

Mendip Caving Group



Journal 385 December 2020



Charterhouse Cave. "The Alien Eggs" – Wilf Harrison



Reservoir Hole - Andy Padbury



Stalagmites. The Frozen Deep – Andy Padbury

Mendip Caving Group Journal 385

December 2020

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Opinions expressed in this journal are not necessarily those of the club or any of its officers.

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Hut Bookings

The Cottage is currently open for essential maintenance only.

Journal 386

The Deadline for submissions to the next journal is 21st February 2021.

Membership News Welcome to:

Gary Bayliss	Sidney Copus
Rob Davis	Mark Rigarsford
Justin Harris	David Alarcon

Front Cover photo	Back Cover Photo
Andy Padbury	Clive Westlake
Reservoir Hole	Andrea Carey - Bar Pot

Editorial

Welcome to the 385th Journal of the Mendip Caving Group.

I am the newly elected Honorary Editor of the Mendip Caving Group and for those of you who don't know me I would like to introduce myself. I have been a member (with a couple of breaks) since 1993 and have been Treasurer, Caving Secretary and Social Secretary (organising the 60th Dinner) along with Andrea. When I first joined the Newsletter was two sheets of A4 which was published very frequently. Things have moved on since then and with the overwhelming influence of technology, information can now be transmitted much faster through Facebook, Instagram and Twitter. You would have thought that magazines and Newspapers both tabloid and broadsheet would have disappeared but no, they still endure. I believe this means that physical copies are still desired and would like to produce a journal, obviously though not with the frequency of the newsletters.

Well, it's been quite year. I even managed to end up in hospital myself with a bruised lung after a senior moment in Spider Hole. (See page 11). Despite the restriction imposed due to Covid 19 the MCG have managed to reopen the cottage (due entirely to the sterling efforts of the Committee) (pause for applause) and we have been able to resume caving to a certain extent. Due to the restrictions however, the Social side of the group has suffered as so few members can utilise the cottage at any one time. At the time of printing the cottage has now closed for all but essential maintenance.

It's been a while since the last journal so please bear with me as I get to grips with the technology one again. There are so many subjects covered by caving that I feel confident that we can produce a quality journal to restore our standing with the other clubs that we exchange publications with. You will probably notice that a lot of the articles have been taken from Facebook. And this is good, although, I have tidied them up in terms of spelling and punctuation, I would like to see more of are reports on your digs etc. There are so many different aspects of caving. Sport, Exploration, Surveying, Photography, History, Archaeology, Geology, Flora and Fauna, the list goes on so there must be something you could write about.

Access to caves in Cheddar Gorge

Further to the decision by Longleat to close the show caves and suspend their operations in Cheddar, they have notified CSCC that with immediate effect caver access to all caves on Longleat property which includes the whole south side of the Gorge, is no longer available. This includes all caves and digs, and affects sites such as Reservoir Hole, Spider Hole, Goughs Cave, Long Hole, Great Oones etc.

Longleat are not averse to reinstating caver access subject to an access agreement with CSCC. Negotiations to formalise an access procedure were started at the request of Longleat a few years ago but were never concluded. Discussions have recommenced and both parties are hopeful of a favourable and positive outcome, however in the meantime all the caves are closed.

Longleat will be keeping a presence in the Gorge for maintenance purposes, but this is all. Approaches should not be made to Longleat or any of their representatives as permission to visit any of the caves will be denied.

Graham Price
Conservation and Access Officer
Council of Southern Caving Clubs

Fairy Quarry Caves

Bat Hibernation Season is upon us once again and **Balch Cave, Fairy Cave and Hillier's Cave** are closed until 31st March 2021.

Rescue from Rod's Pot - Rob Davis

On the 26th January, myself, my son (Ben) and a friend decided to undertake a caving trip to Rod's Pot. A cave we have done several times and one which is entertaining for a couple of hours. We parked up at the top of Link Lane and made our way down the slippery depression to the entrance of Rod's Pot. As we made the left turn into the cave and through the muddy puddle, we came across noises from a Scout group within the Entrance Chamber. They allowed us to get over the bold step to allow them to make their way out and free up the way forward for us past the Blind Pots and into the Main Chamber and a quick look at Hanging Rock Chamber. From here we descended to the Bear Pit had a look around and then made our way back. This is when a minor slip of a few inches created a very interesting end to the day's caving exploits!

As we approached the return over the bold step and into the final rift to exit the cave, Ben placed his right foot across the gap and went to move but as he did his right foot slipped a couple of inches resulting in a stiff and slightly bent left knee to hit the side of the cave. A few minor shouts of pain and Ben sat back into the chamber. As an encouraging Dad I said, "come get on with it," when my fellow caving friend said, 'look at his kneecap!' At which point I saw that Ben's left patella was not where it should be and was now sticking out of the side of his leg; well and truly dislocated! Ben was very stoic and didn't complain about the pain, but he couldn't straighten his leg and the patella was definitely not wanting to pop back in.

As his Dad, my initial thought was my wife is going to kill me! But I now had to instigate an emergency call out, luckily with Ben only a few minutes away from the entrance. My fellow caving friend stayed with Ben and I left him with some emergency items that I always carry, such as spare woolly hat, survival bag and general first aid. My colleague stayed with Ben and protected him from the cold and got him as comfortable as possible. I left the cave and tried to get a phone signal on my mobile, which was non-existent, so I decided to drive back to the main road to get a signal and call the Police and ask for Cave Rescue. The 999 operators for the Police were struggling to understand the process of informing Cave Rescue, so I asked her to call The Hunter's and speak with Roger who would be able to put the call out. I later found out that this did happen and MCR was on its way. As a Fire Officer for Avon Fire and Rescue I picked up the

Police issue at work and there should now be a clear protocol for them.

I mentioned to the Police operator that I would put my car which has blue lights on at the bottom of Link Lane, to indicate to the responding emergency services the access to the lane and to the cave. The first emergency service vehicle in attendance was the appliance from Blagdon Fire Station, shortly followed by 2 MCR officers and then an Ambulance.

With a full brief of what had happened to my son and where he was within the cave, I then returned to be with him and my friend. As I made my way into the entrance of Rod's and the chamber, I was aware of another caver present and pleasantly surprised to see it was a familiar face of Jason Cardwell who had done the through trip with others from Bath's to Rod's. Ben now had two friends with him and me, making sure he was protected from the cold and as comfortable as possible. There was also some humour thrown in for good measure to keep Ben's mind off his knee! I was mindful of the cold for Ben but also the two Jasons, who had been with Ben for about 2 hours now.

Within what felt like minutes a group of MCR and a SWAST Hazardous Area Response Team (HART) member made their way into the chamber and started assessing Ben, his injury and the rescue plan. James, the Paramedic, talked through with Ben the actions he was going to take and offered Entonox for Ben to puff on before he reduced the knee. After about a couple of minutes of sucking on the gas, Ben started to drift off slightly and this gave James the moment to straighten Ben's leg and at the same time apply gentle pressure to the side of his dislocated patella and within seconds the knee cap popped back into place, without a sound from Ben. Next was the instigation of the removal and rescue plan. With Ben's knee in a splint the MCR members rigged an improvised harness for Ben and decided to gently and professionally manhandle him up into the high tube exit from the Entrance Chamber and from here through the entrance twists and puddle to fresh air. I have been told that as soon as Ben got to the surface, he was off, stomping, albeit with a limp, to the Ambulance unaided. Ben has since said he can't remember any of that part of the rescue, I am sure due to the effects of Entonox.

Thanks to Jason Cardwell for sending me this article.

Charterhouse Cave to the Grotto of the Singing Stal – James Wilfred Harrison

6/10/2020

James Wilfred Harrison, Richard Carey, David Lossi

Richard suggested a 6pm start which suited everyone fine. Sadly, James Major who was planning to come along was ill, so the 3 remaining members set off in Dave's car just a couple of minutes after 6pm. After a quick turnaround as Dave set off the wrong direction from Nordrach (too long off caving Dave, time for some intensive revision!) We headed to the gate rather than the farm as we weren't sure if they were still asking people to keep away. It was cold and windy getting changed which reminded us that colder weather is on the way, no more coming out of caves into warm sunny evenings!

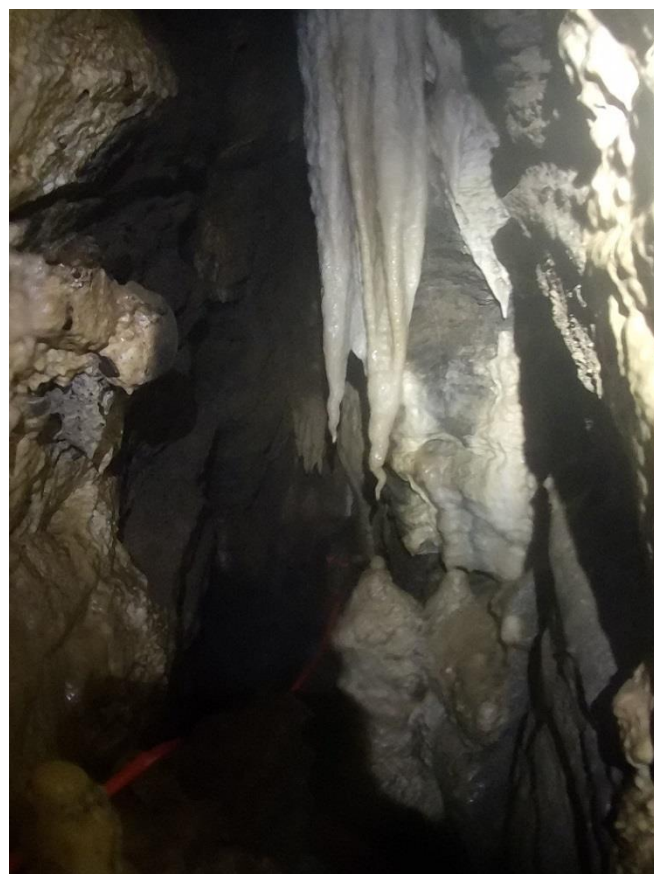
A quick entrance to the cave was followed by good progress through the steep entrance slot which had a small stream running down it but nothing too severe. We made it through Gate Squeeze with a reasonable amount of ease, the trick being to stay up high as the slot is narrower at the bottom. A sharp left turn and some walking and squeezing got us to the stream crossing where initially we went straight on to look at Midsummer Chamber. There is a superb grotto at the end of this chamber. Heading back to the stream crossing we turned downstream into The Wallows. We missed the Curly Wurly stal on the way down as we were concentrating on the water in the Wallows. We entered the stream passage and followed it down into Splatter Chamber where we spotted the old wooden prop - maybe from old caving workings, maybe just a hoax?

From there it was down the normal route towards The Citadel, but we took the climb just before it to visit the balcony and see the "Alien Eggs". Back down to the Citadel and we took a short diversion up Chiaroscuro Passage - another climb up - to see the cave pearls.

Further down The Citadel we dropped into The Aragonite Crawl which was very wet but with plenty of airspace so just a soaking crawl rather than a duck. It's entered headfirst down a steep slope which is quite an impressive route and there's not much option to change your mind once committed! Then a quick climb up, keeping low to avoid the stal curtain, and into the Grotto of the Singing Stal. Sadly, the Stal itself was either feeling rather shy or was singing at a

pitch too high for us oldies to hear. However, the formations in the chamber were reward enough with stal and helictites all around.

The way back was another headfirst drop down back into the Aragonite Crawl with another good soaking. Then steadily back up the way we had come and the exit all too soon came into sight, However, this time, pre-warned by Richard, we did spot the Curly Wurly Stal on the way through the Wallows.



The Curley Wurley

We had expected to get cold heading back to the car, but the wind had dropped, and it was a beautiful clear starry night as we made our way back to change out of very wet kit. This was a relaxed trip at a fairly leisurely pace which allowed time to look at and discuss the superb formations and really spend the time to take in the amazing decorations. Round trip was just under 2 hours. Many thanks to Richard for taking us on a really memorable trip.

Reservoir Hole to the Frozen Deep – Wilf Harrison

1st October 2020

Mike Moxon, Tanya Sparey, Andy Padbury and Wilf Harrison

We'd been waiting for this trip for a long time due to Covid and illness related delays, so it was with great anticipation that we met at the cottage, collected the gear Mike had asked for and headed down the Gorge. Plenty of parking on a midweek term-time morning and we met Mike as planned. There was a bit of last-minute panic over who had what personal kit, but we figured we had enough between us and set off pretty much on time.

Progress was good through the cave; it was mainly dry, and the kit bags were not too awkward (sorry Andy - you go the one with the broken straps!) So, we passed quickly through Moonmilk Chamber. The vertical shaft was passed with no issues and we reached Grand Gallery. We had a quick look into the entrance of Jill's Slither which looked like it was well named - loads of mud! Then on to Topless Aven, through the aptly named Hard Times crawl, into Resurrection and to the top of the ladder descent with a view into The Frozen Deep.

Mike rapidly deployed the first ladder, after a quick

descent to the platform the second ladder was in place and we all descended without incident. The Frozen Deep opened up before us with all the spectacular scale and formations that it is famous for.

It's really hard to do justice to it in any description, it is truly on a scale I have never seen before. The combination of size and decorations must be quite unique. The large pillars and flows are impressive but so are the smaller details like the "squid" formations, the cryogenic crystalline deposits, the mud splashes/holes and the crystal pool. Mike was able to explain a lot of the formations and provided a really interesting background to some of the exploration.

After what seemed like a moment but was probably more like an hour we headed back, with Andy, Tanya and Wilf taking it in turns to follow the wrong route at various intervals. There's a lot of ascent on the way out so we were pretty tired when we emerged into the sunshine after a truly unforgettable trip. Thanks again, Mike!

More Photos inside front cover.



Swildon's Hole – Chris Pearce - Winner of the Tony Knibbs Award

Sunday 4th October 2020

Christopher Pearce, Kay Matthews

An infamous day of exceptionally high-water levels at Swildon's Hole, with many cavers declaring pure recklessness for going caving in Swildon's in those conditions. There was an amber warning in place; however, there had also been one in place on Saturday which had a similar rainfall as Sunday's was predicted. Saturday's water levels had been high but not particularly unusual, so with the rain forecast due to lighten after 1pm we changed and headed to the cave at about 11 to 11:30am.

The stream level was 3-4 inches below the second pipe so, while it was definitely the highest, I'd ever seen Swildon's, I didn't think it would be an issue. After a blasting from the entrance stream we headed down The Wet Way, which was an exhilarating experience. While it was fairly easy, the current in the Well and the U-bend was strong enough to convince us we wouldn't be returning this way. At the Water Chamber we met a group from the Wessex returning from the Double Pots where they had turned around. They described it as passable albeit very "sporting".

The Water Rift was a chasm of spray, but both Kay and I were happy with water, so it was passed without issue. An aquatic but passable stroll brought us to the head off the 8' Drop. We hadn't planned on putting a hand line, so we rigged a pull-down hand line to see if it was essential. After both of us had tested getting back up we decided to leave the hand line as the climb was do-able, although the hand line was essential. Here Dan and Mum caught up with us, with Dan adamantly declaring he wasn't going further.

However, as both Kay and I had succeeded on getting back up, we decided to head to the 20'. With hindsight this was a mistake, the main problem being I had misidentified the crux hazards of the trip, believing the 20 Foot would be critical when the 8'Drop and the Water Rift would actually cause the most problems on the way back. However, at the time I didn't know that the rain was increasing nor that the magnitude of the water rise. Soon we were at the 20' and as we now lacked a lifeline Kay refused to go down. a sentiment I planned to agree with if the ladder went in the water as the current and the rocks washed down the waterfall would be very dangerous. However, by flicking the ladder into a groove I made the descent virtually dry and free climbed back up to Kay. After a chat we decided I would make a quick solo down to the Double Pots and then we would

head out. I'm sure many would think that decision far too risky, and again with hindsight I would not have done it as the extra time allowed the water levels to rise even more. But at the time I couldn't see the levels rising and I knew a group had just been so it must be passable. I quickly descended and reached the Double Pots, the second was a whirlpool and with no easy way back up. I turned around to head back to Kay. The current against me was considerable but it was uneventful progress to the crawls below the 20".

On the way in I had been blasted through here, so I suspected they were going to be problematic. The first few required a bit of a struggle but one of them was particularly "entertaining" requiring a several attempts to position myself out of the water to prevent water backing up over my head and then washing me downstream. These constrictions would definitely be one of the first places to become impassable and a hazard that I hadn't accounted for when I had descended the 20'. Back at the 20' a quick breath to clear some of the adrenaline caused by the constrictions followed by a free climb back up to Kay.

Heading out from here was strenuous but not problematic. Upon nearing the 8' Drop I joked to Kay that the 40' was our backup if the 8' Drop was impassable. Kay got up with a fair struggle, so I passed the bags through to her and then went for it. However, I blocked the water more than Kay did, so it backed up, the force just increased and increased until the strength drained from my arms and I was hurled back down to the bottom. Again, and again the same thing happened, a struggle to the top and a dive through before the inevitable tumultuous fall back to the bottom, except I was now certain water levels were rising. I attempted to shout to Kay to rig the 40' with the rope she had with her, but communication was impossible. So, before I lost the strength to do so I began to climb the 40'. Climbing was fairly easy with good handholds but still far from ideal when cold and tired. Thankfully I spotted a hole 6m up which led via a squeeze down to Kay. Relieved to be up we packed up the bags and began to head out during which time the remaining airspace at the 8' had halved.

Upstream the going was slow. The current kept washing Kay off her feet so I stood behind her to help push her up. At the final section of the Water Rift the maelstrom had tripled in ferocity with a slow careful creep required to make progress. The flow was mind

numbing; every shred of concentration solely focused on inching forwards while not getting swept away. Upon reaching a chock stone we climbed out. At this point the kit bag was washed away into the torrent. Back at the Water Chamber we met Pete Glanvill and his team who had been videoing us as we fought the torrent. They then left to check out the Wet Way while we took the “Dry Way” out. The amount of water entering the Old Grotto was exceptional with lakes of brown foamy water over normally dry stal combined with thundering waterfalls. Obviously there was no peace for the wicked as the reminder of the Dry Way was a strenuous fight against the current which climaxed at Jacob’s ladder which had a sizeable waterfall chucking down on us, because we’d clearly not had enough excitement on this trip so far.

At the top the water in Shower Bath Chamber was tremendous; easily triple or quadruple the flow of when we entered. Once we’d climbed up into the entrance chamber, we attempted the blockhouse

though aware that the tree exit might be our only option. However, I saw Kay vanish, so I followed, emerging to be told abruptly to get out. Slightly bewildered I did, and it was only when mum stood up and released the flood of water she had been blocking that I realised why.

So overall it was hugely fun in places and mildly terrifying in others, although we got out safe, I will admit the margins of safety if one of us got injured was too tight. So, the lessons I would take away from that is that the crux points in high water can be very different to those you expect. Pick reference points so you can easily tell if water levels are rising or falling and act accordingly. Personally, in those conditions I would still say it was safe to go into Swildon’s as the tree entrance was always passable, but with a great deal of caution and not going below The Water Chamber. Additionally, the forecast was not particularly accurate, with huge local variations in rainfall making it harder to predict water levels.

My trip down a “Wet” Swildon’s Hole – Nicky Pearce

Sunday 4th October 2020

Nicky Pearce, Dan Matthews

For nearly 20 years of caving I had only been aware of the Wet Way down to the more “exciting” parts of Swildon’s Hole and only in last 3 years did I realise there was more. Having then only done bits since, I really wanted to fix in my mind the Upper Series, so having convinced Dan he really wanted to, we braved the wet weather to go. Reaching the entrance, I was pleased more than concerned about seeing the pond outside the cave as in my early years it had been a common site in normal conditions.

Christopher and Kay soon powered down The Wet Way and Dan and I started our bimbles and quickly I realised that all the names and routes of the passages in my head were mixed up and it was great to get them firmly fixed in my head at last. So, the Long Dry Way, Kenney’s Dig to join The Wet Way on the upper series, staying high to miss The Well. This is where I normally cause water to build up and today was not a day for that; to The Water chamber and fascinating sight to see a quiet stream coming down The Dry Way, downstream, I traversed to miss The Water Rift to the 8ft to find Christopher and Kay. The 8ft looked fun and I was tempted to just go down and up, though as I usually cause the water to back up behind me on a normal day, decided against it. How wise.

My face if seen was wreathed in happy smiles, as having spent the last few months canyoning or in the local surf, I was enjoying the water with its added dimension to cave. We turned around. I tried to walk up through The Water Rift into The Water Chamber but after a brief attempt I decided to climb up earlier and traverse round. After a quick chat with Paul and Sam (Paul Wilman and Sam Drake from the Wessex), though limited by the incredible noise of water crashing around us, we returned up The Dry Way with Dan avoiding the water where possible. He was wearing a furry and me being snug in a 5mm wet suit.

We clambered through the numerous waterfalls. There were 2 points where the air smelt very fresh and made me consider a return to see if there was something new to discover. Soon we were at Jacob’s Ladder. I kindly stopped near the top, blocking the water to give Dan a fairly dry climb while chatting to Pete Glanvill and his pals who were off to clean some formations.

It was only when we returned to The Shower Bath, did we realise the water levels had increased. Paul climbed up but Sam, Dan and I decided it would be better to use The Zig Zags. Dan initially took me the wrong way, up a crawl, just while I had been enjoying not crawling all trip and then had to back track just

beyond Jacob's Ladder to The Zig Zags, which were nice and dry except near the end and now another route logged into my mind.

Dan disliked the look of the Block House so went up the rift to the tree. I disliked the thought of potentially getting stuck in the tree (images of Winnie the Pooh in my head) and preferred the look of the entrance. Paul kindly added a few suggestions as my normal approach out would have been very wet and I had to rethink my footholds and was soon out. We were greeted by a lake. While we chatted, it was clear the water was rising fast. Pete had said, when we met him at Jacob's Ladder that the level was just below the second pipe and now it was slowly working its way up to the grate. It was quickly discovered that my role was to be door stopper to the Block House by sitting in the entrance. I reduced the flow to a very

manageable level. However, it backed up the level in the lake, so I needed to undertake this role judiciously. Watching out for lights below, I spotted some and shouted down a few words of encouragement, not to be heard. Once in position, Kay's hand crept over the edge soon followed by Kay, who then stopped to reach for the ladder and was a little bewildered to be told firmly to get out. Quickly Christopher followed to be also greeted by get out quick. After the initial look of why, actually followed his mother's second suggestion of "get out now" without a word. The understanding flooded into his face of why, when I stood up.

In summary I enjoyed the trip, have a much better map of the upper series in my head and also a healthy respect for how much the cave can change, so next time it rains. **"Hunters, anyone?"**

Eastwater Cavern 13 Pots – Wilf Harrison

13/10/2020

Chris Barrington, James Major, Mark Edwards and James Wilfred Harrison

We settled on Eastwater Cavern on the pre-trip Facebook discussions and met at 6:30pm at the cottage. A bit of discussion ensued about whether we could remember the route between us and we (well the other 3 anyway!) concluded we would be OK if we took a map along just in case. In the end we did not need it so well-done guys!

We drove over to The Hunters' and then swapped to one car to reduce parking at the cave. The arrangements have changed, and you need to park in the lay-by by the green shed (the first obvious lay-by/gateway on the left on the road up to the Wessex). There are also new arrangements for payment - there's a notice on the gate to explain what you need to do. Needless to say, we did not see that until too late and Mark had already jogged down to the farm to leave our cash. Don't worry, they will find it eventually! There was plenty of parking (we were the only ones there, should be space for 4+ cars I'd guess).

A quick change (for the Tuesday night team anyway) although I think Mark was a bit surprised at how long we took. Then over the field and to our relief the stream is still sinking before it gets to the entrance - the sink hole is now a couple of metres across and at least a metre deep so looks like a new permanent feature - so Eastwater is now Nowater....a dry trip was in store!

Down the entrance shaft and a quick discussion on whether the boulder choke had moved in the recent

heavy rain. I'm not sure what the final conclusion was on that, but the guide ropes still get you to the right place. Then through the Woggle Press. We chose the face down feet first approach to this. A quick descent under the loose-looking ceiling on the other side through The Boulder Chamber and into The Canyon and we were starting to warm up nicely. After a slide down the bedding plane to The Crossroads we rigged a handline for Dolphin Pot which is a really satisfying chimney climb with good holds but a couple of tricky manoeuvres. Then it's more or less straight into the "waiting room" above Dolphin Pitch (35ft pitch). Mark figured out a solid way of rigging this - a long spreader looped around a large boulder in the waiting room to rig the ladder and a krab on a sling for the lifeline, so it hangs cleanly over the drop for belaying. Plus, an extra krab through a bolt for a 3rd anchor point.

The pitch is superb, a long straight hang down a vertical slab. It took a while to rig but you don't want to be taking short cuts on this one! Then down to The Bold Step. Having read about this I was a bit concerned but by avoiding any temptation to look down it became just a step and we crossed without too much drama. Certainly, worth the slight stress for the overall trip experience.

We then went down The Muddy Oxbow (opposite direction to the one in MU) and I'd recommend this direction because then the trip up the 13 pots is absolutely superb. A succession of small sculpted round pools a metre or so across is linked by some

interesting scrambling up steps varying from a foot or so to 6 feet high, each leading to a new pool. It was a real pity when we came to the end.

Finally, a climb back up to the Bold Step. Watching from below I witnessed the extraordinary sight of hearing Chris say to himself “You’ve got this” and then quite literally flying across the gap. Thus, achieving a significant first by committing aviation underground. Back up to Dolphin Pitch which we ascended with no issues, on to Dolphin Pot likewise then back up The Canyon. This was much harder with the heavy tackle bags - there is a lot of vertical on this trip.

Back again through the and Boulder Chamber and Woggle Press and out into the refreshingly cold air. Round trip time was 2.5 hours which was not rushing but very enjoyable - a larger group would likely take longer due to the time to get up and down the pitches and doing it faster would mean you would not really enjoy the 13 pots as much. Sadly, the pubs were shut as we emerged on the dot of 10pm. Chris and James volunteered to clean the kit - so thanks for that.

Eastwater is described as a true Caver’s cave. I now know what they mean. The 13 Pots should be on every caver’s to-do list!

A Senior Moment – Richard M Carey

Spider Hole 11th February 2020

Plan A. Replace the ropes on Hazel Pitch.

Jude Vanderplank had the ropes ready to go so we headed off to Cheddar Gorge, parked the car and got into our SRT kit. So far so good. We entered the cave and Jude unlocked the gate on the 11M excavated shaft and with Jude going first, we descended. At the bottom of the shaft, for those of you who don’t know the cave, is a low horizontal tube that emerges at the head of a slip rift. Now, for some reason, I decided to reverse crawl and fell /slid out of the end (about 10ft). I did land on my feet but had sufficient momentum to

(bounce) across to the other side and impacted against the wall. I did put my hands out to try and brace but still managed to hit my head and chest. Once I had stopped moving, I laid up against the rock and apparently passed out. Jude was talking to me and it was as if she had awakened me from a dream. She quickly established that nothing obvious was broken although suspecting possible fractured ribs and **suggested** that I try and stand up so that we could leave the cave.

Plan B. Exit the cave

We left the ropes in place (abandoning the replacements for later) and with Jude assisting I climbed into the horizontal passage. Putting any weight on my right arm caused pain in my chest but I managed it. Jude then passed me and climbed the shaft. Life-lining from the top we managed to extract me from the cave. I wasn’t keen on going to hospital, but Jude was determined that I get checked out in case I had concussion or a cracked rib. Jude called Rich Marlow (Paramedic and Lead Manager for Helicopter Emergency Medical Services, South Western Ambulance Service NHS Foundation Trust) who

suggested that we go the Bath Royal United Hospital rather than Glastonbury as they would have all equipment. After a short wait I was triaged by a nurse and immediately admitted to the observation ward for blood tests and x-rays. A CT scan revealed a bruised lung but no broken bones. The only external proof was bruising on my right hand. I was kept in for observation for 36 hours and then sent home. I would like to express my enormous gratitude to all the staff at the A and E and of course to Jude and to Rich Marlow for collecting my car. That was a very lucky escape!

The Wrong Trousers – Richard M Carey

I have led over 100 trips into Upper Flood Swallet and with this experience believe I have sufficient kit to keep warm and comfortable. I have encountered people who to my mind are not suitably equipped for a long trip. There have been occasions where cavers have been on the trip with unsuitable clothing. For example, one girl went down with only cotton

thermals and wool socks and was blue with cold and shivering. Definitely the Wrong Trousers!

Caving is meant to be a pleasure and given that Upper Flood is a beautiful place it will be more appreciated when someone is not worried about being cold.

Which 18650 battery for my caving light? - Michael Perryman

LEDs have revolutionised caving lights in the past few years. There are many to choose from, with the 'standard' 18650 Li-ion battery being used in some (e.g. the Fenix range). But there is a wide and baffling choice of 18650 batteries available, and there are aspects related to safety, reliability, and longevity, that should be kept in mind when purchasing or using them. Incidentally, the 18650 specification follows the common practice of assigning rechargeable cylindrical batteries a five-digit number, where the first two digits indicate the (approx.) diameter in mm, and the last three digits indicate the (approx.) height in tenths of mm. So, the 18650 battery is approximately 18 mm in diameter, and 65 mm in length, although it may be up to 68 mm long with an internal protection circuit.

Li-ion batteries have the advantages of a high energy density, no memory effect (so they can be charged at partial depletion levels without losing capacity), and low self-discharge (i.e. they hold their charge reasonably well). But they also pose an intrinsic safety hazard due to their high charge density (i.e. contained energy), and flammable electrolytes. Damaged or incorrect charging can lead to explosions and fires.

All 18650 cells contain Lithium (Li) in varying amounts, but it is the other chemicals (and their varying amounts) that determine capacity, discharge rating, and so on. As a result, battery performance, cost and safety characteristics vary amongst them. For example, lithium manganese (IMR) provide high currents, with a low running temperature. Lithium manganese nickel cells (INR) provide low resistance and high current output. Lithium aluminium (NCA) yield long run times and increased shock resistance.

Why all these variants? It comes down to the application: for cordless drills, e-bikes, and e-cigarettes, a high energy density or high discharge current is important. For medical equipment, safety can be the primary consideration. For battery-driven doorbells, a low leakage current is more critical, so that the battery lasts longer without replacement or recharge.

It is the different chemistries (and therefore different intended applications), different battery lengths (due to the presence or absence of protection circuitry), physical form (flat or button-cap anode), charge capacity, nominal voltage, and safety aspects that make the choice of 18650 battery somewhat complex. The choice is further complicated by the many fake

products around. These various considerations are detailed below.

Protection circuitry: protected Li-ion batteries have a small electronic circuit integrated into the cell packaging, which protects the battery against common dangers, such as overcharging. Protected batteries are generally safer to use, although this comes at the expense of slightly reduced charge capacity. **Flat-top or button-top:** many suppliers provide their batteries only in 'flat-top form', in which the anode (+) does not have the small 'button' which we are so used to seeing on these, and on AA or AAA batteries. Indeed, all batteries from the large OE manufacturers (Samsung, LG, Sony, Panasonic/Sanyo, etc) are manufactured in flat-top form. More devices are appearing on the market which require a button top, and these buttons are added post-production. They are either spot welded to ensure a solid, long lasting connection, or (to be avoided) self-adhesive with a clear overwrap to hold them in place.

Nominal voltage: there are three primary nominal voltages used in 18650 batteries, and these are specified when you buy them: the most common available now are 3.6 V and 3.7 V, and either can generally be used (check your light specification).

Charge capacity: one of the most important characteristics in any battery is the amount of energy it holds, usually measured in mAh (milli-amp hours). From the stated capacity and your LED output rating, you can estimate how long your light should last on its different settings. Capacities of relevant 18650 batteries extend up to about 3600 mAh. View higher claimed capacities with suspicion. For example, www.18650.uk offers the following warning: "There are lots of batteries being advertised on eBay, Amazon, Alibaba etc with wild figures like '9000 mAh capacity'. These are all lies. At the time of writing, it is impossible to have more than 3600 mAh in capacity. "Discharge rating: this is the maximum current the battery can provide, down to the low voltage limit. Unless you are looking for applications requiring high discharge rates (say, more than 20-25 W), you can probably ignore this. It is relevant, for example, for power tools, and therefore presumably for some caving drills. It may be more relevant if you are considering more powerful lighting for underground photography or video.

Charging: safe and optimum recharging naturally requires a charger specified as suitable for these cells.

I use a Nitecore Intellicharger i4. This is compact, has four independent charging slots, is compatible with Li-ion and Ni-MH technologies, and it can accommodate and charge 18650s, AAs, and AAAs. Counterfeit Nitecore chargers, usually at suspiciously lower prices, are best avoided.

Cycle life: an 18650 battery, in common with all Li-ion batteries, will not last indefinitely, primarily due to irreversible chemical processes in the charge/discharge cycle. For example, Fenix state that: "A properly maintained ARB-L18 battery is designed to retain up to 75% of its original capacity at 500 full charge and discharge cycles."

Safety: bear in mind that Li-ion batteries work well for caving because of their high electrical/chemical energy. Li-ion batteries are correspondingly potentially dangerous, and due care should be exercised in using, storing, and charging them. Specifically, carry and store batteries in non-

conductive containers, and never with metal objects such as loose change or keys. Check that button-tops are securely attached, to avoid possible shorting of the cell. And if the battery wrap (which isolates the cell body from a short circuit, and houses the protection circuitry) is damaged, retire it!

Suppliers: Amongst many options, I will mention just three examples of reputable suppliers with batteries suitable for (say) the Fenix range: * www.batterystation.co.uk lists the Xtar 3500 mAh (3.7V, 68.5mm) at £9.95.* 18650.uk offer many options, including the Sanyo NCR18650~GA (with button-top, protection, 3.6 V, 3500 mAh) at £6.49* fenixtorch.co.uk supply, amongst others, the Nitecore 2600-3500 mAh at £9.95-19.95, and the Fenix ARB-L18 3500 mAh at £19.95.

Some further details are given in a longer note that I prepared in September 2020, available from me at mac.perryman@gmail.com

In Praise of the Caves of South Wales - Michael Perryman

Our readership is presumably split between those, perhaps older and more experienced, who know their Welsh caves. And those possibly newer to the sport, who have perhaps not yet had the opportunity, or motivation, to get to know them. This short introduction is intended for the latter.

It is just two hours by car from the MCG to the tiny isolated hamlet of Penwyllt, high up in the western Brecon Beacons, that is home to the headquarters of the South Wales Caving Club. It comprises a row of 10 old quarrymen's cottages, split into several bunkrooms, including married quarters, common rooms, a kitchen, changing and drying rooms, a tackle store, and a well-equipped depot for South and Mid-Wales Cave Rescue. Other than for the monthly Committee weekends, there is usually ample space for daytime or overnight visitors, and visitors are openly welcomed (recall that visitors provide essential income for many clubs). Keys for OFD are easily available, usually through advance arrangement. I mention SWCC because I am a member and therefore more familiar with it, but there are other caving huts in the general area, including the CSS (Chelsea) at Llangattock.

SWCC owes its origin and much of its continued existence to the magnificent system of Ogof Ffynnon Ddu (OFD), parts of which lie directly below the cottages. Discovered in 1946, the system has a vertical

range of 270m, and a passage length totaling more than 50km, making it the deepest in the UK and the second longest in Wales. Within its intricate three-dimensional maze-like structure are lengthy passages, spectacular formations (such as The Columns, The Trident and Judge, and Frozen River), massive chambers, and sporting trips to occupy a lifetime. Perhaps its most spectacular feature is the impressive main stream passage, which descends over a total length of some 3km (with a number of short sections out of the streamway before regaining it), from the arduous and remote Smith's Armoury, taking in the crashing Top Waterfall, down through the dramatically banded section of Marble Showers, and picked up again in the lower reaches of OFD1. Throughout its' length, the streamway means business, and is to be avoided in wet conditions: its' devastating flood pulses have claimed two lives and many narrow escapes. Until recently OFD1 was only accessible with a warden who knew the escape route - today, visitors are expected to know the escape route(s) themselves. While much of the system is accessible without tackle, there are sections presenting technical challenges in the form of tricky climbs and unprotected and exposed traverses, and there are several fine SRT routes leading from the high-level passages down to the streamway. The only access restrictions are to The Columns which, to preserve their delicacy, are gated, and access is only permitted on a few days per year. The 2017 survey, by

the way, is a masterpiece of surveying, drawing and artwork: 3m long, multi-coloured, and with QR codes linked to the rigging topos.

The straightforward but hugely spectacular Round Trip in OFD1 is one of my favourites: it takes in several hundred metres of the tumultuous lower streamway, several of the deeper pools crossed on maypole bridges, an ascent into the vast abandoned passages of the Rawl Series (perhaps taking in a detour to the enormous Starlight Chamber), and an exit via the Bolt Traverse, the notorious flood exit route passed along a 50m stretch of traverse wire on sloping ledges 15m above the roar of the streamway below. Another classic is the 5-6 hour through trip from OFD2 to OFD1, descending to the main stream via the tortuous Maypole Inlet, trudging and leaping for more than a 1000m downstream in the massive and towering main stream passage through Marble Showers, then ascending the 20m Divers Pitch to gain access to, and exiting via, OFD1.

For SRT enthusiasts, a descent via the three dry well-decorated Nave pitches (12m, 6m, 10m) into the main streamway, and continuing up to the noisy and windswept Top Waterfall, is a particularly fine trip of 3-4 hours. The volume of water, and its relentless echoing roar, the sheer size of the passage, and the sculpted twisting black and sometimes banded walls, always make this a powerful experience. High above and directly following this part of the streamway are the vast abandoned boulder strewn galleries of Pendulum Passage, a testing journey leading from The Chasm, down the 22m Crevasse Pitch and two further 6-7m rappels, with many other climbs and scrambles along the way, to drop back into the streamway for the 500m or so trudge back to Maypole Inlet, which marks the start of the long haul back out to the OFD2 Top Entrance.

A particularly challenging trip is into the far upstream parts of OFD3, where the upstream limit of Smiths Armoury (lying directly below the stream sink of the Byffre) is gained by a series of lengthy and uncompromising traverses. Straddling the two walls, some 20m above the streamway, and with the deeply incised vadose canyon towering high above, changes in the traverse levels are also called for at critical points. It is a journey that I made once in 1976... and which I will not be doing again! Tigers have done OFD's ultimate challenge: entering at the resurgence of OFD1, making the long, long trip up the streamway to the highest point of Smiths Armoury in OFD3, then exiting again through OFD1.

Across the valley from OFD is the 'jewel of Welsh caves', Dan-Yr-Ogof. The show cave is a major tourist attraction, but beyond it, some 17km of surveyed passage contain a host of spectacular features and formations. Beyond the show cave, progress is by wading through a series of deep cold fast-flowing lakes. A little beyond, Lavatory Dan is one of the most curious phenomena that I've seen underground. You can sit for several minutes in a fine dry chamber then, without warning, water begins to pour from an opening in the roof, growing almost alarmingly in volume. Is the place flooding? No, it's a natural syphon, which continues to run for several minutes until it dries to a trickle before stopping completely to regain its head. The Long Crawl is particularly claustrophobic: a committing body-sized tube which twists and turns for about 100m, first passed by Eileen Davies in 1966, and which is the key to the vastnesses beyond. From here onwards, big passages, grand chambers, and stunning formations abound, places with names like Cloud Chamber (with its thousands of densely packed stalactites) and Flabbergasm Chasm. The Green Canal is atmospheric and beautiful, a long cold swim of about (I'm guessing) 100m, today well-equipped with flotation aids, leading to the Great North Road, and on to the eerily remote Far North. Not as arduous a trip as Far North, the Round Trip is a classic, taking in Trenchways, the airy climb down Avalanche Corner into the flood-prone lower series, and continuing along Thixotropic Passage, the entrance to Mazeways, Dali's Delight, and the stunning phreatic tubular grandeur of Bakerloo Straight. Meanwhile, high on the lonely moors above, and more than 3km to the south west, a sizeable feeder stream tumbles underground at Sinc-y-Giedd, which has been the site of digging by SWCC on and off for the past 40 years. Remarkably, even in raging flood conditions, such as during Storm Dennis, the raging river just disappears down through the boulders. A truly massive system is inferred to lie below.

Agien Allwedd, 30km to the east, and high on the Llangattock escarpment above Crickhowell, is another absurdly big system, with more than 30km of passage. Beyond the first and second boulder chokes are a series of large (and not so large) stream passages: often easy caving, but the seemingly endless boulder hopping is tiring. And, somewhat alarmingly, the big passages just get bigger as you head deeper into the mountain. There are several classic round trips, including the Inner and Outer Circles, none (if I recall correctly) requiring tackle, but all are lengthy and arduous with some route-finding complexities, albeit hugely satisfying. The grand-daddy of them all is the Grand Circle, first following the Main Stream Passage

through four boulder chokes to the Terminal Sump, and returning along Southern Stream Passage, a long, wet and relentless stooping height passage, that seems to go on and on, and on.

Daren Cilau has over 26km of passage, including the truly breath-taking Time Machine, the largest cave passage in Britain. Its absurd vastness is guarded by the infamous entrance series: a 500-m long, restricted and strenuous crawl, including The Vice, making the trip into the further parts of the cave a serious undertaking. On Mendip, I chuckle at the road signs that have been left at a couple of key locations: the red triangular "Flood" warning sign, with "Upper" scribbled in above it, in the entrance series of Upper Flood, and "Wookey Hole: Avoiding City Centre" beyond Sump 1 in Swildon's. At the base of the quarry face where the small insignificant entrance of "Daren" is located, the filched road sign advises "Single File Traffic". Trips to the far reaches are long, those visiting Bonsai Streamway, The Time Machine, Hard Rock Cafe, and the Restaurant at the End of the Universe run to 9-10 hours minimum. To make these trips more feasible, permanent underground camps

have been set up. Ogof Draenen is, at some 70 km, the longest and arguably the most complex system in Wales (don't ask to see the survey), and the second longest in UK behind the Three Counties System on the Cumbria/Lancashire/Yorkshire border. Digging first broke through into major passages in October 1994. Draenen contains multiple streamways, spectacular decorations, and enormous passages culminating in the War of the Worlds, taking second place in bigness after The Time Machine in Daren. I was not caving during the years of the big Draenen discoveries: my first visit there had originally been arranged for 10th October 2020 but was cancelled due to the Covid lockdown restrictions.

There are other major systems in the area: amongst them the 2km long Tunnel Cave above Dan-Yr-Ogof, Pant Mawr high on the moors above Penwyllt, the vertical anomaly of the 5-pitch 100m deep Pwll Dwfn, the 7km long Little Neath River Cave, and Craig-y-Ffynnon.

For anyone yearning for long, spectacular, and predominantly horizontal passage development, the caves of South Wales really are almost on our doorstep.

Ogof Marros, near Carmarthen: the finely decorated stream passage in this recent discovery by SWCC of which the author was part. – Michael Perryman



Shetland Sea Caves - Mike Moxon

Every other year the local canoe club organise a Symposium, so Leonie and I headed up in her new campervan in July 2018. We got the ferry across from Aberdeen on Thursday evening and arrived at Voxter outdoor centre on Friday morning, where a trip was organised to Eshaness – the location of the biggest cave chamber in Britain.

<https://www.bbc.co.uk/news/uk-scotland-north-east-orkney-shetland-289656181>

Unfortunately, conditions were slightly too rough for entering the chamber, so whilst the others headed off to Ronas Voe (more on that later), we and some of the others paddled around Hillswick, where we checked out our first sea caves and stacks of the trip.

The village hall was used for group meals on the Friday and Saturday evenings and morning planning meetings, so next day groups headed out to a variety of venues. I ended up circumnavigating Muckle Roe which has a large number of passages to explore and Leonie was supposed to be back at Hillswick, but when they arrived conditions were smoother than expected and they headed to Calder Geo (see her account) ...

Sunday was too windy, so we did some paddling practice in the relatively sheltered Nesting area, followed by a ferry to Bressay on Monday and a foggy trip around the Gannet colony on Noss, where only the outside edge of the island was in the sun.

Papa Stour on Tuesday is exposed to the westerly wind and swell, fortunately the weather was coming from the south and quite benign for Shetland. Although we couldn't get in all the passages that cut through the headlands, we could do quite a few.

Wednesday, we got ferries to Yell and then Unst, where we paddled up Burrafirth, with its impressive caves/arches and out to Muckle Flugga lighthouse, at the edge of the huge Hermaness seabird cliffs. Then we caught the second ferry again, onwards to Fetlar. Unfortunately, the main road across the island was being repaired during the days, but we were able to stay overnight and leave about 9 the next morning.

Back on the ferry to Yell next day, but the wind was picking up, so we went straight back to the Mainland and Ronas Voe, a very impressive fjord where the cliffs and caves provided more shelter.

Weather definitely deteriorating now on Friday, we chose Vementry, an island between Papa Stour and Muckle Roe with less caves than either (they do have a lot), but with an impressive battery of WWI guns on the north cliffs.

Saturday and the beautiful Tombola beach of St Ninian's was very sheltered, as were the stacks and caves on the west and north sides. Unfortunately, the west edge was fully exposed to gale force winds and swell, but they dropped just long enough for us to sneak around the corner and make it back to our start position - where some more sensible kayakers were spending the day on the beach.

Our final 24 hours was spent watching the wind-blown waves and Puffins at Sumburgh Head, where we had to wait for a helicopter to land before crossing the airfield and Lerwick Museum which is well worth the trip (especially their restaurant), before "enjoying" the rough ride back to Aberdeen on Sunday night.

(Photos Inside back cover)

The Big Three! - Léonie Woodward

This was the third trip to Shetland for me and, ever since hearing that there was a third contender for Britain's 'biggest' cave chamber, I'd wanted to see the sea cave at Calder's Geo.

After hauling some rock for the Tuesday Diggers, I'd visited The Frozen Deep a few times. Despite my head torch having no chance of reaching the far side, it was still possible to get a feel for the enormous space stretching out ahead. At Eurospeleo, I enjoyed one of my best caving days ever abseiling the Dihedral route into Gaping Gill, in awe of the drop below me,

illuminated for the event and peppered with tiny caving lamps moving about below. So, I'd been keen to go for the hat-trick and compare Shetland's monster sea cave offering!

After the sea conditions were declared too bumpy on the first attempt, I'd tried to contain my disappointment. But there was no containing my excitement when the reduced swell was deemed suitable the next day! The sea cliffs at Eshaness are truly impressive and, situated on the western coast of Shetland, subject to the full force of the Atlantic. We

paddled west from the beach at Tangwick, detouring through the fantastic natural arch of Dore Holm, past the cliffs and on to Calder's Geo. In deference to my (over-) enthusiasm, the group sent me off first, to paddle into a smallish cave entrance much like any other in Shetland.

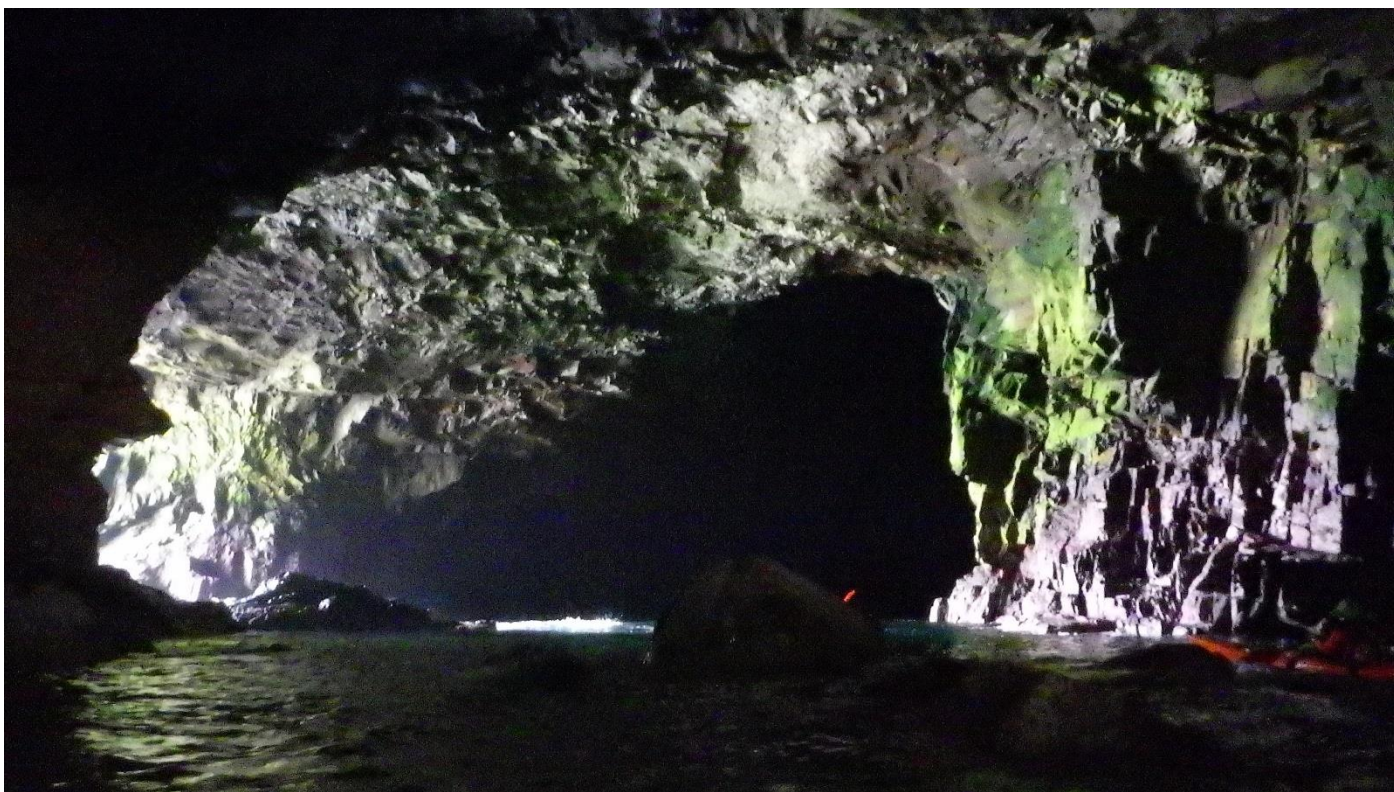
Once inside, it was quite unlike any other! With additional entrances to my left and ahead, the light flooded in and lit up the whole chamber - no need for the head torch! I've heard that it would be possible to park a jumbo jet inside. It certainly felt big enough from where I was sitting, bobbing up and down in my kayak. As with Gaping Gill and The Frozen Deep, it's impossible to do the space justice with a point and shoot camera, and this cave was no exception. I tried a few photos, but then settled for simply enjoying the experience, before paddling on to finish our trip at Hamnavoe.

Impossible for me to tell which chamber is the biggest; suffice to say that I loved my trips to all three and feel privileged to have had the opportunity to visit such amazing places so close to home.

FACTFILE: Jonathan Swale used a laser rangefinder at the Calder's Geo sea cave at Eshaness. He said he found it to be 60ft tall (c.18m) and spanning a floor area of 5,600 square metres. Mr. Swale said this made it one-and-a-half times as big as the biggest cave at the famous Cheddar Gorge in Somerset.

Report from BBC Scotland 28.08.14

For comparison, in Descent Issue 229, TFD is quoted as having a floor area of 3,000 m² and Gaping Gill as 2,700 m².



Eshaness Cave

Young people in caving - a Scout Movement perspective – Wilf Harrison

Adventurous activities have been a core part of the Scout programme since its inception over 100 years ago. To increase safety during such activities, the Scouts have an Adventurous Activities scheme which sets out the rules and guidelines which are to be followed for activities like climbing, water sports, hill walking, archery and of course caving. The details are published on the Scout website here - <https://members.scouts.org.uk/por9.7> - but briefly, if a Scout troop (or Cub Pack, Beaver Colony or Explorer

unit) wishes to organize one of these activities, they have to ensure that a relevant permit holder runs the event.

Fortunately, the organization has taken a very pragmatic approach to issuing permits. Unlike the Guide movement, where typically people running such events need professional qualifications and insurance, the Scout movement runs its own internal permit scheme and permit holders are insured under

the central Scout insurance arrangements. (Note that “joint” events between Scouts and Guides can be covered under the Scout permit scheme so long as the Guide District Commissioner approves which perhaps provides a way to open-up caving to a wider base).

To be awarded a permit, an applicant needs to complete a checklist and works with an assessor who will then recommend the award of a permit (or not!). For the county of Avon, this is Paul Stockall who is probably well known to many of you. The assessment will include looking at an applicant’s caving logbook, assessing a trip they run with some Scouts, and discussions about things like conservation, access, emergencies and group management. A professional or national qualification may take the place of some parts of this, but the assessor still needs to make the recommendation - there is no “automatic” entry route to permits. A permit may be limited to specific caves about which the applicant can demonstrate good familiarity - for example I can lead trips into Swildon’s Upper Series, Goatchurch Cavern, Pierre’s Pot and Sidcot Swallet. In practice this limit is not a problem because there is enough interest and progression in this selection of caves to keep Scouts happy for several years. CCC caves are not open to under 16-year old’s anyway.

Once a permit has been awarded it is visible on the national qualifications system Compass. This means any Scout troops without a permit holder can look for and contact nearby permit holders to ask for assistance in running a trip. Permits are reviewed after 5 years in the case of caving.

To set up a trip, the organiser (who may also be the permit holder but could equally be the Scout Leader for the Troop and would not necessarily come on the trip - handy for those who don’t like small holes in the ground!) notifies their District Commissioner using an online system - approval is “passive” in that if the notification is not denied, the trip can go ahead. The permit holder is named on the online form.

While there is some equipment held at County level (at least here in Avon) the quality and age is questionable so often a Troop will provide their own equipment, rent it commercially or borrow it via the permit holder who may have access to another Troop’s kit. For example, I scout in Keynsham and we

have a decent amount of well-maintained kit, so we often loan this when I run a trip.

So much for the logistics, what’s the point of all this? Well as cavers you will be well aware of the benefits in terms of understanding the cave environment, its importance to the local landscape and environment, the need to understand cave flora and fauna so we can protect it, and the sporting and health/fitness benefits of caving. But as Scout age there are many additional benefits. Being plunged into an alien environment challenges young people to face up to concerns and fears and work through them. It develops their teamwork and interpersonal skills - many a time I have been able to step back and let Scouts encourage and help their friends, pass on hints and suggestions and agree jointly which way to go by listening and sharing ideas. More experienced Scouts can develop leadership skills which would be hard to practice elsewhere. I have had 13-year olds prepare for and lead full round trips in Goatchurch with a team of Scouts under their guidance. There can’t be many other opportunities in an increasingly sanitized and safety-preoccupied world where young leaders can take such responsibility for the safety of their peers (under suitable supervision of course!).

It really is a joy to see nervous, worried young Scouts develop the skills and confidence to explore and lead underground. The key question is how to keep them in the sport and maintain their interest and commitment. To that end I have just started working with the BCA Youth and Development group - no news yet on that front. The key question becomes one of opening-up their access to more locations and more challenging caves such as the ones we frequent as MCG members while ensuring the trips are safe for both the cavers and the caves. If we can create a wave of enthusiastic cavers who continue through University or join a local club straight from school, we can help continue our great sport.

Scouting relies almost exclusively on volunteers. It is hugely rewarding. If you like the sound of leading Scouts on caving trips it’s quite easy to get into - you need to get DBS clearance, join a Scout group as a Skills Instructor (no commitment to attend anything other than the trips you agree to) and then work with the Permit Assessor to get a permit. Then just go caving!

Stock Hill Mine Cave - Mike Moxon

Close to the Forestry Cottages and originally dug open in 1991/92 by Tony Jarratt (J'Rat – see his logbooks) and the BEC, it flooded in October of the latter year and was still water-filled next spring, when a survey and notes appeared in BB467 (see link). Other sites that they dug which are worth a visit near the public car park are Stock House Shaft and Five Buddle's Sink (both CSCC locks) and the nearby Snake Pit, which is currently being dug by Geoff Newton (Zippy).

Trevor Hughes was one of the original diggers and went with John Williams (Tangent) to find the entrance again in June 2015, which took a while as it was covered in leaves. Having run out of options at Caine Hill (in someone's driveway, just off Priddy Green; and the source of the name Caine Hillites on the digging trophy for 2019), they opened it up and started digging at the bottom of the main shaft (the side passage where he and J'Rat et al were concentrating originally still floods in winter). Regulars at this time included Duncan Butler, Stuart Lindsay, Phil Coles and John Noble (later joined by Pete Hellier and Adrian Miles – mostly BEC).

Horizontal(ish) progress via rock removal took them to the Death Slide, where a steep slope led to a pot down to a narrow passage at the bottom. This is where I joined them in May 2017, as I had missed my usual team from Cutler's Green heading down Hunters' Lodge Inn Sink (HLIS) to repair the damage done to formations by persons unknown. It just so happened that we broke into a large triangular chamber that night, up to the left, with small blocked passages leading off uphill, downhill and in one wall – I was subsequently to push the tight upslope passage for a short distance, over a couple of sessions, to a tiny streamway (with assistance from Leonie Woodward), whilst Trevor and Co. concentrated on the water worn (and breezy), but too small, continuation downslope to the right from the bottom of the Death Slide.

A slow but steady advance brought them to Novichok Corner, where the passage doubled back on itself, eventually reaching Putin Pot, where it doubled back again to an awkward squeeze in a narrow, but standing height, mineralised rift. This was finally passed in March 2019, to find a large passage heading 50m downslope, which I got to see on Sunday 24th with Trevor, Duncan and Tangent. I returned with Tangent on Sunday 7th April and started prodding at rocks in roof tube to left of breakthrough. In the meantime, apart from HLIS, I had spent Wednesday

evenings variously helping out with the ATLAS at Rock Farm (East Mendip), Andy Sparrow in Gough's Far Rift and at Cutler's Green, when my regular team couldn't do Tuesdays. (Other than my main digs - reports will follow - I also visited Viaduct Sink with ATLAS again and Hallowe'en Rift with Vince Simmonds and team).

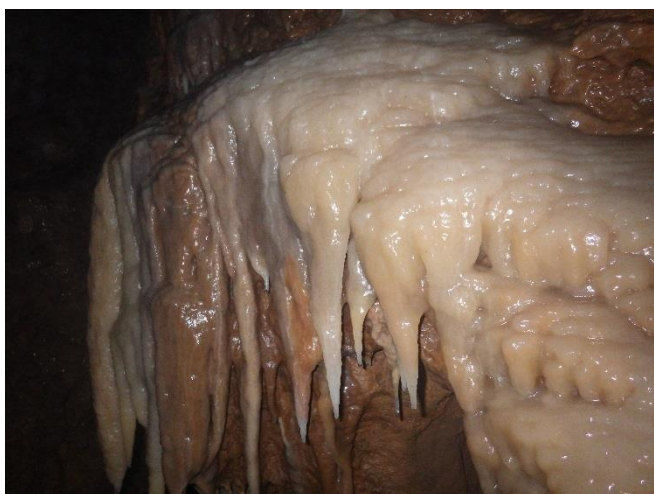


Main Passage

To the right at bottom of main passage they found a stream emerging from a tiny sump, with a reasonable height walking passage zigzagging onwards to a duck, below a small waterfall, which was later passed and dug out, into more passage ending at a sump that is too narrow to dive through (currently being dug over) and a higher level crawl, that may bypass the sump, but is choked with mud. There is also a small sump randomly in the downslope wall, called the Font, that seems to be a caveable size, but needs siphoning. To the left from the waterfall / duck, Duncan, Adrian, Mark Edwards and myself have recently opened up a small, muddy chamber, with passage in the roof where we can clearly hear the hammer being used near the (yet to be mentioned) Diving Board Sump (DBS), despite it being a good 30m away!

Back at the bottom of the main passage, a dig on the left heads towards the sound of flowing water but is

too constricted (and is unclear which of the two upstream sumps this feeds), followed by the Sarlac Pit of loose fill in a rift. Stepping over the latter leads into another chamber with too narrow connection across to the right hand passage, near previously mentioned upstream sump, and a series in the roof, discovered on a visit by Mike Waterworth, that feeds rain into the (still to be mentioned!) DBS. A sloping passage in floor of chamber was dug out to find a narrow cross rift with the sound of flowing water again (our current main priority, as it intersects the flow from DBS) and another chamber with the crystal clear Diving Board Sump (another upstream one in the lower half of the cave! – this was dived by Claire Cohen and found to have no passable feeder – but continues to flow throughout the year).



Formations at the head of the pitch

I was back at SHMC on Monday 1st July with Jason Kirby and Mark Edwards (both MCG; as nobody had been able to make Sunday) and as the high level tube hadn't been pushed, I rolled the remaining rocks out

REFERENCES

Logbooks 4 and 5: <http://www.mcra.org.uk/logbooks/index.php?category/jrat>

"Breakthrough in Stock Hill." Hughes, Trevor. Oct/Nov 2017. Descent (258) p.10 - reports on resuming the dig and finding the triangular chamber (Inc. photo)

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"New caves discovered on Mendip." Hendy, Philip. Nov 2019. Mendip Times Vol.15 Issue 6. p.97

"A kilometre of new cave." Hendy, Philip. Jan 2020. Mendip Times Vol.15 Issue 8. p.77

"The Caves and Mines of Stockhill." Hendy, Philip. June 2020. Mendip Times Vol.16 Issue 1. p.54

of it to find a nice calcite cascade and the choked passage continuing towards the triangular chamber (similar to the upstream bit above that chamber). The surprise was the 30m pitch (which was just chimneyable) down to a streamway. Wed 3rd involved one session helping to haul remaining bags from before breakthrough up to the triangular chamber, and then I helped Trevor survey some of the new stuff on Sunday 28th. Returning on Wed 31st, Pete Hellier and I climbed down the pitch and cleared a route upstream to find 400m of small, but branching passage, with larger chambers and avens where they converged.

The pitch was surveyed on Sunday 4th August, before a rope was fixed, to allow the rest of the team to see what lay beyond. On the 31st we had clambered back above the stream and this eventually proved to connect back near the top of the pitch, avoiding the need to descend the most awkward part, and the rest was surveyed, to win the 2019 Digging Award with a total of 638m (including downstream passage – the whole thing resembles one of those archaeopteryx fossils, with splayed legs and wings, having the entrance near the centre).

Short extensions have been made at the top end since last year's Award, one of which comes close to Stock Hill Swallet, an ACG dig in the 1950s (mud formations are in the other one), and a larger, fossil passage, that cuts across above the two streamways, has been discovered, giving another 250m or so, but that won't beat the 300+m we found in Wookey 20 this year (the Hallowe'en team), or the Scottish streamway in Appin at 700m (Grampian CG), although it does mean the Mine Cave now totals about 1km (it was c.160m long before last year).

Eastwater Cavern - Andy Padbury

Upper Series Round-trip

Andy Padbury, Miranda Litchfield, Chris Barrington, Rob Davis and Jason Edwards.



The Upper Traverse

We all arrived at the cottage on time, approx. 6:30. Due to a large turn out and having newbies, we split into 2 groups. Shortly, we were on the road, not too far to the lay by, near Eastwater Cavern. A short walk to the entrance we noticed snow/frost on the grass. Definitely was getting cold.

Arriving at the cave (approx. 7:20) we noticed a torrent of water cascading down the entrance. We contemplated changing to a different cave, but after a quick recce by Chris, we decided it would be fine. Entering the cave into the boulder choke was fun, going through several waterfalls getting a good soaking. It was a very cold start to the trip.

Jason and I were new to this cave but were soon past the boulders and we arrived at The Upper Traverse. I was slightly apprehensive about this part, but all was fine. Jason was guided by Chris, and myself guided my Miranda. All across safely we got to some nice slidy parts, which were fun, steeply dipping with smooth rock. We soon approached Hallelujah Hole. Jason in front of me took a few minutes to pass, and instead of

saying Hallelujah! on the other side, we heard some other slightly ruder words. I was expecting a squeeze, but I actually just fell straight through the hole very quickly, nearly too quickly ha-ha.

Down across the lower traverse we made our way back up the S bend and The Canyon. Miranda and I found this part easy as we are particularly slim cavers. Throughout the trip Rob, who had done this cave several times stayed at the back, and Chris did a top job of leading from the front, remembering the route perfectly.

Back out through The Woggle Press, after a brief introduction by Chris. We all got to the boulders and the many waterfalls. On the way out we again all got a good soaking. The way through the water wasn't easy, as it was really coming down hard and it was difficult to navigate through the waterfalls. A brilliant trip was had by all. Ending with high spirits, although we were all absolutely freezing. Out by 9pm and straight to the Hunter's for a pint and some pasta. Thanks everyone for a great trip.

The “Caveatron” - Tom Harrison

Affordable Underground 3D Scanning and Surveying

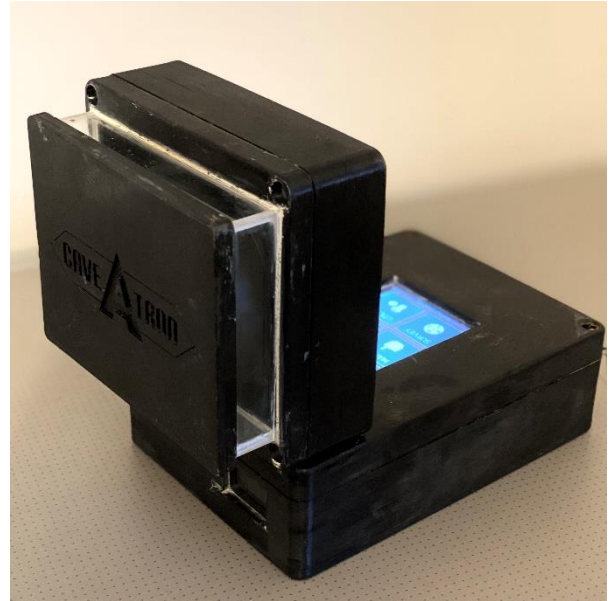
Back in 2013 I wrote about the potential to use an Xbox gaming accessory called the Kinect,ⁱ to assist with surveying cave passages. The device was designed to use a motion sensor to control actions in a game using its camera and infrared projectors and detectors to measure depth. As a cheap mass produced device, it was realised that it had the potential to be used to provide 3D mapping of a space using its combination of cameras and the ‘Kinect Fusion’ algorithm. (T Whelan, 2013)ⁱⁱ

I was intrigued, but the practicalities of requiring a power source, and a laptop suitable to take caving, plus the insurmountable difficulties in writing software to handle the collected data meant a realisation that I would have to wait to be able to have such a device.

Fast forward to the spring of this year and I was directed to the Ukcaving forumⁱⁱⁱ, where there was talk of an alternative to the mighty Disto X 2^{iv} surveying device in the form of the Caveatron.^v I was immediately intrigued by this device, essentially a laser range finder (LRF) similar to the Disto, with a Light Detection and Ranging (LiDAR) unit bolted on, to provide a scan of the passage walls while traversing an underground space. The price of LiDAR units has now reached a point where they are affordable for home build electronics products with a basic belt driven unit costing under £90.

This device has been designed and built by Joe Mitchell, an American caver, but also an Engineer specializing in optics and applied physics. All of the plans, including the 3d printing files for case, the Printed Circuit Board (PCB) layout and the software (written by Joe) are available as Open Source.^{vi}

In July 2020 I set about building my own Caveatron. The first thing that I needed to do was get hold of all the components. The online plans allow for a small amount of flexibility when it comes to parts, but the current design is such that you are somewhat limited in what you can use. I bought the required Laser Range Finder from South Africa, a touchscreen for £25 from Hong Kong, wire connectors from China and then various bits and pieces from around the UK and Europe. The PCB is custom designed for the ‘Teensy’ microprocessor, and the various chips and connections required.



The Caveatron

Slowly parts arrived through the post. It got to the point where my partner Beverley called the Caveatron my 2nd girlfriend with multiple packages arriving for her, I mean it! By August I had started work on soldering parts onto the PCB and soldering wires together to create wire harnesses for the components that aren't soldered, such as the battery, buzzer, LRF and LiDAR unit.



The completed electronics

Added to the difficulty was that many of the parts listed to purchase were from American sources. I was helped somewhat by an email group of a few UK Caveatron builders set up by Bob Mehew, where we could discuss where to buy the parts in the UK and resolving other issues.

Supposedly, the Caveatron could be built for around \$400, or between £400 and £500 in the UK. With many parts being hard to get and being quite unique and specific, I found that getting hold of single parts and having them posted greatly added to the cost. For example, I now have 99 spare O rings of a specific size as I couldn't buy these singly or cut and glue one of a small enough radius. With these difficulties and the requirement to purchase a few items such as craft knives, solder tipper and other tools, the overall cost rose to an eye watering £600.

I was also fortunate that Tanya Sparey kindly answered my call for help with the 3D printing and I was able to collect a 3D printed case and the supports from her in October, at material cost.

In early October I finished the build. Everything has been considered in this the second iteration of the device. The touchscreen controls all the taking of shots, setup and allows reviews of the line data in real-time. The device is small enough to move with and has a neck strap and tripod mount slot.

I must admit that I still do not fully understand how this technology works, but in simple terms it is as follows. The LRF provides a centreline survey in the same way as a Disto does, measuring Azimuth, Inclination and Distance from one survey station to another.

Instead of 3 manual shots as the Disto does, the Caveatron device takes multiple shots automatically to get an averaged reading. A clever addition is the use of a highly reflective piece of card and a filter in the Caveatron to block out a lot of the laser reflection from any other surfaces. This means that the LRF will only measure reflections at the card placed on the survey station and will not take erroneous measures if the Surveyor has bad aim.

Once a shot is taken; the Surveyor then conducts a traverse towards the survey station. This doesn't have to be from a particular station, as the measurements constantly being gathered by the LRF to help to position this scan. On these traverses the LiDAR

operates. The LiDAR spins, emitting and receiving infrared light to enable a calculation to be made of where the surface is that is reflecting this light. Using a clever combination of Gyro, Accelerometer, and the constant feedback from the LRF, data is collected to give a scan of the cave. As a reference point for where these scans are in the cave, only those scans where the Caveatron has a reflected reading from the piece of reflective card are recorded.



Michael Perryman Surveying in Grebe Swallet

The device is intuitive and gives real time feedback as scans are taken with a buzzer and the colour touch screen display. The limitations are in the range of the LiDAR, although as the price of the units fall, upgrades could take place. It is also not possible to take splay shots towards points in the cave where you cannot place the reflective card, instead the LiDAR can do a pseudo splay shot. Shafts and vertical sections are difficult as it is hard manoeuvring toward the target whilst keeping the Caveatron pointing towards it, and especially keeping yourself out of the scan. The tripod mount might be a solution for this, but I am yet to try it.

Early trials have produced some good scans, with some noise to clean up and data to process. Over the next few editions of the newsletter I hope to be able to share these with you. If anyone is interested in learning more or has surveying to be done, then please get in touch.

ⁱ T Harrison. MCG News 370 - The future of surveying, a laptop and a Kinect for Xbox?

ⁱⁱ <http://www.cs.nuim.ie/research/vision/data/kintinuous/>

ⁱⁱⁱ Ukcaving.com/board/index.php?topic=26392.0

^{iv} <https://paperless.bheeb.ch/>

^v Caveatron.com

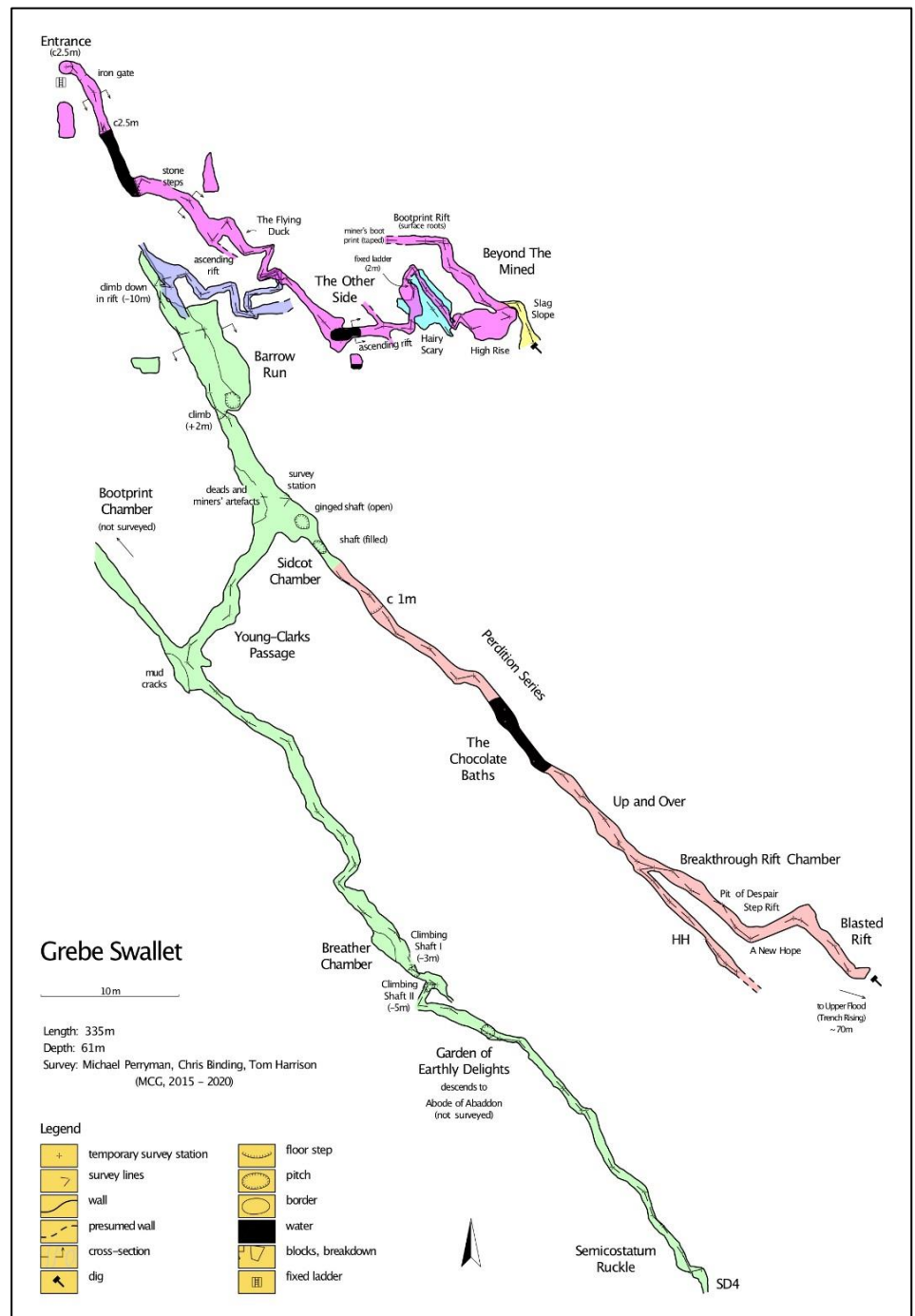
^{vi} <https://github.com/Caveatron>

Progress and surveying at Grebe Swallet - Chris Binding

Grebe Swallet was discovered (or more accurately, re-discovered) as a result of the infamous 1968 flooding on the Mendip Hills. The 1980s digging efforts, led by Willie Stanton, revealed a cave which had been mined for in-situ galena (lead sulphide) in the 1750s, proven by graffiti engraved in soft mud banks. A comprehensive history of the cave/mine can be found online by searching for University of Bristol Spelaeological Society literature using additional search terms "Grebe Swallet" and "lead". An additional UBSS Proceedings article concerning the miners is also online and can be found from a similar search.

It has been ten years since digging re-commenced in Grebe, and the cave has been almost doubled in length, to more than 300m, as a result of persistent work by a stalwart core team. The main digging focus areas, in respective order, have been SD4 (in Semicostatum Ruckle), The Garden of Earthly Delights leading to the Abode of Abaddon, The Other Side leading to Beyond the Mined, and most recently Perdition. Current digging continues at the end of Perdition, with several minor breakthroughs along the way during this project, and hopes are high for intercepting known passage. In addition to the current regular diggers, who have toiled for a greater number of years, the names that might care to recall include Graeme Culverwell, Steve Dowden, Richard Da'Casto, Ed Waters and the late Alan. Over almost 70 other occasional cavers have visited just once, which is a bit of a testament to the nature of the toil and conditions within the cave.

The current highly active digging team (2020) comprises Andrew Horeckyj, Michael Perryman, Nick



Thorne and Christopher Binding, with additional surveying and digging assistance from Tom Harrison. The present survey, included here for the first time, suggests that Perdition is heading towards (70m from and some 30m above) Trench Rising in Upper Flood. Pleasingly, this latest Disto-based survey overlaps with Stanton's earlier survey down to Sidcot Chamber (obtained from the UBSS registry) to within the measurement errors. The diggers are eagerly hoping for a breakthrough into a 70m long steeply descending passage on their next visit!

From Caving Secretary to Librarian - David Lossi

Being Caving Secretary has been a blast for the last 4 years, but I thought it was time for younger blood! Some of the notable moments, in no particular order....

10 of us on a Tuesday evening jolly to Swildon's Sump 2, and making it out in time for the pub. A speedy party shot ahead to rig the 20', and with everyone spread out in groups of 2 or 3 so there were no hold ups.

7 of us tested out the assisted-hoist pulleys on the pitches in Manor Farm. Cries of anguish from Jackie Bishop as we hauled her up September Rift - the thigh slings got very uncomfortable and rift was too tight to allow her to adjust herself! The more she wriggled the more she was in pain. The greater the pain the more she yelled... and the rest of us were in hysterics. Miranda was hitched up to ride up the entrance pitch with one hauling at the top and one bottom hauling, Miranda seemed almost weightless, so she shot up with increasing acceleration. Her screams (were they delight or anguish?) finished a really fun trip.

I suppose the 4 years have been interspersed with rather too many trips where the ladders were just too short, or just in short supply – and it's always been my fault. Leaping up to the bottom rung that's 3 feet off the ground at Swing Pitch or Swildon's 20' makes for a challenge, and forgetting that some members of the party would prefer a ladder on September Rift meant free climbing up the entrance shaft to where the ladders joined to release the lower one.

There have been some fun trips in Bath Swallet/Rod's Pot. Most memorable was Demetri Benfield negotiating the horribly tight No-Picnic in the Murlis Loop for the first time. I was right behind him, and he kept asking for reassurance that this was the right route, as it was definitely getting towards the desperate end of tight and awkward. I gave him due reassurance that he was spot on – omitting to tell him I had never done it before so really, I couldn't be sure. The passage after No-Picnic was also tight leading to a crawl over the top of the 15m El Capitoff. There was a definite sense of elation for those that got through. We repeated the trip later with Miranda. Somewhat annoyingly she couldn't understand what all the fuss was about.

When a lot of new people are caving, it can become challenging to remember who has done what. A nice lad called Richard was a welcome addition to the club as he had an unending supply of A4 batteries to donate. All was going well until his 4th trip which was Eastwater. I thought he had done far more trips so had calculated he should be ready for the Eastwater experience. I had exited from the Upper Traverse but was called back as Richard was ½ way along and finding things a challenge. I helped him to the beginning of the final squeeze, giving him a commentary of where to place feet and body as I went. The more Richard looked at my body filling the exit tube the less he relished attempting it. He assured us he would much prefer to wait for 2 hours in the Upper Traverse while we completed the Upper Series. So, I returned yet again through the tube and guided Richard from behind this time, finally getting him through. No doubt Richard thought the tight bits were over, so Hallelujah Hole and the Lower Traverse must have been a bit of a shock. To then find out we were back at the Upper Traverse for the exit must have been the last straw, and sadly we never saw Richard again.

Among all the fun, one thing I have slowly absorbed is the amazing History of the MCG. As Librarian I would like to make this history easily accessible to new members. Most of the History I learned was by caving with the older members and listening to stories on club weekends. What worries me is that in 10 or 20 years' time who will be around to make sure the Club History is still vibrant and easy to find? It is all there on the old website, in the library, and in wonderful pictures on the walls, I just want to make it easy to find and assimilate. I am starting with the History of Upper Flood which is dotted all over the place. I think the MCG History is an important legacy that will make new members realise how pivotal the MCG has been in opening Mendip caves and Mines, and how exploration is as important as caving.

Rescue from Box Stone Mines – The Wiltshire Gazette & Herald 19/11/2020

Four men were rescued in the early hours of this morning after they lost their bearings within the Box Hill stone mines, near Corsham. The rescue involved

Wiltshire Police, Avon & Somerset police, Dorset & Wilts Fire service, Ministry of Defence police, Hanson UK and volunteers from Mendip Cave Rescue. The

group were brought to the surface at 03:55am this morning. Police have branded the group “foolish” for entering the caves without specialist equipment and volunteer rescuers, some of which had to get up for their full-time jobs this morning, have stressed the need for young people to explore “responsibly.” Secretary of Mendip Cave Rescue Martin Grass said: “We were called out at 1.15am after receiving the message that four people were lost in the stone mines at Box. The alarm had been raised by the parents of one of the group”.

“There are quite a few entrances to the stone mines but were given a map reference which happened to be a couple hundred yards from the Quarryman’s Arms at Box Hill. I woke up the volunteers and we got a team over there who met with the police at the Quarryman’s. They know the area very well and they went into the nearest entrance and eventually located the party. “I believe the group was quite a long way in as it took them an hour to get back to the entrance.”

The Box stone mines consist of an intricate network of tunnels, which originate from Bath stone mining work, initially started during the Roman occupation of Britain. Owners of the mine, Hanson UK, have sealed a number of entrances but so-called ‘urban explorers’ have still found ways to access the labyrinth of tunnels.

Fire Station Manager Richard Humphrey said: “Aside from the fact that this group shouldn’t have been out exploring anyway, due to the current lockdown restrictions, they didn’t know where they were going, they didn’t have the correct clothing or equipment, and they were incredibly fortunate that they were able to get sufficient phone signal to raise the alarm and then provide a What3Words reference to help us find them. We had a crew from Corsham fire station

searching along all of the access points to the mine, trying to locate the group, with support from both Wiltshire Police and the MoD police. Once we had pinned down where they were, we were able to pass them water and blankets through one of the access points, but it was still a long walk through the tunnels by the specialist search and rescue team to find them and then lead them out safely.”

A Wiltshire Police spokesman said: “This morning’s operation was the result of several agencies working together and we’d like to thank all of those involved who helped us bring this to a successful conclusion. Fortunately, last night’s escapades for the four trapped males ended with their extraction, albeit some three hours after the initial call, but without injury to any of them - or their rescuers. Exploring mines and caves is dangerous at the best of times but to do so at night and without specialist knowledge or equipment is more than a little foolish. We’d urge anyone not to deliberately put themselves – or the emergency services and rescuers – in danger by staying home!” Police have confirmed there were no major injuries, and no one was taken to hospital.

Mr Grass also revealed that there had been more call-outs at the Box stone mines than at any of the Mendip Caves during the last two years. He said: “There’s a very simple reason - we’ve had a rise in urban explorers who try explore derelict space or caves like these. Exploring is great, but we always recommend that people join a caving club, have access to proper equipment and always have adequate lighting. Never go caving alone and always let people know where you have gone.” Box Quarry is also a Special Site of Scientific Interest due to its high number of roosting bats. Box Quarry is also at the western end of the MOD’s Tunnel Quarry site and is partly owned by the MOD as well as Hanson UK.

J’Rat Digging Awards 2020

Martin Grass – Stuart McManus – Estelle Sandford

And the winners are The Grampian Spelaeological Group with Ashery Pot (Uamh na – Aiseirigh) Applecross (Northern Mendipshire).

Ashery Pot was discovered last year by Toby Speight (Grampian SG) and friends. Some enlargement to the entrance gave access to the cave which slowly revealed its secrets. This year Toby was stuck in Strathcarron by self-isolation and chose to work from home. This gave him the opportunity to go to Applecross and continue exploration with the

assistance of visiting Red Rose members and GSG members Bruce Taylor and Julian Walford. With 740 metres of quality passage surveyed and with some stunning formations included, this cracking find deserves to win the digging award this year.

In 2nd place Wookey Hole 420m, in 3rd place Stock Hill Cave Mine and in 4th place Pearl Mine 50m.

A more detailed description of the awards will follow in the next edition. (ED)

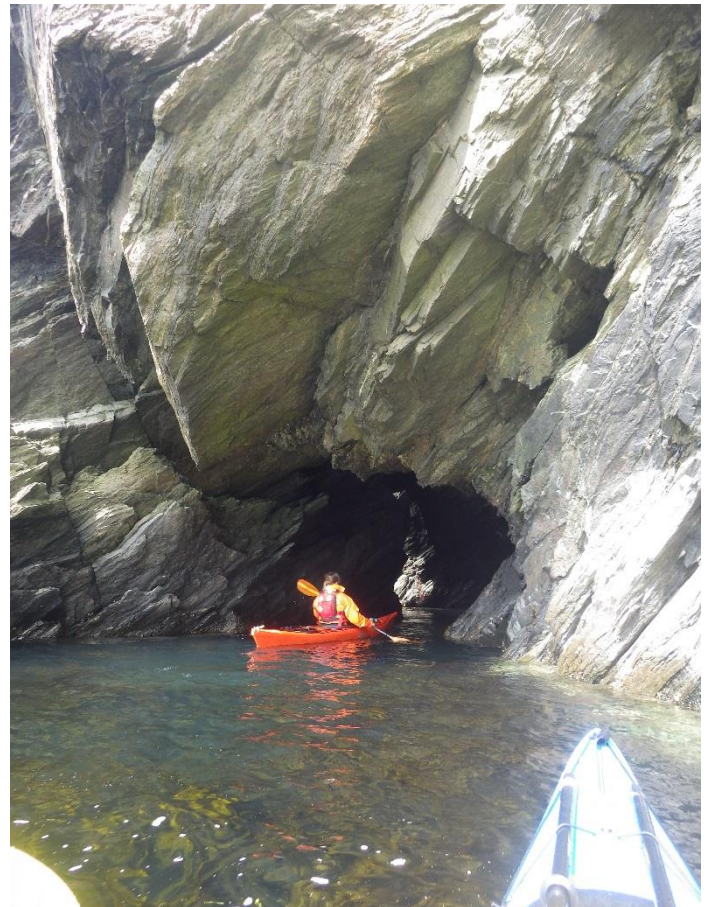
The Shetland Isles – Mike Moxon



Ronas Voe



Muckle Roe



St Ninian's Isle

