy, interconnected mess cave'. It seemed like every lead pushed split into three more leads but two of each of those three connected back into known parts of the cave somewhere else. At this point I began to rightly fear the talk of 'final survey'.

Another mainland invasion or two occurred (one of them had six trips over the course of a week) then after this burst of activity interest fell away and a smaller core team of mostly local cavers conducted several trips to mop up the remains. A few important sections of passage were strategically left un- or poorly surveyed to provide an excuse not to draw up the survey: "Can't draw up the survey until we've finished those last few bits, mate."

An attempt at the last few bits was made in 2018 and the onerous task of making sense of the cave in map form commenced. As is always the case, the first draft of the map highlighted a few deficiencies which would need rectifying and one last trip in 2019 sorted that out (mostly). The map is now done and the cave can fester on its own for one, five, ten, twenty years (however long it takes) until some poor unsuspecting caver looks at the map and reads this article and decides to get back in there and find the next bit.

Notes on the map, leads and rigging

Detailed trip reports are available for all but one of the trips to the cave (see the list at the end of this article).

Rigging details (anchors) are generally well-described in trip reports. All bolts placed were non-stainless 8 mm expansion bolts with washer and nuts in place (but no hangers) with the

exception of a few 6 mm concrete screws used on the 2018 trip. Most expansion bolts are marked with a bit of pink tape or a reflective marker. The concrete screws were removed and the holes were not marked. The expansion bolts will be pretty corroded by the mid-2020s – BYO new fancy bolting technology or antigravity pods that have evolved by the time you go back. A bit of 25 mm tubular tape remains in place on the bottom section of the dodgy climb in Dumb, Drunk and Racist.

As previously mentioned, the cave is a complicated mess with loads of overlapping passages. In the interests of mental well-being I opted not to pull out the underlying levels and provide an offset version of each showing full floor detail. Different colours, levels of opacity and variable dashing has been employed to give the viewer half a chance of making sense of it all. The original book work from each trip is available in the archive (hard copy and scanned) and this should provide sufficient info if something really confusing crops up. My hope is that someone will develop a costeffective, autonomous LiDAR surveying drone in the near future and the next generation will produce an infinitely better and sexier map as a result. In the interim, tying in any future surveys with the existing network shouldn't prove too difficult as a large number of permanently marked (labelled pink tape) stations have been left. These are marked on the

Alright, the bit you're really interested in – leads. In my opinion the trade route from the entrance to the deepest point (Heart of Darkness) is a lead-free section. The only exception would be some hard-core diver of the future with a particularly sadistic streak who might poke themselves into the sump. It didn't look promising to me. The only place I've visited with worse mud than this part of Constitution Hole is 'Let the Squalor Begin' in IB-171 Rocket Rods Pot (which sets the bar VERY high).

A physical connection between the pretty passage at station LH36 and the top of 25 m pitch in the Heart of Darkness series has not been attempted. A voice connection was established and the gap is tiny. Connecting them would be an academic exercise of little value and this area is best left unvisited to protect the fragile speleothems and sediments (a 'please don't go in here' sign is located at station LH28).

The far upper levels of Hang Glider Chamber have not been properly pushed (the passage that passes virtually under the entrance and the northern side of the large central flowstone dome).

Everything beyond North by Northwest deserves a better look. The Choose Your Own Adventure area is quite silly and something could easily have been missed. The last trip to the cave indicated that the Ken Sucks area has not been pushed to a conclusion. I hope you like mud and rockfall.

The lower section of Hang Glider has lots of holes and things, some of which weren't descended (e.g. 'undescended pits to Geologists Treasure?' on the map). While I'm fairly confident that all these things will connect to lower levels which were explored from other connection points, one can never be sure.

There is a narrow passage from the top of the P10 on the route the first explorers took to find Happy Ending which links back in opposite station XX17 which was not surveyed and is not indicated on the map. Sorry, only God is perfect.

I've not been beyond the Virgin Fever Traverse but apparently the main Happy Ending mega-meander terminates in a large sediment blockage just asking for some qualified miners and sluicers (not a five minute job though). It's the south-easterly-most point and really should go somewhere good. Similarly, Just Out Of Reach is an unknown to me. If you go there, please take a stick and retrieve my bit of rigging tape someone dropped in a hole and couldn't reach.

By all accounts the Dragons Guts are awful. Don't go there. (I'm now happy to wager that this is where the big breakthrough will be found.)

The whole Dick 'n' Balls, Uphill Gardener and Mega-Space area might yield something (probably a second entrance if anything) but here I do have to acknowledge that Dickon Morris pushed most of this stuff and the feeling I got caving with Dickon (secondary to the one that made me want to vomit and self-harm) was that if there was a way on then Dickon would find it.

There are a few random question marks on the map but I have no recollection of whether they were really open leads or not. Go and find out.

Thanks very much to all the people who contributed to the exploration of this cave – there were lots of you (there are twenty names on the map). I have mostly good memories of it. I'll happily never go there again though.

Further Reading (trip reports)

Jackson, A. 2013 JF-463, JF-599, JF464 and a few others. *Speleo Spiel* 395: 9-10

Jackson, A. 2013 JF-463. Speleo Spiel 395: 18-19

Jackson, A. & Euston, M. 2013 Junee-Florentine Mini-Expedition. *Speleo Spiel* 396: 10-15

Jackson, A. 2013 JF-463 Constitution Hole – August Blitzkrieg, Trip 1. Speleo Spiel 398: 8-10

Jackson, A. & Gauthiez-Putallaz, L. 2013 JF-463 Constitution Hole – August Blitzkrieg, Trip 2. Speleo Spiel 398: 10-12

Brennan, N. 2013 JF-463 Constitution Hole – August Blitzkrieg, Trip 3. *Speleo Spiel* 398: 12

Coxson, C. 2013 JF-463 Constitution Hole – August Blitzkrieg, Trip 4. *Speleo Spiel* 398: 12-14

Morris, D. 2013 JF-463 Constitution Hole – August Blitzkrieg, Trips 5 & 6. Speleo Spiel 398: 14-15

Jackson, A. 2013 JF-463 Constitution Hole – Clean Up Crew. *Speleo Spiel* 398: 16-17

Jackson, A. 2013 JF-463 Constitution Hole. Speleo Spiel 399: 4

Jackson, A. 2013 JF-463 Constitution Hole, Invasion Day. *Speleo Spiel* 400: 16-17

Hooper, A. 2014 JF463 Constitution Hole. *Speleo Spiel* 403: 6-7

Jackson, A. 2018 JF-463 Constitution Hole – Righting past wrongs. *Speleo Spiel* 427: 4-5

Jackson, A. 2019 JF-463 Constitution Hole – One last poke. *Speleo Spiel* 433: 27

JF-237 The increasingly-incredible Niggly Cave 15-16 June 2019

Alan Jackson

Party: Rolan Eberhard, Alan Jackson, Gabriel Kinzler

Rolan summed Niggly up pretty well in the title of his 1991 article – "The Incredible Niggly Cave" (*Speleo Spiel 267: 2-6*). At the time they hadn't even found the Mother of God extension, which added significantly to the cave's incredulity. Recent developments now make that description seem a little understated; lacklustre perhaps. The Niggly situation is currently stupendous, outrageous, even magical. Things have been on a bit of run in there lately and the most recent trip was no exception.

After the amazing success of the Growling connection dive trip and all the new wet and dry passage pushed, I was prepared for the remaining leads (admittedly numerous, but not overly promising) to crap out. But enthusiasm (particularly in Gabriel) was buoyant so a quick return was planned. The usual names were suffering from work, family and personal issues. Rolan was keen to see what all the fuss was about though.

It was a delight to see only three bags between the three of us and not one of them particularly heavy. Steve's a nice guy but the excess baggage he brings to the party (and makes other people carry) can be a little tiresome. We were underground about 10-10:30 am. I fiddled with the rigging in a few spots to make it a little easier and try to stop concrete screws working themselves undone. We hit the bottom of the pitches at about 1 pm, rationalised gear into two bags and popped over the Tyrolean. The recent snow melt episode had resulted in significant flows from the inlet halfway along the Vietnam passage, producing lots of new muddy pools to stomp through. We traversed to the base of Mt Atlantis and refined our plan.

We'd collected the wrecking bar with the intention of cleaning up the leads in the Gotcha area. Its first use was making Astro Boy Squeeze Rolan-friendly. The Gurgler was a possibility but first real cab off the rank would be accessing the void beyond the dolerite boulder at the far end of Slick Digits and then tidying up the unsurveyed meander Gabriel had looked at briefly which we presumed would simply run towards Sloppy Seconds before dying in the other side of the muddy rockfall. Rolan didn't like the Slick Digits crawl; neither did I to be honest. He did like the main Gotcha section though. At the limit of previous exploration (station AG40) I machined the rounded dolerite from the clay matrix in the ceiling until I could squeeze over the large boulder on the floor. The joy was short-lived though with the small chamber (all in hanging death dolerite cemented in clay) leading to a squeeze down into solid but too narrow passage. While I was looking at this Rolan starting pushing the other tight lead from station AG40 (effectively below where I had been - something Gabriel had declared dead but I'd not looked at on the previous trip). He chipped some rocks off to make it wide enough then squeezed through lying in a horrendous mud slurry. The next bit looked horrible so he retreated and sent me in. Meanwhile, Gabriel headed off down his canyon/meander a few metres back to see if he could pass the climb that had stopped him last time. I savoured the slurry and pondered the next move. It was tight (really tight) but there was a drop and the sound of a small waterfall so I chipped at the walls then poked my head in. The squeeze opened out over a spacious ~6 m drop and I did some more pondering. Eventually I committed to a head first attempt, bridging with arms over the drop until I could get my legs through. The pondering turned to serious soulsearching/fear and I requested a belay. Several metres of tape was cobbled together and Rolan body-belayed me while I tested the integrity of the ledges below me. I dropped down a couple of metres to a broad ledge and traversed it. The water issued from a narrow slot, cascaded down to the floor in a nice ~4 m wide circular pot with a flat gravel floor then disappeared into a narrow slot on the far side (back under from where I'd come). I didn't bother dropping right to the floor (getting out again would have been too difficult) and gingerly climbed back up into the bastard squeeze. We called it done (no survey – maybe a few legs next time).

By now Gabriel was back and barely containing his excitement. His little drop was climbable and he'd hit a junction with a good stream and it was wide open (figure of speech) in both directions. My previous expectation was that we'd only get downstream on this stream and that it would just be an isolated upstream section of the Sloppy Seconds passage. Instead the upstream passage continued (about 1 m wide and 7 m high) for a bit, a narrow (but doable) tributary came in on the northern side, more 1 m meander until suddenly it got a lot bigger. The stream came out from under a nasty-looking flattener straight ahead; a narrow fossil passage headed off to the left from atop a small mud bank and large empty space beckoned to the right up a large breakdown pile. In hindsight I'm not sure why but we went left first. This went for about 50 m (east) and finished in a draughting muddy slot which would yield to some oldfashioned hand digging. There was a bit of eroded stal hanging off the wall which gained Gabriel's attention and he christened the passage 'Flapper'. We laid down station RAG1 and surveyed out to the four-way junction (RAG11).

Rolan bounded up the slope for 30 m or so and was keen to continue but I was mesmerised by the sight of the stream passage barrelling on uninhibited to my left (west) - the other side of the flattener. With forward probe Rolan realigned, we set off again. It got a bit silly at this point. The passage was very low gradient, a healthy stream burbling away, ~3 m wide and ~6 m high and nice long legs (rarely less than 10 m and at one point consecutive 43 m legs were achieved). It just went and went and went. Not much in the way of side passage (one ascending rift was noted and a marked survey station left at RAG21). At one point a lovely limestone slab in the shape of a menhir lay on the ground; Asterix and Obelix will no doubt get a mention on the final map. The water disappeared for a brief while but came back again in a lovely flat mud-floored section with a narrow meandering channel snaking its way through the sediments; we stuck to the water channel wherever possible to avoid leaving tracking through the lovely mud.

Things then started to look ominous. The ceiling lowered, rockfall piled up on the right and we prepared ourselves for the end. It was not to be. The rockfall was easily ascended to a large chamber/aven (~20 m wide, 40 m long and 50 m high). Rolan searched the far end while G and I surveyed through. Before we were done he returned with the news that it barrelled on and up with plenty of large (ok, massive) dolerite boulders. Onward Christian soldiers ... if we must.

It went on with lots of small climbs and scrambles in ~5 m wide vadose canyon. Lots of dolerite, mud, gravel, avens etc. The gradient steepened, the climbs got trickier (I even had to put my gloves back on and use my hands a few times) and finally it looked properly over. A 50 m blank wall soared overhead, gypsum-encrusted walls glittered and a lower gravelly chamber to the right beckoned with the noise of the stream. Rolan, sensing the easy going was over, turned his mind to camp. Gabriel couldn't resist having a look and came back with reports of continuing passage not unlike Tigertooth Passage (which he christened Sabretooth Passage). The old farts were done and youthful enthusiasm was squashed; we still had the horrible muddy tight stuff to survey to be able to connect our new data into the old survey. Station RAG46 was left as the starting line for next time.

The retreat was simple enough. On the way we climbed up at station RAG21 to find the passage blocked with dolerite not far in. Back at RAG11/12 we picked up the instruments of torture again and surveyed the grotty narrow stuff. We left a station (RAG53) at the small inlet junction for a future trip but at the junction we'd come in at earlier in the day I expressed my preference for surveying downstream from here to confirm it just went for a bit then crapped out before connecting with Sloppy Seconds (if it was only a tiny gap it might prove an easier way to access this area than the bloody Slick Digits crawl). It did as expected, coming up a mere 10 m short - Petr and Pat would have had a much more rewarding trip last time if this little blockage hadn't got in the way. It might be pushable at stream level but it would be truly horrible. Finally the last few legs were shot to connect back into station AG43 from May and we could bolt for camp, although 'bolting' isn't exactly the right term for the Slick Digits slug. We settled back at camp around 10 pm and revelled in the day's discoveries.

The next day a lazy 8 am awakening, gentle ascent of the pitches and easy plod down the hill was undertaken. It was quite a civilised day and getting to Maydena around 2 pm allowed for a good dose of hot chips and coke from the shop – luxury! We listened to Pink Floyd's *Wish You Were Here* on the drive back as Rolan had suggested it the previous day for the new passage. The name worked on many levels and it has stuck.

I managed to fend Gabriel off till around 7 pm before we sat down to enter the data. We knew it was about 220 m west from the end of Slick Digits to Tiger Mountain in Growling, so after we'd pushed out what had to be in excess of 500 m practically due west we'd been theorising underground that we must have missed Tiger Mountain to the south and been heading for the JF-396 swallet. What the data entry showed us was that we'd not allowed for the data plot being oriented to true north and the in-cave stuff to magnetic north. There was a good 14 degrees we hadn't allowed for and that resulted in our passage heading almost parallel to Dreamtime/River Lethe, with the last station placed almost immediately above Dreamtime Stonedown (but about 70-80 m above it). I've had a guess that maybe Dreamtime Stonedown is the western side of the talus cone that we conquered the eastern side of. Whatever the situation really is, with Gabriel's little bit of unsurveyed Sabretooth Passage we'll have overlapped Growling and need to start hoping for something that goes down. The day's survey tally was just shy of 740 m. Just another trip to Niggly which created more leads than we crossed off. Looks like we'll be going back.

Seniors Day Out Without Carer

Cave Hill, Florentine Valley

16 June 2019

Bill Nicholson

Party: Philip Jackson, Bill Nicholson

We left Hobart with no clear objective in mind except to climb up onto Pepper Pot Plateau and then decide, over a cuppa, as we still have a number of projects underway (understatement).

Jacko was keen to continue the dig in JF-683 "Doing God's Work" and I was interested in having a poke in JF-441 "Index Pot".

I ended up having a minor epic in JF-441 where I got a bit stuck for a minute (a long minute), contemplated brute force over cantilever assist, brute force won the day and there was peace in the world. JF-441 is a point of interest as its location is near both the Pepper Pot Master Cave and JF-683 and on this windless day was emitting a reasonable draught.

The remainder of the day we continued on with the dig in JF-683, having much fun in the mud, Jacko more so than me, he couldn't stop making mud patties, and making good progress.

Mole Creek Weekend

22 & 23 June 2019

David Rueda-Roca

Party: David Bardi, Craig Challen, Tony Rooke, David Rueda Roca, Sandy Varin, Djuke Veldhuis

We went to **Devils Pot** on Saturday morning. I started the rigging from two trees as per the instructions. Unfortunately, I then started the abseil on the wrong side and after eight meters, more or less, I came up, as I remembered that the rigging instructions say that you see the waterfall when you start the rigging. Then I moved to the right side (looking down) and very soon I could see the next bolt below. The waterfall was spectacular and the canyon was wild! Very good fun.

I continued progressing through the canyon attached to the rope till the next three bolts (two on the opposite of the canyon to the third) and I continued the rigging as per the rigging instructions, leaving the next rope attached to the end of the first one, and tied in to the first of the two bolts. The waterfall was pumping a lot of water.

I descended and continued the easy rigging (by the way, Janine, it is very well bolted, avoiding all the water (but not completely the spray at the beginning) *Thanks!* - *Ed*).

I rigged the three offsets and then I descended looking for the bolt that, in the description, is 6 meters from the bottom. Well, it is not. It is just 1.5 meters from the water level (why will become apparent very shortly...-Ed). I descended to it and crossed the rebelay (this rebelay does not make much sense, 'cos you cannot go to the other side of the rock flake as the bottom is flooded with water and it is more than 3 meters deep. But it does make sense if the cave isn't flooded!

Its purpose is to keep you out of the spray at the bottom, in high flow conditions...but maybe not this high flow - Ed).



David RR getting ready to start down.

Photo: Djuke Veldhuis

I rested on a rock that was protruding from the water and close to a big log. I waited on the sharp rock for David Bardi who followed me. I asked him how to continue, as it seemed that we would need to swim (which is a normally totally dry piece of cave - Ed).



And off David goes
Photo:Djuke Veldhuis



The rest of the team waits while DRR finds the canyon

Photo: Djuke Veldhuis

David jumped into the water and swum to the other end of the hole. He said that he could not touch the bottom when he jumped into the water. I asked him if perhaps I could jump into the water from the other side of the log and walk to the other side of the hole. At that point, the water level was close to my hips (just above my balls), but I did not need to swim. Anyway, the water was quite cold and my body felt it immediately. I inspected the narrow continuation to the last third pitch, but suddenly Sandy called us to come back up. It seems like Tony saw David swimming to the other side of the hole and he decided that swimming was not an option. Therefore the trip was turned (It would be interesting to see how much of the bottom of the cave was flooded/sumped in these conditions - Ed). We crossed the hole again (without swimming this time) and started climbing the log to the last bolt where David started prusiking up. I followed him, derigging the pitches.

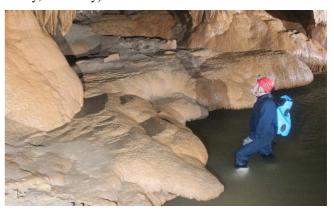
Once we finished the derigging, and as the permit cave for that day was Lynds Cave and we did not want to get wet (well, David and me were already), we moved to Anastomosis. I followed the dry gully until we found the entrance and once inside I turned to the left as per the map. We went to the point DA75, as indicated. We came out and then Tony found some tapes that we followed. These tapes are fine but they do not get you to the point where we had left the bags. Therefore, when I heard the waterfall, I bushbashed a little bit till I found them and called the others.

Genghis & Croesus Caves

Next day, as it was cold and people did not want to get wet, we went to Genghis Khan. Great cave (small but good formations (I have been twice in Kubla Khan but never in GK)).

Once the sun heated our butts a little bit, we moved to Croesus (*I thought they didn't want to get wet! - Ed*). I told the people that no knee pads were required (at least this is what I remembered from the time when we went with Alan and Anna).

Tony did not come as he preferred to wash the ropes at the Mersey river. I guided the people to the Golden Stairs. Once there, Sandy took command and decided to go on. I was unsure, but who can stop Sandy? Then everyone really loved me for saying that the knee pads were not needed. We continued for more than a hundred meters or so through rock pile and low tubes, till people started losing interest (not Sandy, obviously).



Random personal archive photo in Croesus Cave. Chris McMonagle admires his territory. Photo: Grant Elliott

Exit cave track wanderings

29 June 2019

Janine McKinnon

Party: Serena Benjamin, Janine McKinnon, Chris Sharples, Ric Tunney

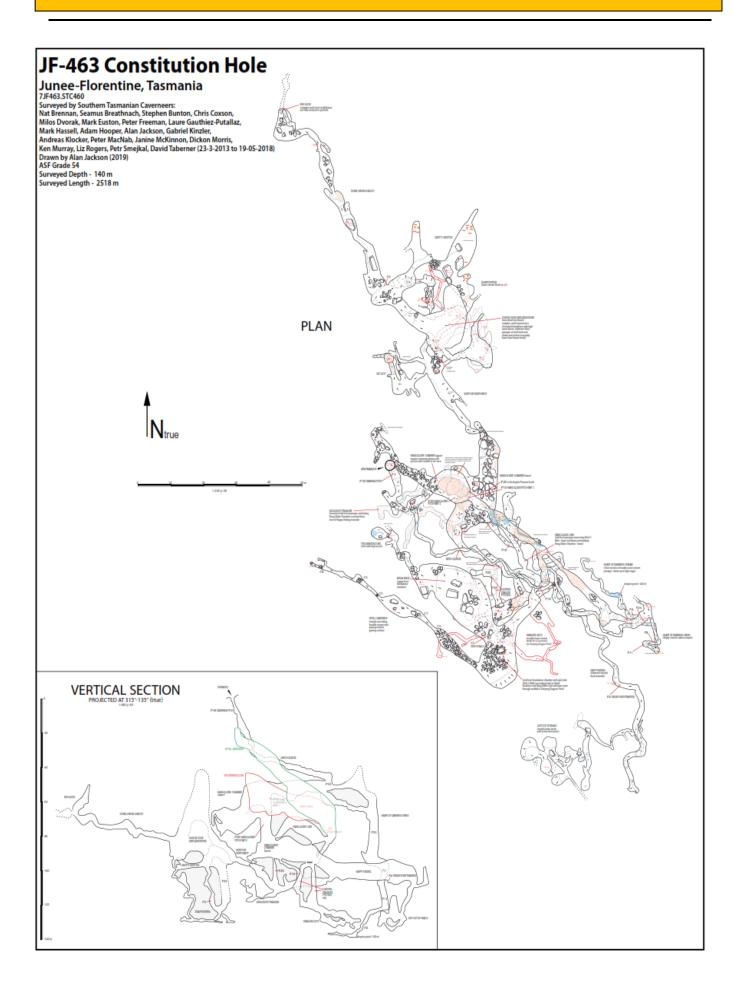
In preparation for the planned push in the sump pool in Mystery Creek passage in Exit Cave we thought that a very close inspection of the state of the track was required. A very, very close inspection, done at a very, very slow pace. A few of the members of the team came along for consensus on assessment.

The walk in to the cave was relaxed with frequent stops to check the track condition. Quite a bit of this was needed. The "new" D'Entrecasteaux crossing "bridge" tree was examined carefully, but not as much as it needs to be yet.

Lunch was partaken of near the cave entrance. Water levels were moderately low for this time of year, and the track surprisingly dry. Lack of rain will do that. Whether this state of affairs will continue long enough to organise for a dive during winter remains to be seen (and this state of affairs seems to be over at the time of publication of this issue – Ed).

The walk back was much faster. We all agreed that the track is in excellent condition.

Other Exciting Stuff



Herberts Pot Conservation Project









By Stefan Eberhard

Summary

Herberts Pot is one of Australia's "classic" caves. It has very high speleological and conservation values. The cave has been closed and inaccessible to speleologists (cavers) for 25 years. That situation is now changing with the development of a Cave Access Policy (CAP) and Cave Zoning Statement (CZS) by the Parks and Wildlife Service (PWS) who manage the cave. The CZS is being developed by PWS with assistance from Tasmanian speleologists, in a collaborative initiative of the Tasmanian Speleological Liaison Council (TSLC). The initiative partners include the TSLC, Northern Caverneers, Mole Creek Caving Club and Southern Tasmanian Caverneers.

Brief history

Herberts Pot was named after Herbert Howe (Figure 1) who previously owned the Mole Creek farm on which the entrance is located. Most of the cave was explored and surveyed by members of the Southern Caving Society (SCS) in the late 1960's and early 1970's. Relationships and trust between the local farmers and cavers were very good in those times, but deteriorated in the 1980's when parts of the Mole Creek system (including Herberts Pot) were listed on the Register of the National Estate. Fallout from this was loss of access to Herberts Pot and other caves on private land in the Mole Creek system. In 2000 the Tasmanian Parks and Wildlife Service (PWS) purchased two blocks of land containing significant parts of Herberts Pot but not including the entrance which remained on private (freehold) land. A few years later further land was acquired which contained the entrance to Herberts Pot and enabled PWS to assert complete control of the cave. PWS installed a gate on the entrance and the cave remained closed pending a management plan.

Brief cave description

Herberts Pot is the longest (5.7 km) and most physically demanding cave at Mole Creek. After a tight and arduous entrance passage the cave connects into a magnificent stream way – the Mole Creek – that extends in both upstream and downstream directions. Trips to the far upstream or downstream parts are long, wet, cold and hard, with rock piles, pools, cascades and waterfall climbs to negotiate. Most of the cave is very robust and resilient to impacts from people moving through, however some side passages and upper levels contain outstanding

formations, some of which are extremely fragile and vulnerable to deterioration or damage.



Figure 1. Herbert Howe, the highest hat in the centre back. Photo courtesy Rod How.

Collaborative initiative

The Herberts Pot Conservation Project was born from the frustration felt by northern speleologists at the hurdles and delays in regaining access to the cave. The idea was to engage the resources, capabilities and expertise of Tasmanian speleologists and assist the PWS to develop the CZS for Herberts Pot. At a CAP planning meeting in Deloraine in November 2018 a detailed Proposal prepared by the TSLC and caving club partners was presented to the PWS where it was unanimously supported; a win-win for all parties.

The strengths of this initiative are:

- Speleologists are highly motivated and committed;
- Speleologists are available to run trips as often as needed to complete project within a reasonable time frame;
- PWS receives the benefit of speleologists contributions, including personnel, expertise, data, time and equipment at no cost to PWS;
- Speleologists collect and document new knowledge about the cave and its values;
- Data and knowledge are shared;
- Trust and collaboration between speleologists and PWS is nourished.

Shared goals

The Project involves Tasmanian speleologists undertaking field familiarization and conservation assessment trips to progress the CZS in collaboration with PWS by:

- 1. Identifying and documenting significant natural values, sensitive features and areas (including speleothems, sediments, ecology, bones, other).
- 2. Describing specific conservation issues associated with access to each identified sensitive area (and feature).
- 3. Tabling options for maintaining conservation values, and where practicable, rehabilitating impacted areas.

Field coordination

Field trips are coordinated by the caving clubs. The field trip coordinators for each club are: Janice March (NC), Deb Hunter (MCCC), Stefan Eberhard (STC). The club coordinators liaise with each other in scheduling field trips and tasks.

Sharing data, knowledge and perspectives

After each field trip, photos and a trip report describing conditions and conservation / safety issues are promptly uploaded and shared on the project Dropbox site. The use of Dropbox has been a very efficient and constructive means of sharing information, photos and building collective knowledge and understanding of the cave, and for planning future trips including jobs needing attention. The Dropbox contents are shared with the registered project members as well as the PWS Karst Ranger at Mole Creek, and the Karst Officer with the Department of Primary Industries, Parks, Water and Environment (DPIPWE).

Summary of field trips and conservation initiatives up to May 2019

In the four months since this project commenced in February 2019 there have been around ten familiarization and conservation assessment trips into Herberts Pot. Route marking and protective string lines or tape have been placed on "as needs" basis on most trips (Figure 2). Some small temporary signs have been placed for future parties to identify sites needing surveying and/or route marking. Several lightweight and removable route marking and string line methods and materials have been trialled, which can be adapted or upgraded as necessary (Figure 3). As a demonstration of method, reflective navigation markers have been placed in sections of the entrance series where the way on is not obvious. In other parts of the cave, pink or orange flagging tape has been placed to assist route finding through the numerous rock falls. One trip completed an ecological baseline of the entrance series to the Keyhole and partway downstream, and collected specimens of Anapsides mountain shrimp for taxonomic and genetic studies (Figure 4). Amphipod crustaceans and tiny white flatworms live in the entrance series stream, where they are vulnerable to being trampled (Figure 5). The entrance series also contains some recent animal bones which have been marked with flagging tape to protect them from trampling.

The more remote sections of the cave contain some very spectacular formations (Figure 6). More protective measures need to be installed before the cave is set for wider access. The involvement of numerous speleologists in the familiarization and assessment trips is providing balanced and representative input to the zoning and access policy process.



Figure 2. David Rueda Roca and string lines placed to protect soft sediments with a coating of gypsum "snow". Photo Stefan Eberhard



Figure 3. Stringline to protect fragile mud formations. Photo Janice March.



Figure 4. Anapsides swaini in the Mole Creek system are the largest species of Tasmanian mountain shrimp. Photo Stefan Eberhard.



Figure 5. Amphipod crustaceans occur in small streamways including the entrance series of Herberts Pot, where they are vulnerable to being trampled. Photo Stefan Eberhard.



Figure 6. Janice March admiring formations in Paragon Vaults. Photo Ben Lovett.

Safety, search and rescue considerations

Until recently the 45 minute bushwalk to the cave was not well marked for navigation after darkness, this being a disincentive for trips over winter, as well as an additional risk and cause of delay in response times in the event of a search and rescue call out. With conditional approval from PWS, removable reflective markers (kindly made and donated by Tony and Pat Culberg) were installed by Peter Bell and Bronwen Prazak. The track is now easy to navigate at night, in both directions, and makes winter trips feasible and safer.

A stretcher rescue through many of the tight sections in the entrance series of Herberts Pot would be extremely difficult. The consensus of the Project team is to reduce the risks by ensuring members on each trip are sufficiently competent and experienced, and, installing adequate fixed aids (hand lines, ropes, etriers) to minimize the risk of falls. Potential entrapment by rising floodwaters after heavy rainfall or snowmelt needs to be considered prior to entering the cave, and water levels monitored when underground.

Survey and Mapping

The plan of Herberts Pot reveals an intriguingly complex system, with numerous side passages, inlet streams and ancient upper levels, all connecting into the Mole Creek master drain. The Southern Caving Society's 1974 map drawn by Leigh Gleeson remains a showpiece of its time in cave mapping. A vertical profile of the cave was not drawn up at the time, nor were passage cross sections. Both these are needed for better understanding of the system. It is clear from the few trips so far that the existing 1974 survey is very incomplete and several obvious unsurveyed passages have been noted.

To improve understanding of the system hydrology, exploration prospects and conservation management, a modern digitised 3D version of the survey is desirable. Fortunately it won't be necessary to resurvey the whole cave. Most of the original 1974 survey data is available as a Compass file - data earlier entered by Rolan Eberhard. Phil Jackson has made available Leigh Gleeson's original field survey notes. From these sources Peter Bell and Stefan Eberhard are working on reconstructing a digital map in Compass and ARC GIS by adding the LRUD data, ironing out anomalies (there are a few), and improving elevation accuracy for the entrance, for plotting sections and 3D (Figures 7 and 8). In the meantime, to aid current field work in the system, Gleeson's original map has been given a facelift by Glyn Johnson and Peter Bell. The updates include true north and magnetic declination angles in 2019 and 1974, legible scale bars and resizing into three separate sheets for easy printing, laminating and field use (Figure 9).

None of the original survey stations appear to be marked in the cave, creating a challenge for linking in new surveys, however from the original field survey sketches it is possible to identify close-enough tie-in points for the purpose.

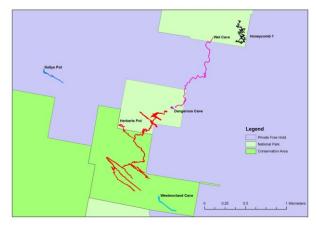


Figure 7. Plan of Herberts Pot and major nearby caves in the Mole Creek system in relation to land tenure. Prepared by Peter Bell.

Conclusion

The Herberts Pot Conservation Project is a major initiative by Tasmanian speleologists. The project is progressing successfully because it is based on collaboration and sharing of data, knowledge and expertise, and it is founded on the big picture goal of conserving the cave along with sustainable access for speleologists. More familiarization and assessment trips are needed to continue to provide balanced and

representative input to the zoning and access policy process. Route marking, stringlines and other conservation / safety work is ongoing. Currently everyone's motivation and willingness is high however short days and high water levels will slow the process during winter. The Project work will pick up again in spring-summer.

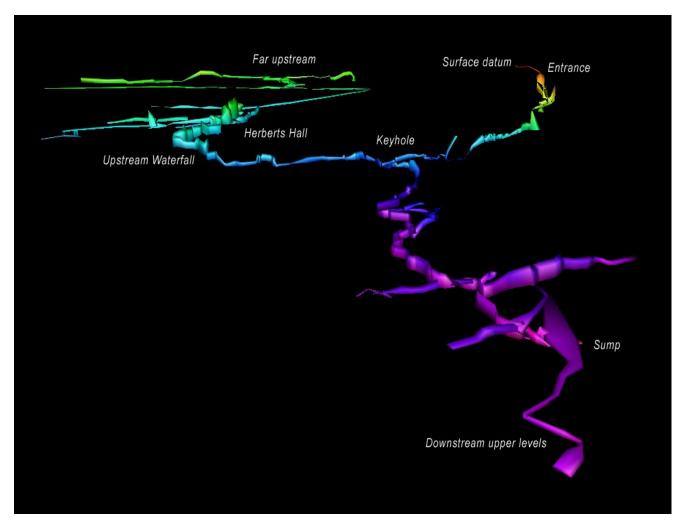


Figure 8. Herberts Pot 3D view in Compass software, coloured by depth. Prepared by Peter Bell.

From the TCC Archives ...#1

an occasional series by STC Librarian-Archivist, Greg Middleton

The Tasmanian Caverneering Club, first speleological organisation in Australia, formed on 13 September 1946, amalgamated with SCS and TCKRG in 1996 to form STC. As a result, STC now has a large volume of archival material, much of which has never been published and exists in single copies only (much on paper which is deteriorating). Our Editor, Janine, in reprinting items from early *Spiels*, has inspired me to look at publishing items from the archives which might be of interest 60 or 70 years on. This should also ensure the longer survival of material which might otherwise, for a variety of reasons, be lost.

To commence what might become a series, I will start with the earliest TCC correspondence on record and what it led to.

Notes on the Tasmanian Caverneering Club

On 21 September 1946 the Editor-in-Chief of News Limited in Adelaide, John Heatherington, wrote to "The Secretary, Caverneering Club, c/o Dr S.W. Carey, Government Geologist, Hobart":

Dear Sir,

A brief report about the formation of your Club appeared recently in the newspapers here. I am wondering if you could give me some additional details, which I require for an article of general interest.

The following suggest themselves as points:

- 1. How many members has the Club, who are its notable members (scientists, explorers etc.?), how did it come to be formed?
- 2. What areas is it proposed to explore, and what would be the duration of the expeditions it conducts?
- 3. What remains, human or animal, does it hope to find, and have any earlier traces of such remains been discovered to excite the Club's interest?

These are very general lines, and I leave it to your discretion to pick out the most interesting information concerning the Club and its aims and to let me have it. Perhaps you would also be good enough to refer me to any published books on the fossils etc., and history of the Tasmanian areas in which you are interested, so that I may inform my mind more fully on the background of the subject.

I visualise an article of perhaps twelve or fourteen hundred words.

I can't find the exact 'brief report' that Heatherington, in Adelaide, may have been referring to but it was probably based on the report which had appeared in *The Mercury*, Hobart, 14 September 1946:

CAVES MAY HOLD HISTORIC RELICS

Tasmanian caves may hold the bones of animals extinct for thousands of years, and possibly those of early man. Dr. S. W. Carey said this at the inaugural meeting of the Tasmanian Caverneering Club at Hobart last night.

Victoria already had yielded the Keilor skull, at Maribyrnog-the oldest human skull yet found-and it was almost certain man was wandering round Tasmania at that time, 150,000 [sic!] years ago.

"We will enter numerous caves that have never been entered by man," added Dr. Carey. "In some instances we will have to enlarge entrances with explosives."

Dr. Carey said equipment needed by the club would include collapsible boats for exploring underground rivers, and dyes for tracing their course, as well as ropes, ladders, and miners' lamps.

The club, the first of its kind in Australia, will explore and survey Tasmanian caves, study their fauna and phenomena, record investigations, endeavour to prevent vandalism, and name features.

Dr. Carey was elected president, and Mr. L. Luckman vice-president, with the following committee: Mr. and Mrs. D. Wilson, Messrs K. Iredale, Douglas Steane, M.S.R. Sharland and P. Allnutt.

But to return to the TCC archives, there is no copy of any reply sent to News Limited, but the second document on file is a carbon copy of a document headed "Notes on the Tasmanian Caverneering Club". While no author is shown, there is every indication that it was written by Dr Carey himself – who else at the time would have had such well-formed ideas about the aims of the club and who else would have had such exact knowledge as to when he was to be appointed Professor of Geology?

It is clear that these notes were prepared in response to the questions posed by Heatherington and they give a better insight into Carey's intentions for the club than does the *Mercury*'s report of what transpired at the inaugural meeting.

NOTES ON THE TASMANIAN CAVERNEERING CLUB

Constitution and Rules. Copy forwarded.

<u>Foundation Members</u>: 27 Present membership: 38.

How formed. Formed following lectures on Caverneering given by Dr Carey before the Tasmanian Field Naturalists' Club and the Hobart Walking Club.

 $\underline{\underline{\text{Members}}}$. We have members capable of dealing with any cave problems which might arise.

The President, Dr S.W. Carey, is at present Government Geologist of Tasmania and is about to resign this position to become Professor of Geology at the University of Tasmania, as from 28th October [1946].

He has had considerable experience in caves in N.S.W., Queensland and New Guinea.

The Secretary, Mr Ken Iredale, and Quartermaster, Mr Peter Allnutt, have had experience of rockclimbing in Victoria and overseas.

The Keeper of Archives, Mr Angus Love, is an officer of the Mapping Branch of the Department of Lands and Surveys and only one of several members with

which were linked to changes in sea level over the previous 150,000 years." Perhaps this is the explanation for the grossly exaggerated date in this report.

¹ Wikipedia reports: "The Keilor cranium has been radiocarbon dated at between 12,000 and 14,700 years BP. Subsequent studies of the local geomorphology identified three terrace formations on the Maribyrnong River banks,

considerable experience of walking in the wildest parts of Tasmania.

Mr Michael Sharland is a noted journalist, author of the popular book "Tasmanian Birds" and president of the Field Naturalists' Club, Member of the State Fauna Board and Hon. Ornithologist to the Tasmanian Museum.

Mr John de Bavay, research assistant to the Director of the Tasmanian Museum.

Mr John Read is Master of Science Subjects at the Ogilvie High School, Hobart, and a keen photographer.

Mr B. Plomley, Director of the Queen Victoria Museum and Art Gallery (Launceston) who is anxious to organise a northern branch of the Club in that city.

Several other members are actively interested though not field participants. These include:
Mr Pedder, a Tasmanian artist of standing.

Mr Gordon Brett, Education Officer (equivalent to Inspector of Science Subjects) in the Tasmanian Department of Education.
Mr Arch Meston, Senior Education Officer (equivalent to Chief Inspector of Schools).

<u>Durations of Explorations.</u> Most trips will be week-end explorations only, but occasionally parties will spend a week or more.

AREAS TO BE EXPLORED

Limestone Caverns are widespread in Tasmania. The distribution of limestone and dolomite (magnesian limestone) is shown on the attached map [not on file]. Most of these blue areas contain limestone caves, and all of them will be within the range of interest of the Club. The best-known caves are those about Mole Creek (41 33'S, 146 25'E), Chudleigh (41 33'S, 146 30'E), Gunns Plains (41 18'S, 146 1'E), Flowery Gully (41 15'S, 146 50'E), Ida Bay (), Junee (42 44'E, 146 36'E), Florentine Valley (42 35'S, 146 30'E), Hastings (43 24'S, 146 53'E).

The latitudes and longitudes given will enable you to plot these places on the map if you desire. Many caves exist in patches of limestone too small to indicate on the map herewith. Such, for example, as those south east of Whitemark (40 8'S, 148 1'E) on Flinders Island. Caves appear sometimes in extraordinary places, for example in the

King Island Scheelite mine (perhaps the biggest deposit of Scheelite in the world) the one is magmatic replacement of limestone by the action of igneous solutions, but some lenses of unaltered limestone exist throughout the ore. During drilling, the tools sometimes dropped several feet through cavities, which subsequent mining proved to be caves in the limestone lens.

First underground work of the Club, will be in the Junee Cave and it had been the intention to proceed with the systematic exploration of all the caverns in the Junee Tyenna area. However the Tasmanian Government Tourist Bureau has requested the assistance of the Club in the exploration and development of the Hastings Caves as a first-class Tourist attraction. So the activities of the Club will be concentrated in that area for the first year and a report and recommendations will be submitted to the Government.

SCOPE OF INVESTIGATIONS

In general, investigations will cover a broad field.

- (1) Exploration: (for background read Casteret "Ten Years Under the Earth". This is one of the most fascinating books yet written, published in French; first English edition by Dents, the later Readers Union edition (1940)).
- (2) <u>Systematic Survey</u>: Carrying levels and measuring heights of chambers with hydrogen balloon, drawing isometric projections, reconstructing underground drainage system and predicting when new chambers should exist and where to cut to look for them. The survey will enable tourist routes to be planned with shortcuts by driving passages to connect nearby chambers, short cuts for wiring through small channels too small to be followed by man, etc.
- (3) Exploration of the Cave Earth: first by means of sampling auger, then by means of dealing when bone remains are expected. The surface was scratched in some caves many years ago and yielded an astonishingly rich and varied collection of bones from many types of animals.

References: Scott & Lord, Clive E. "Studies in Tasmanian Mammalia Living and Extinct, Part IV: The Cave Deposits at Mole Creek" Proceedings of the Royal Society of Tasmania 1921 (1922) p. 6 et seq. Higgins, E.T. & Petterd, F. "Descriptions of a New Cave Inhabiting Spider together with notes on Mammalian

Remains from recently discovered cave in the Chudleigh District' Proc. Roy. Soc. Tas. 1883 (84) p. 191 et seq.

For background, read W. Boyd Dawkins "Cave Hunting - Researchers on the evidence of caves respecting the early inhabitants of Europe".

- (4) Plotting and recording of terraced stalagmites which are common in some Caverns and which probably contain the record of Past climatic cycles of longterm droughts and humid periods. The interpretation of this evidence prove to be of considerable scientific value. A background of such climatic cycles is contained in Zeuner: "Dating the Past - An introduction Geochronology" - Methuen 1946 but this book does not actually use stalagmite evidence which has not yet described in scientific literature, although its significance appreciated several years ago by Professor Cotton of Sydney.
- (5) Hydrology: Many streams have most unexpected underground courses. (For background read Casteret "Ten Years under the Earth" pp.134-166 and 209-235 in the Readers Union edition). Where the remarkable story of the source of the Garonne (France and Spain) is told. These facts have the most direct and damning consequences to hydroelectric and water conservation schemes. (see Casteret on the saving from failure of the Union Pyreneene Electrique scheme, and the total abandonment of the Great Spanish hydroelectric scheme to harness the waters in the Accursed Mountains in the central Pyrenees). In Tasmania, the Club will almost certainly be called in by the Hydro-Electric Commission when the harnessing of the power resources of the Upper Gordon and Florentine valleys is contemplated - because limestone caverns and underground drainage systems may be of direct significance in any such scheme.
- (6) Early Man: The closest watch will be kept for evidence of early man. The oldest known remains of Homo sapiens are Keilor skulls dug up near Melbourne. These Maribyrnong, probably about 150,000 [sic] years old and lived about Melbourne at about the same time as the Neanderthal man lived in Europe. Since Bass Strait has been dry on more than one occasion in the not too distant geological past - there seems no reason why early man should not be found in Tasmania.

- (7) <u>Cave Life</u>: Distribution of cave life such as bats, the Cave Spider, the Harvestman and so on will be studied and recorded. Feeding habits of Glowworms and fireflies investigated. Glowworms are sometimes useful tourist attractions in caves. It is a good thing to know why they occur where they do.
- (8) Photographic Record: A full photographic record of all phases of the exploration will be kept.
- (9) Naming: The Club has been accepted by the Tourist Bureau as the official cavern nomenclature body. As caves are explored, chambers, formations, etc, will be named and these names will be catalogued and thereafter officially recognised.

We will probably never know what the News Limited editor thought of these notes; I have not been able to locate any article about TCC in his paper later in 1946.

One particular line of Carey's thinking might today seem surprising. When contemplating hydroelectric schemes in the "Upper Gordon and Florentine valleys" he seems to see the club's role as helping the HEC overcome any problems, rather than expressing concern about the fate of affected caves or karst.

An item in the *Examiner* a few weeks later (7 November 1946, p. 6) may shed some light on this:

GEOLOGIST FOR H.E.C.

For the first time since its inception the Hydro-Electric Commission is to use the services almost continuously of a professional geologist.

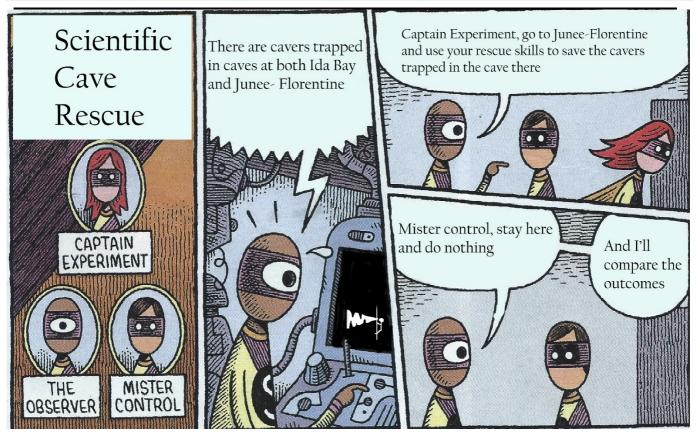
The Premier (Mr. Cosgrove) announced yesterday that Dr. S. W. Carey, Professor of Geology at the University of Tasmania, had been appointed to the staff of the commission as a part-time officer.

The commission had to carry out a great deal of geological investigation and Dr. Carey would do this important work on a part-time basis. Later it was expected that additional geologists would work under Dr. Carey's direction.

Mr. Cosgrove said that Dr. Carey had high academic qualifications and before the war he had performed geological research work for oil interests in New Guinea, where he later served as a paratrooper in the A.I.F.

Since coming to Tasmania Dr. Carey had been a prime mover in the formation of a Caverneering Club to explore and chart Tasmanian caves and to search for prehistoric relics. The Caverneering Club had attracted world-wide interest and the Government Publicity Officer (Mr. G. McCabe) had been asked to write an article on its activities by Reuters.

Fun and Diversions



The Scientific Method can be relied upon to be the correct way to approach every situation Apologies to Tom Gauld.



jmckinnon@caverneer.net.au

make our own article from them.

Here is a survey published in NSS News, March 2019 edition.

(You may need to zoom in to read it clearly - the value of a digital magazine, sorry hard copy readers)

It makes for interesting reading. There are a wide range of answers given, many very poignant.

Why do you go caving, and what have you gained from it?

Has it changed your life?

Has it had a significant affect on who you have become?

Answers to the Editor:

If I get sufficient responses I can

HERBERTS POT MC 202

The Last Page

