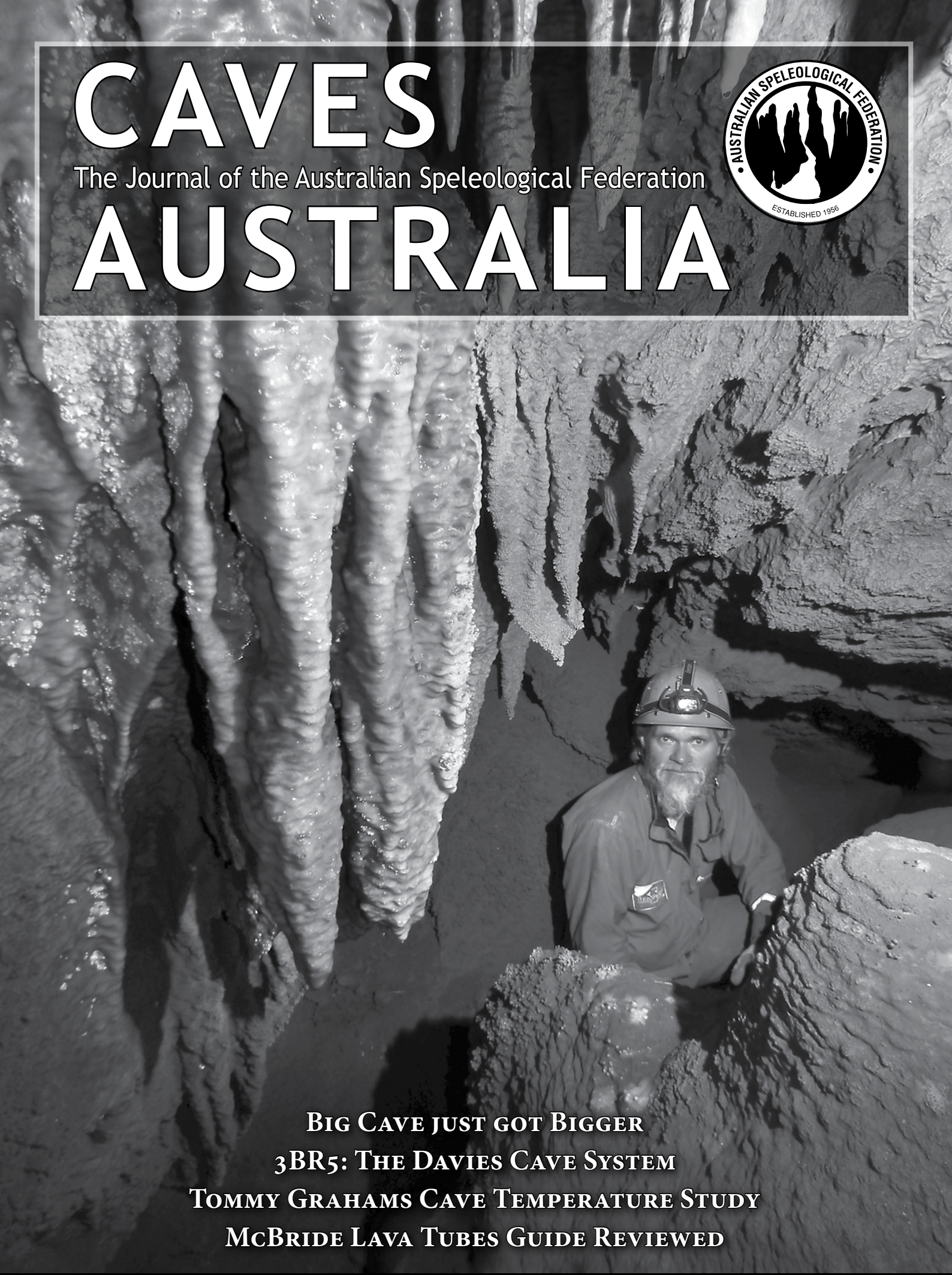
CAVES AUSTRALIA

The Journal of the Australian Speleological Federation



Big Cave just got Bigger
3BR5: The Davies Cave System
Tommy Grahams Cave Temperature Study
McBride Lava Tubes Guide Reviewed

No. 184 • MARCH 2011

COMING EVENTS

This list covers events of interest to cavers and others seriously interested in caves and karst. The list is just that: if you want further information the contact details for each event are included in the list for you to contact directly. The relevant websites are useful and details of international and regional events may be listed on the UIS/IUS website http:///www.uis-speleo.org/. Many of these events are listed on the ASF website http://www.caves.org.au. For international events, the Chair of International Commission (Nicholas White, nicholaswhite@netspace.net.au) may have extra information. This list only covers events in 2011.

March 23—25

Karst Geology and Hydrology session at the 2011 meeting of the Southeast Section of GSA, Wilmington, NC, USA.

Doug Gamble at the University of North Carolina–Wilmington and Lee Florea of Western Kentucky University are organising a session (oral presentations and posters) on Karst Geology and Hydrology at the 2011 meeting of the Southeast Section of the Geological Society of America. The submission deadline is well passed but anyone in the USA at this time might find the session worth attending. General information regarding the 2011 SE-GSA meeting in Wilmington, NC can be found at the following website: http://www.geosociety.org/Sections/se/2011mtg/ or contact Dr Lee Florea Lee.Florea@wku.edu.

April

European Geosciences Union General Assembly 2011, Vienna, Austria.

Tobias Geyer and colleagues are chairing a session on karst aquifers at the European Geosciences Union General Assembly in Vienna. For details check the website: http://meetingorganizer.copernicus.org/EGU2011/session/6604

April 17—22 (Easter)

Chillicon ASF Biennial Conference. Chillagoe North Queensland.

28th Biennial Conference organised by Chillagoe Caving Club. This week-long Conference will include national, international and local speakers, workshops and A LOT OF CAVING! If you're interested in caves, love them with a passion, or just want to find out what the fuss is all about then you're invited! Download from the website http://www.chillagoecavingclub.org.au a registration form, the Conference Brochure and details on program. (The registration form was also included Caves Australia 182.) For more details contact: Winfried Weiss winfriedw@chillagoecavingclub.org.au

May 8—13

19th Australasian Cave & Karst Management Conference, Ulverstone, Tasmania. Abstracts for oral (20 minute) presentations and poster presentations are now open and are due by 1 February 2011. Conference proceedings will be published on CD and a copy of your paper must be received by 15 March 2011. Details of costs, accommodation etc are available for download from the conference section of the ACKMA website (http://www.ackma.org/conf2011/index.html). For other details contact the convenor Tony Culberg. PO Box 122 Lindisfarne Tas. 7015 E-mail: culbergf@bigpond.com

June 8—10

International Conference on Karst Hydrogeology and Ecosystems, Bowling Green, Kentucky, USA.

This conference will bring together karst and cave researchers from different international associations and karst-related projects (UNESCO-IGCP and IRCK, IGU, UIS, etc.). The IAH Karst Commission will also meet in Bowling Green. For details see: http://hoffman.wku.edu/k2011.html

June 27—30

6th International Conference: Climate Change - The Karst Record University of Birmingham, UK.

Three days of oral and poster presentations will be held on the University of Birmingham campus, with accommodation provided on the University Conference Park and in local hotels. Either side of the main meeting, one-day optional fieldtrips will be run to regional karst and tourist attractions. Some details are available on the website http://www.kr6conference.org/.

July 18—22

NSS Convention, Glenwood Springs, Colorado, USA.

For details check the NSS website http://www.caves.org

1—3 September

H2Karst, the 9th Conference on Limestone Hydrogeology Besançon, France

This conference is organised by the Universities of Franche-Comté (France) and Neuchâtel (Switzerland) every 4 to 5 years. The themes of the conference are underground storage of water in karst (natural & artificial), relationship surface water — groundwater (low water support, floods, quality), karst ecosystems, aquifers, water quality, metrology and data transmission, and any issues relating to karst water. Two days of presentations will be followed by 2 excursions in parallel, one in the classical French Jurassic karst (Lison spring, experimental site of Fertans, studying infiltration), the other one in the Areuse karst system in the Swiss Jura (role of the forest). Abstracts and titles of presentation (poster and oral) dates are now well past and details of the meeting are via the website http://sites.google.com/site/h2karst/

Caves Australia Production

SOME of you may have noticed that *Caves Australia* 183 not only had 'December 2010' written on the cover but that it also (almost) arrived in your letterbox in December 2010.

I am glad to say that *Caves Australia* is back on schedule and the production team plans to keep it that way.

I have recently received a few comments regarding the anorexic condition of the most recent issue so I thought I'd better write this note to bring you all up to speed.

The production guidelines state that each quarterly issue *of Caves Australia* is nominally 24 pages.

You've all been spoilt over the last two years as we made up for the production hiatus experienced in 2007 — of the eleven issues that have come out since early 2008 five have been 'double' issues (40-44 pages).

Assuming we don't find ourselves in a hole similar to 2007 again then you can expect to continue to receive 24-page issues from now on.

I'd also like to take this opportunity to thank the numerous contributors and various members of the production team who have made it possible to catch up.

Keep the articles coming.

Alan Jackson, Production Manager

CAVES AUSTRALIA

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ASF

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Cover: Peter Bauer in GR124 cave, discovered on June 12, 2010. Photo by Garry K Smith

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FROM THE EDITOR

Why do we do it?

IT'S A common question: "Why do you go caving?" and it elicits standard responses about adventure, exploration or discovery.

From some it brings forth more measured answers: furthering of knowledge of cave formation or cave fauna or climate change or species abundance/extinction.

To a certain extent the answer will reflect the age and experience of the responder, many of whom will have been introduced to caving through fun or fellowship and graduated to cave study.

Mapping follows discovery and leads to recording and later collection of information for study.

As cavers age, the focus of caving seems to change.

***Caves Australia* reflects all these interests. The exotic adventures of Al Warild excite us all; local discoveries and trip reports set us thinking about what we have done and should have done; reading of equipment mastery reminds us of our weaknesses.**

My response to the question as to why I caved and cave is linked to the people I have caved with.

Often the caves have become blurred and photos in albums confused but the mates I caved with are always there.

Cavers remain cavers even when inactive. When we meet again, even after many years, we meet as cavers. The trips, the difficulties, and the comradeship: these are the memories that remain.

As our focus changes from fun to study and we move from small group caving to inter-club caving to expedition caving the people who cave with us remain of primary importance.

Look after your mates!

Ian Curtis
OSS

President's Report

HI ALL — and here we are moving ahead in 2011. Some of us saw the extremes of nature at work up close and personal with many instances of battering rain and wind moving plant, animal and mineral in a number of areas of Australia. In other areas fires hastened and directed people's movements. My thoughts go out to all who have suffered personal loss as a result of these predictably unpredictable forces of nature.

We can change the direction of rivers, change the contours of plains and mountains, make it rain, and we may also cause changes in sea level over time, but there is nothing we can dream of that will stop a storm surge, a wildfire, a tsunami or an earthquake, nor slow a cyclone. We must wait until they abate and then count our gains and losses.

It is noted that some caves have increased in size and volume, some have decreased with the ingress of silt and debris and some have had access restricted to divers only. Fire itself has a nice side-effect of clearing plants and uncovering entrances. So, once our safety is assured, we should venture out and investigate what changes have occurred in our favourite karst areas. What is new and revealed and what is now hidden. Damage to caves in Northern Tasmania is reported and needs cleaning up. Caves in other areas are soggy and may contain new hazards to navigation for the unprepared. CO_2 levels in other caves have built up, requiring vigilance. In other areas new subsidence and entrances are revealed. We need to be there doing what we do best.

On other areas we see changes in attitudes to the way things were done, are done and will be done.

In some areas old grudges and misunderstandings are just as active, and promoted with doggedness and stubbornness getting in the way of cooperation and collaboration. In other areas we see people embracing changes as a necessary fact of life. Some are prompted by the realization of changing health or social situation that the past is past and there needs to be rationalisation for a

changing future. In both cases people have been fervent and passionate about protecting caves, cave secrets and intellectual property. Whether or not we are resistant to the end, we are also able to be changed and systems of bureaucracy and management need to change. Recent examples of slow and inadequate communication by myself to fellow cavers highlights both the power and the weaknesses inherent in communication across distance and time and the potential for passion and feeling to cloud objectivity and identify purpose.

There are many skeletons in closets amongst the caving fraternity. Bad blood by the cupful continues to separate cave managers from cavers. Neither is useful and yet we seem powerless to let go. Bones belong where they became bones and fresh oxygenated blood needs to be coursing through our arteries. It's time to move on, listen a bit more and shout a lot less, point the finger less and hold out a hand a bit more.

I see this year as important. Already I have seen so much selfless generosity in Australia in small-scale things with many volunteers. This occurred when people in ASF banded together and got important jobs done.

This year will be huge as numbers of ASF members increase to record highs. Believe it and be part of it!

In Caving
Stan

WANTED ARTICLES FOR *CAVES AUSTRALIA!*

Whether caving, cave diving or generally just caving, *Caves Australia* readers are interested in YOUR story.

It is only with YOUR contribution that we can produce a quality magazine for all to enjoy. For writing and style guidelines, contact the Editor or Production Manager for further information.

Big Cave Just Got Bigger

Extensions and Connections in Bats Ridge's Largest Cave System

Peter Freeman
VSA

PROLOGUE

There is relatively frequent visitation to the public Bats Ridge Fauna and Flora Reserve near Portland in western Victoria and most Victorian cavers are familiar with caves there such as River, Hut, Nearby and Chimney. The area was the scene of intense activity in the 1970s and early 1980s, when around 80 entrances were documented by the young VSA and many caves were explored and surveyed (White 1985).

In the latter part of that era the caves west of the public reserve, and therefore on private property, were explored. One major cave, BR5/12/40, was surveyed and given the name 'Big Cave' due to its extent of around 600 m. Two other important caves just a little further west, BR10 Waterfall Cave and BR11 Old Cave, were also documented. These two appear in the Karst Index Database (KID) (White 1985) and in the Bats Ridge cave listing (White 1985), along with conjectural connection possibilities, but they were not surveyed.That omission was eventually addressed in 2005 when Susan and Nicholas White led a visit to perform the basic surveys of BR10 and BR11. It was established that those two caves did join up, but via a just-too-low crawlway. Another visit by the Whites in 2008 looked a little further, though no additional surveying was undertaken. Other participants on these two trips included Daryl Carr, Marg James, Miles Pierce, Fiona Nitschke, Mara Silins, Brooke Grant, and Peter Freeman.

The status therefore at the start of 2010 was that we had three reasonably-sized caves in a patch only 500 m across, with leads waiting to be 'pushed'. I determined at this time to get on with the pushing. Here's the story so far (reference to the accompanying maps and to the Cave Description document might help you to follow the story).

CATHERINE HEMLEY

Nigel assesses a casualty in the Stalactite Graveyard

APRIL 2010

Peter Freeman, Lynne Amore, Neil Wilson, Agnes Milowka, Catherine Hemley.

This trip was reported in an earlier article published in *Nargun,* the VSA Journal (Freeman 2010). Briefly, I just wanted to fill in some unsurveyed areas and push a couple of the leads that had been on my mind since 2008. These objectives were achieved: BR11's Cement Bag region was surveyed, higher level passages near there were found and partially surveyed, and a connection to BR75 was suspected. BR76 Emu Two Step (ETS) was visited – a small, known cave with no true dark zone. The BR77 entrance was also descended, and, thanks to a serendipitous rockfall that fortunately missed all nearby cavers, Neil passed through a link to Big Cave – our first breakthrough. A BR11-to-75 connection, suspected since the 1980s, was semi-sighted but not proved or passed.

At the other extremity of the system, some low crawls in the SE corner of Waterfall Cave were explored. Agnes aggressively pushed a few metres along a very low tunnel that would later be dubbed 'Dangerous Crawl'. Near BR74, Neil, Catherine and I discovered and surveyed Old Cave's Eastern Chamber. And finally, Catherine and I

DOUG HENRY

Catherine digging in the Green Worm Cave

performed the first transit from the BR74 entrance to BR10 – through the previously 'too small' squeeze.

My enthusiasm for this cave was well and truly re-ignited!

JUNE 2010 TRIP #1

PF, NW, Nigel Cooke, Tom Aberdeen, Sil Ianello, Elizabeth Enders, Aditya Tandon.

The first task for this visit was to confirm the BR11-BR75 connection. This had been very puzzling on the last visit as we could see daylight from inside BR11 but could not find that hole in or near BR75! However, this time, after a successful voice test, we finally located it: a tiny gap between rock fragments in BR75's small doline. It was much too narrow for us to pass, even after shifting rocks.

Next up was to have a go at possible leads around the edges of Emu Two Step's daylight chamber. Within twenty minutes or so, one of them had yielded to determined rock shifting, and I squeezed through to possibly-virgin cave passage. Others followed, and, after a bit of marvelling here, Tom saw some faint daylight and exited via BR100. At first this deflated us, as I believed that little hole, previously seen from the outside but not entered, to be BR12's entrance (I hadn't at this time found the real BR12). Our 'virgin' cave now seemed like it might be the already-known BR12, but later trips cleared up this confusion. Once again we considered it to be virgin cave, though a later inspection of some 1976 Cave Report Forms from CEGSA showed that it had been entered once, long ago.

On the next day Neil and I cleared out a 2 m-long connection passage from BR11 to BR75. It was not the daylight hole 'proved' the day before, but a slightly easier link passage nearby. That connection was therefore now in the bag. Simultaneously, Nigel, Elizabeth and Aditya entered more passage from the previous day's ETS extension, glimpsing two more daylight holes. This new find would later be surveyed as the E14 region of Emu Two Step.

Another push occurred at the SE extremity of BR10. Neil doggedly trowelled soil away to create a just-passable channel in the low crawl previously tackled by Agnes. I followed close behind him, also trowelling, to a point where we called a temporary halt. A minor rockfall from the roof at this time gave us a scare, so that location is now called 'The Dangerous Crawl'. We have since bypassed it and reached the far side.

Our final day on this trip saw BR75 surveyed, most of the re-found ETS) surveyed, some conservation markings placed in BR11 and in ETS, the discovery of some new entrances, and a reconnoitre of the already known BR78 Birds Nest Cave.

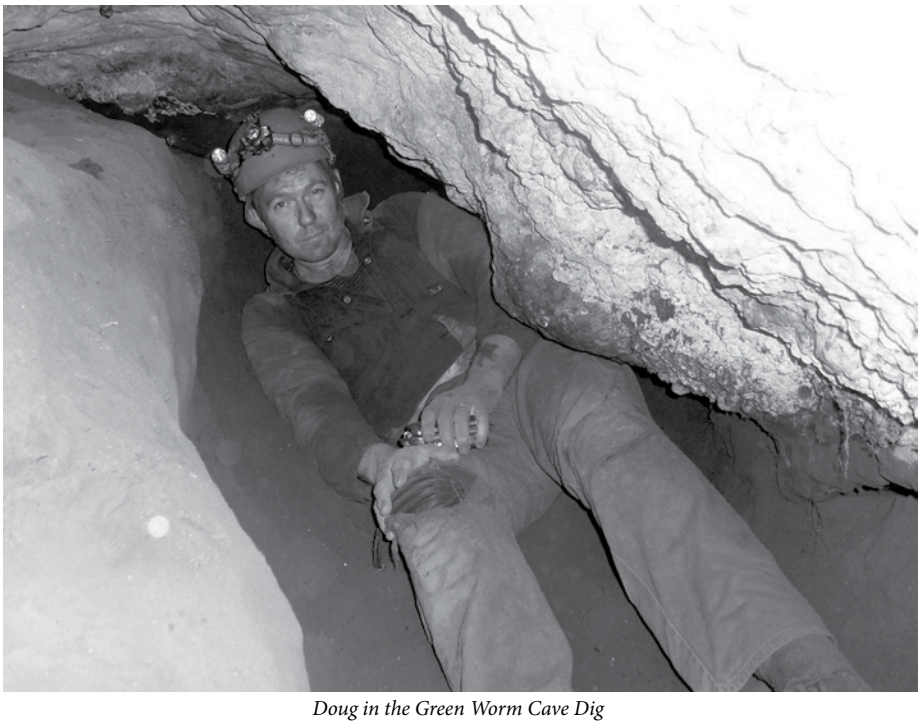
JUNE 2010 TRIP #2

PF, LA, NW, CH, NC, Doug Henry, Scott Hall, Anastasia Greer, Andrew Prendergast, Rod Campbell.

The BR77 doline had intrigued me from first sight. Primarily it contains BR77, a six metre drop that we had previously connected into Big Cave. However, it also tempted us with small openings northward. There is evidence of previous digging on the doline floor here, but Neil and I had decided that a direct widening of the best-looking horizontal gap was the way to go.

On the first morning of this trip, Neil set-to with hammer and chisel. Soon he was squeezing through what became the BR96 entrance, and he couldn't resist a short solo look-around. While this was occurring, Catherine and I were doing more surveying in ETS; and on the surface Lynne was finding a bewildering collection of additional entrances and dig prospects, especially along 'The Cliff'.

On hearing of Neil's find, Catherine and I headed straight in behind him, surveying as we progressed. Before long Neil encountered a bright pink flagging tape (survey station E13) that I had placed in the new part of ETS only an hour or two earlier. Yes,



CATHERINE HEMLEY

Doug in the Green Worm Cave Dig

another connection! ETS was now a substantial cave in its own right, and was sitting between the older known caves.

A couple of branches eastward off ETS were briefly inspected and surveyed by Nigel and me, and one was calculated to be close to BR11.

Neil and Rod performed some determined low digging hereabouts, but the best we got was the ability to hear tools being banged on the walls of the stubbornly unconnected caves.

A final exciting discovery was excavated in BR10 by Doug, accompanied by Scott, Andrew and Anastasia. This was the 'Powder Keg Extension', so named by Doug for its entry through black powdery sand. Although we all took a tour of this area late in the afternoon, its surveying would have to wait a good while.

SEAMUS BREATHNACH

Peter sketching in a beautiful chamber in Cliff Cave

JULY 2010

PF, LA, NC, DH, SH.

The BR5/12/40 survey performed in 1981 had been drawn up in that era, but not in a way that accurately showed the cave's complex form.

Before embarking on this trip to Bats Ridge I obtained all the original survey data and field sketches and re-drew the cave in correct relationship with our recent work. Armed with this new information, we had very definite objectives for July's visit.

First we searched Emu Two Step's western side for leads, knowing that BR12 must be close. Interesting finds were made, but no connection. Next we entered BR12 for our very first time. Scouring its eastern wall, Scott eventually located what seemed to be virgin passage leading to a high window that looked into void. Nigel and I scooted out and went to a corresponding position in ETS, and almost immediately had voice and visual connection to Doug and Scott peering through the window.

Yes — connected! We could have crawled through, but we were (and still are) wary of the roof instability thereabouts. Three separate caves were thus instantly reduced to two, making the search for an ETS-to-Old link even more pressing.

Holding our enthusiasm in check, Nigel and I spent the remainder of this trip doing some boring-but-necessary survey work while Doug and Scott revisited The Powder Keg to check leads.

DOUG HENRY

A few hours' worth of soil and rock

AUGUST 2010

PF, NC, LA, TA, Seamus Breathnach.

This trip was VERY focussed – we needed that connection from ETS to BR11 in order to claim our 'very large cave'! We had good ideas, from the survey and from sound transmission, on where to work. My favourite was a low level dig, so our first action was for Nigel to place a lantern on the floor in the furthest west part of BR11. I hoped that it would guide us from the far side if we got close enough to see its light. Unfortunately, the lantern fell over, became unreachable, and anyway soon expended its battery! Oh well, such is life. Next, at the other side of our supposed connection, we all set to, poking and digging at various points.

The low level digging options were not going in the right direction. However, Tom, nearby but higher, dislodged a large rock while gingerly moving a small one. The large rock now lay across a narrow 'window', known from a previous visit, that looked temptingly into a 7 m void. If only we dare move that large rock ...! Well, move it we did, by Tom pulling it remotely using a rope. Fortunately it didn't bring the house down, and its removal, followed by some chisel work, allowed us eventually to squeeze through the Window. Seamus was first through, but caution regarding instability persuaded us to fetch a ladder into the cave, and so it turned out that I was first to get down to the floor of the H15 Room. Once there, we quickly found our best hope for the important connection. Surveying this new route confirmed that we were within metres of a known too-tight lead in BR75. However, time was up for this trip.

LYNNE AMORE

Peter and Neil strategise while surveying in Old Cave

In between this important but frustrating work, we had also used the weekend to better look at the 'Cliff Caves' and to explore the long-known BR73 Old Shoe Cave (relocated by Lynne). Although far from the large caves, we hoped that this one might also one day be connected in.

OCTOBER 2010 TRIP #1

PF, SB, Ben Graham.

Breakthrough at last: a combination of digging from below in the H15 Room, and from above in BR75, finally opened the important connection between the eastern and western halves of the system. It didn't yield easily, even to tricks such as a pick tied to the end of a dangled yanking rope, but eventually a bit of brute force applied by Ben allowed him to kick the last of the obstructive rocks out of a tight vertical squeeze, and down he came. He soon accomplished the reverse manoeuvre, but I found myself just too large to follow him. In any case, the link was made, increasing our surveyed cave length to around 1700 m.

On this weekend, for our first time, we explored into the western branch of BR12 and found it to be an interesting and scenic cave, though small. Unexpectedly, Seamus located a new entrance simply by crawling along open passage! We emerged, somewhat to our surprise, halfway up the 'cliff'! This route was found on the Saturday and surveyed on the Sunday.

We also looked into BR78, a long-known cave, and more closely inspected the cliff entrances, in some of which we began to dig. BR90 in particular yielded some cave passage and came close to connecting with BR78.

OCTOBER 2010 TRIP #2

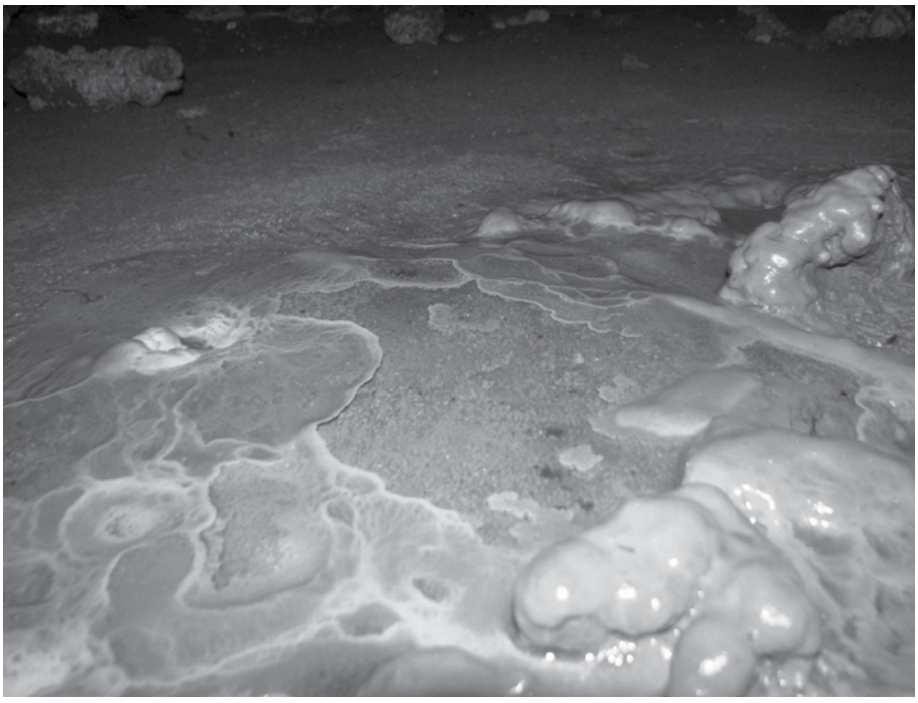
PF, NC, CH, SH, AP.

Exploring such a large and complex system as this demands self-discipline and careful management of the effort. There is always a long list of tasks, and the temptation to go straight to the exciting ones often means that the mundane ones, such as surveying, get neglected. This is quite serious, even in the short-term, since it is the accurate surveys that point to new connection possibilities. I had therefore become quite determined to ensure that documentation did not fall too far behind exploration, and on this trip I insisted that we start on a boring task before going to exciting leads left over from our last visit.

My first 'boring' task was to check out two leads in Old Shoe Cave, the small cave at the far eastern edge of our area of interest. One lead descended to cave base-level, and Scott rendered it just accessible by removal and break-up of the obstructing rocks. Alas, the lead went nowhere. The other lead was a dig through relatively soft soil. An hour or so of scraping and shovelling allowed us to progress about 5 m into a new area of cave (not so boring after all!). In here the passages soon closed off, though with excavation possibilities, so we called a halt while keeping the area in mind in case other underground explorations later came close.

A second boring task was performed in BR10: a small dig started some weeks earlier was re-inspected and found to join two known parts of the cave. The connection is just too small for human passage, but it did illuminate the form of the cave here and provided an opportunity for a survey loop. A few extra survey shots completed our penance work – now to the glory jobs!

Two entrances over at the Cliff seemed to be open and ready to explore. We entered them, but they failed after only a few metres. One appeared susceptible to excavation at its far end, so we spent some time on it. Meanwhile, Andrew found three further entrances nearby, so we checked them out. Bingo! One of them led us into a small chamber with various leads, one of which we opened up to reveal substantial virgin cave. Soon we were marvelling in a fabulous room that Andrew dubbed The Chandelier Shop. Even better was the fact that it was leading us eastwards, towards BR12. Unfor-



LYNNE AMORE

A rimstone floor in Old Cave

AGNES MILOWKA

Looking out of a rare vertical entrance (Emu Two Step)

tunately, it didn't quite connect, even after Catherine crawled almost 20 m up a very low flattener.

The next day was spent surveying and further exploring this new cave, now known as Chandelier Cave.

NOVEMBER 2010

PF, CH, DH, SH, Martina Fuchsberger

At last we surveyed the Powder Keg Extension, officially adding 100 m to the system's length. Concurrently, Doug and Scott dug open yet another entrance that had long tempted us: BR87. It 'went' – we squeezed in, explored and surveyed 'The Dug-Out', and found a crawlway that connected back to BR10. Another 80 m into the system!

However, the main achievement for this trip was the successful connection of Chandelier Cave into the main system. This one was more difficult, both to figure out and to remove a blockage. When finally through we named the connection 'Two Kilometre Squeeze', for the obvious reason.

DECEMBER 2010 TRIP #1

PF, CH, NC, SH, Miles Pierce

Once again exercising my determination to do the mundane before the exciting, we began an internal dig at the far eastern end of the system. And once again the mundane surprised us, yielding 120 m of virgin cave passage through The Stalactite Graveyard. This new extension almost reaches to Old Shoe Cave, so it has created yet another connection challenge for us.

At the opposite (western) end of the system we tried in vain to connect a small long-known cave BR13 into the main system, but we did establish faint voice communication.

DECEMBER 2010 TRIP #2

PF, NC, Ian (Chalky) Thomas

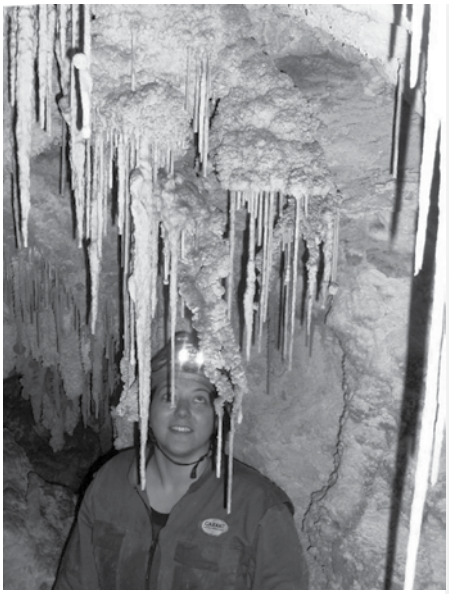
By excavating BR108, a low entrance in the north side of BR13's impressive doline, we found a way through to Chandelier Cave, as we had hoped. Next, from inside this new area, Chalky (IT) discovered a connection to the long-known part of BR13 (connection achieved!). And then, Nigel discovered a new way out of this area, emerging from BR125 (a previously discounted hole-in-the-ground). The system length passed 2.5 km.

JANUARY 2011

PF, CH, DH

Have you ever dug in one cave for a whole weekend? We did (almost anyway). The cave was BR88, which had long tempted us but which we had long left aside as we knew its excavation would create a scenic eyesore in its very exposed location. But dig we did, unfortunately without a breakthrough. It will go – we just need more work and more patience.

Our short break from digging was used to explore long-known nearby open caves, with a view to their eventual incorporation.



DOUG HENRY

Martina admires part of The Chandelier

CONCLUSION

The exploration of the large entity that can ALL now be called BR5 Big Cave (though a new name 'Davies Cave' may be adopted) has been a long but enjoyable series of relatively easy horizontal caving trips. Determination, tenacity and patience, assisted by careful surveying and topographical analysis, paid off in a steady stream of incremental breakthroughs. The system's total length now edges it towards becoming Victoria's longest cave.

This story is of course incomplete (as cave exploration always is): there are still entrances in the area to try to join-in, along with internal leads and digs, so standby for news of further extensions.

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Note: Permission to undertake the digging and excavation discussed in this article was given by the property owners.

3BR5: The Davies Cave System

Cave Description

Peter Freeman
VSA

1. INTRODUCTION

The Davies Cave System is the most extensive and interesting of the caves at Bats Ridge. It is the amalgamation of many originally-separate caves, principally Big Cave, Old Cave and Waterfall Cave. It is on private property. Many different through trips are possible using the numerous entrances. The name Davies Cave System is used in this document for the enlarged, interconnected entity.

2. GENERAL DESCRIPTION

The caves of Bats Ridge are developed in Quaternary dune limestone and are only a few tens of millennia in age. They are concentrated in an area just a few kilometres across, in western Victoria. Davies Cave is the main system on the private portion of this important caving area, and its 2.5 km surveyed length is the result of exploring several separate caves and finding or excavating connections between them.

In most ways, except its extent, this cave is typical of the BR caves. The rock is soft and has low strength, and consequently there are many areas of instability. Calcite deposition to form speleothems is common, with some of the less-visited locations being extremely beautiful. Prevalent features on the walls and roofs are (a) extensive and thick moonmilk coatings, and (b) plentiful cave coral (perhaps representing a later stage of the same process).

The system is best considered, for morphological and historical reasons, to consist of six major parts, so these parts form the basis of the next section of this document. Reference to the map set will help in following the description.

3. CAVERS' GUIDE

3.1. BR124 — *Chandelier Cave*

This is the most westerly component of the Davies Cave System, and its main section is accessed using BR124, the Star Picket Entrance. An excavated squeeze soon leads into the most beautiful location at Bats Ridge: The Chandelier Shop. This otherwise-typical Bats Ridge collapse chamber must have been stable for a long time as it contains large and complex speleothems suspended from the ceiling, and straws well over 1 m in length.

East from this room is the Two Kilometre Squeeze, leading into the rest of the system; while northwards is a wide low flattener. Southwards, and generally at a higher level, is an area containing The Canyon and The Peep-Hole. The latter feature is too small, pretty and delicate to pass through, but the region beyond is still considered to form part of Chandelier Cave. That southern section can be accessed by entering through BR108, which lies in the BR13 doline, or through BR125. Another too-tight hole connects this part of the cave into the real BR13. No way southwards from BR13 has yet been found.

3.2. BR12 — *Cliff Cave*

A cliff, which degrades into merely an escarpment at each end, forms the southern edge of a swampy depression (intermittently a lake) NW of the Davies Cave System. At the eastern end, part-way down the slope, lies the wide mouth of BR12. The cliff hosts a number of other 'entrances', generally collapsed. One of these, BR119, does connect with the western branch of Cliff Cave. Others eventually might also do so, or enter nearby Chandelier Cave.

Heading southwards into the BR12 entrance, a choice is made between turning right into the west branch of the cave or left into the south branch. The south branch, accessed through a low squeeze on the left only a few metres inside the cave, soon leads to the Connection Zone. Here are two important connections: one, at a low point near survey station G13, is a crawlway running eastwards to Emu Two Step; the other, just to the south, is a climb up into BR5. The BR5 connection is fascinating: the two caves overlap, and from the crest of an east-west ridge you can look downslope into BR12's continuation or up into the overlying BR5.

The BR12 continuation goes southwards down a talus slope to the system's base level. One destination is station G18, where it is possible to look northwards into a large flattener that becomes too low. The other base-level destination is a low lead that heads westwards — to be further explored.

The climb up into BR5 from the east-west ridge can be made at various points, but with some difficulty and danger (the danger is a result of the weak and unstable rock). The only easy and safe point is at the far eastern end of the ridge.

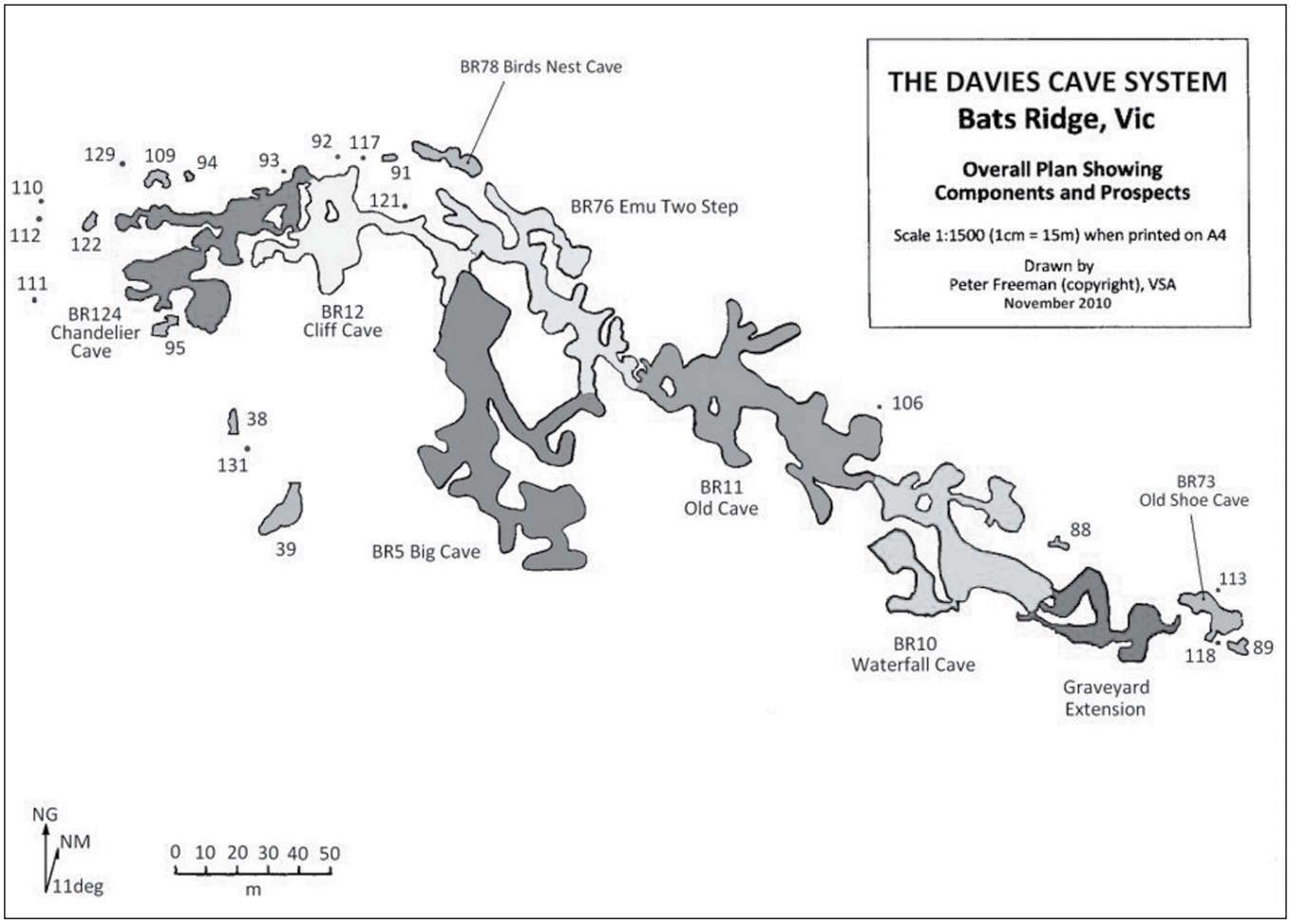
BR12's west branch has roomy passages running generally parallel to, and south of, the cliff. The scenic G61 Room is the start of the connection passage to Chandelier Cave, which lies to the west. The BR119 entrance joins the cave just NE of here, and the chamber is also the starting point of the Pom-Poms series of passages (so-called for its distinctive speleothems).

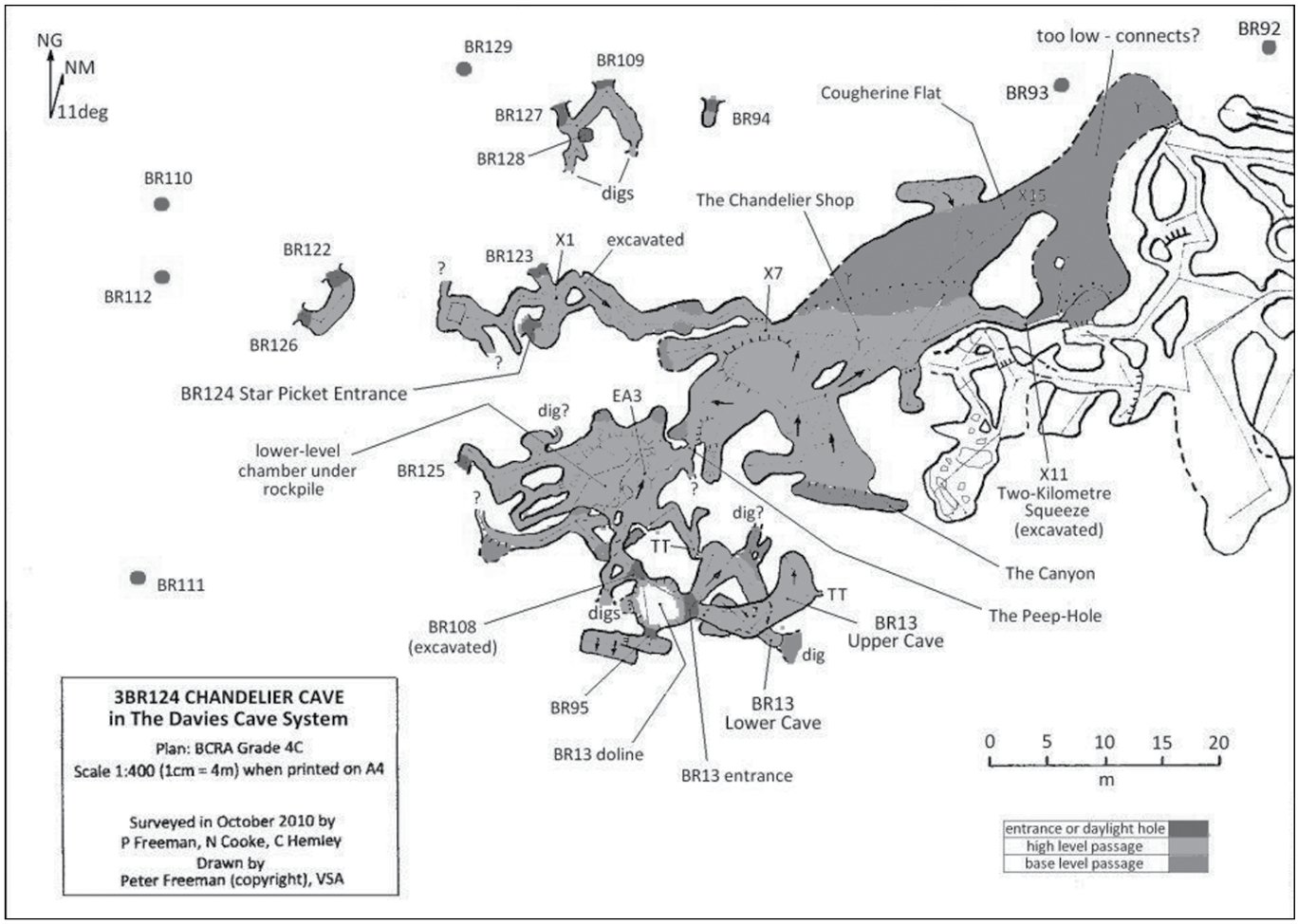
3.3. BR5 — *Big Cave*

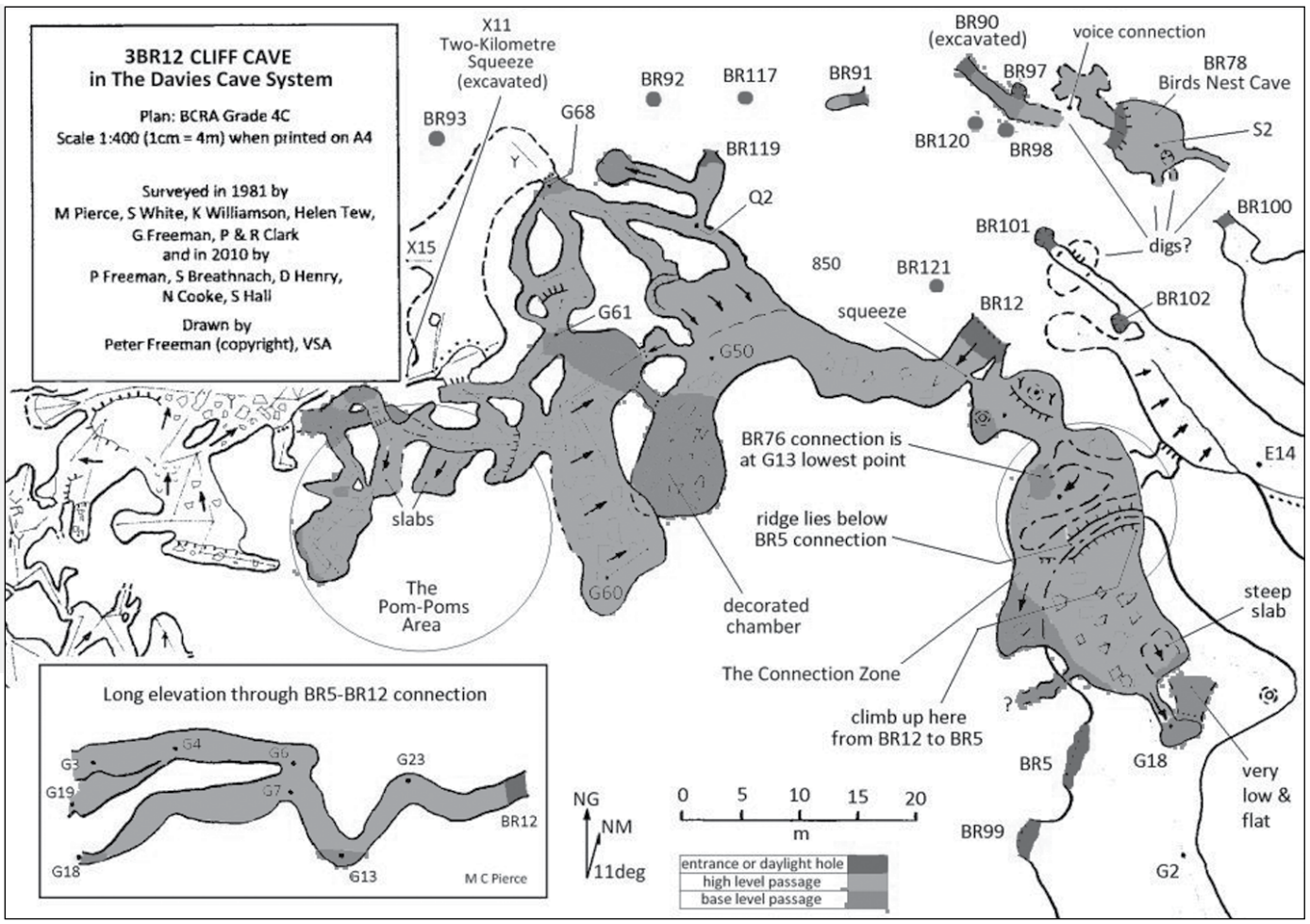
The west-facing BR5 entrance is large and obvious (while nearby BR99 is easily missed), and it slopes down into a large N-S chamber. Heading north soon brings you to the BR12-BR5 connection described above. Heading south leads to a branching point. The deep rockpile here hosts a maze of interconnecting cavities: small 'caves' within the cave.

The right branch is the way to the BR40 entrance, and to multiple dead ends further SE. Most of that part of the cave is low.

Left at the branch-point is 'The Lost Passage', named for the fact that, although it was surveyed in 1981, it does not appear on the cave-map from that era. The Lost Passage is a spacious tunnel formed by collapse in steeply dipping rock, and also hosts the 'cave-within-a-cave' phenomenon on its upper slopes. It leads to areas decorated


THE DAVIES CAVE SYSTEM
Bats Ridge, Vic
Overall Plan Showing
Components and Prospects
Scale 1:1500 (1cm = 15m) when printed on A4
Drawn by
Peter Freeman (copyright), VSA
November 2010
BR78 Birds Nest Cave
BR76 Emu Two Step
BR124 Chandelier Cave
BR12 Cliff Cave
BR11 Old Cave
BR5 Big Cave
BR10 Waterfall Cave
BR73 Old Shoe Cave
Graveyard Extension
129
109
94
93
92
117
91
121
110
112
122
111
95
38
131
39
106
88
113
118
89
NG
NM
11deg
0 10 20 30 40 50
m


NG
NM
11deg
BR129
BR109
BR127
BR128
digs
BR94
too low - connects?
BR92
BR93
Cougherine Flat
The Chandelier Shop
X15
BR110
BR112
BR122
BR126
BR123
X1
excavated
X7
BR124 Star Picket Entrance
dig?
EA3
lower-level chamber under rockpile
BR125
X11
Two-Kilometre Squeeze
(excavated)
TT
The Canyon
The Peep-Hole
BR111
BR108
(excavated)
digs
BR13
Upper Cave
dig
BR95
BR13
Lower Cave
BR13 doline
BR13 entrance
0 5 10 15 20
m
entrance or daylight hole
high level passage
base level passage
3BR124 CHANDELIER CAVE
in The Davies Cave System
Plan: BCRA Grade 4C
Scale 1:400 (1cm = 4m) when printed on A4
Surveyed in October 2010 by
P Freeman, N Cooke, C Hemley
Drawn by
Peter Freeman (copyright), VSA



with very large speleothems, many in good condition and quite active in wet weather. At the very end base level can be seen but not reached. The final ten metres at the high level has a clearly phreatic form: smoothly undulating roof shapes, and two large blind solution domes. This is out-of-character for Bats Ridge.

A few metres from The Lost Passage's end, on the left near a large column, but not obvious, is a steeply down-sloping passage that leads to the base of the BR77 Shaft Entrance. This shaft has unstable rockpile on the left side (looking outwards), but it can be easily and safely climbed by carefully avoiding that instability. It emerges into the BR77 doline (see under Emu Two Step).

Big Cave (and most other caves in the area) used to house bats: remains of guano can be seen scattered throughout.

3.4. BR76 — *Emu Two Step*

Emu Two Step (ETS) forms the key connection between long-known caves: Big Cave and Cliff Cave to its west and Old Cave to its east. It was therefore the catalyst for discovering the major system.

The nominal (BR76) entrance to this part of the cave is a 3 m deep and 1 m diameter 'solution tube' that leads into a chamber a few metres in diameter. A larger hole, BR107, also descends from the surface into this chamber, completing an unusual scene. The chamber has no dark zone.

From this daylight zone a squeeze through rockpile at floor level leads westward into the rest of Emu Two Step. The E10 Chamber is thus entered, and this is one of the best-decorated and most well preserved locations in the system. At its far end an up-slope leads out of entrance BR100, and in fact this entrance is the most convenient way into ETS, rather than laddering into BR76/107.

A low archway in the E10 Chamber leads southward into the E14 base level area. Two further entrances are located in this part of the cave, but, more importantly, the link to BR12 is here. The connection window is human-sized, but should not be attempted since the roof above it is unstable. Beyond the window is a 2 m drop to system base level, followed by a few metres of crawling to emerge into BR12's Connection Zone.

East of station E14 the passage is blocked at the base level, but a nearby climb followed by a crawl over the obstructions, leads into the F7 base level area. Following the obvious route will eventually lead you up a rising crawl to emerge via BR96 entrance into the northern side of the BR77 Doline. Alternatively, pushing eastwards you may pass through The Window to the H15 Room and connect with BR75 and thence BR11. The link to BR75 is a very tight upward vertical squeeze.

3.5. BR11 — *Old Cave*

This spacious cave contains very old graffiti, hence its name. It has also been known as '1864 Cave' owing to the date in one inscription.

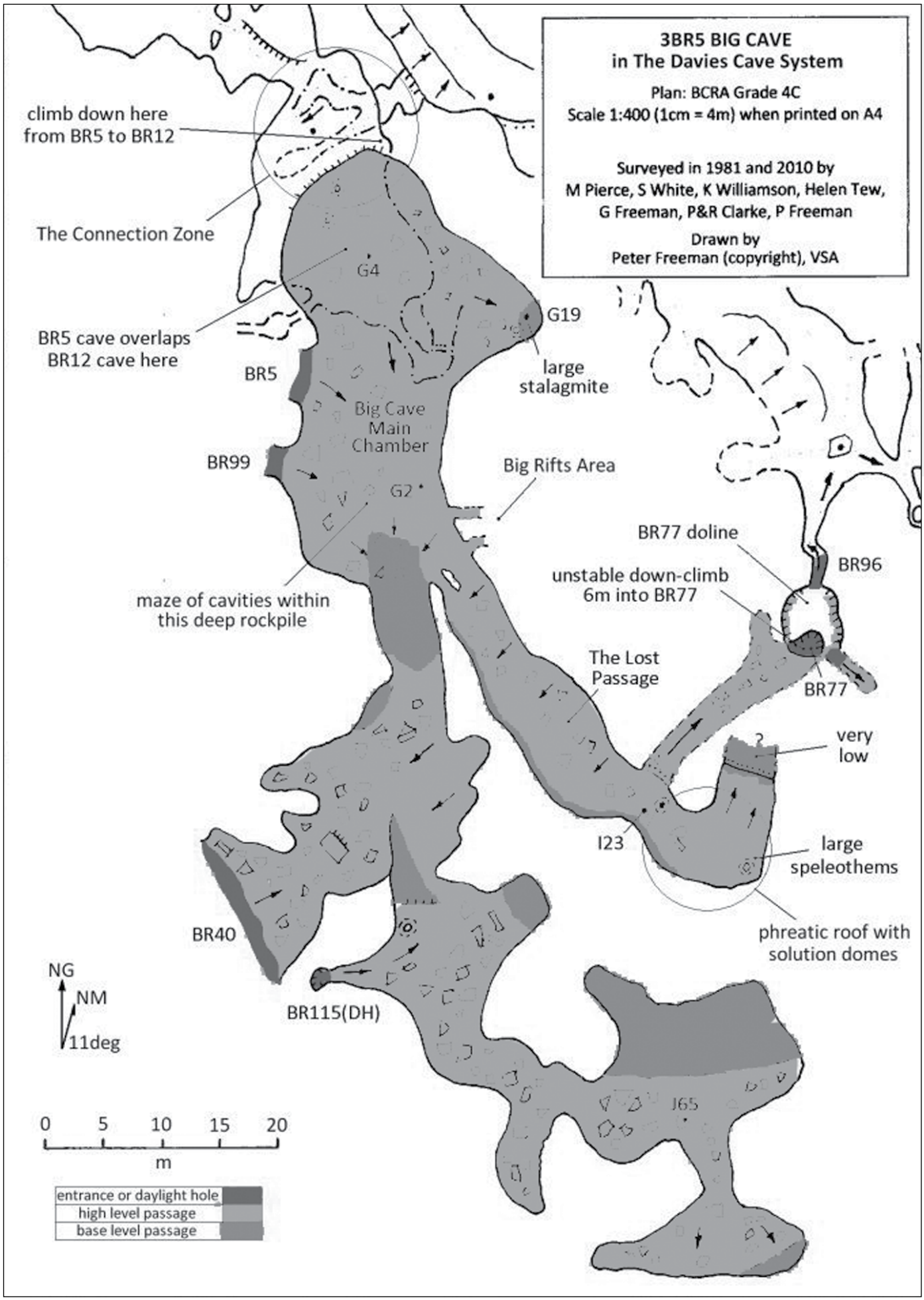
BR11's western branch (enter then turn right) consists primarily of the large Main Chamber. Several subsidiary locations may be accessed from there, most importantly the 'Cement Bag'. Named for the ubiquitous white dust, this is where to find the connection to Emu Two Step. The connection is via a squeeze up into BR75, followed by a squeeze and drop down into ETS's H15 Room.

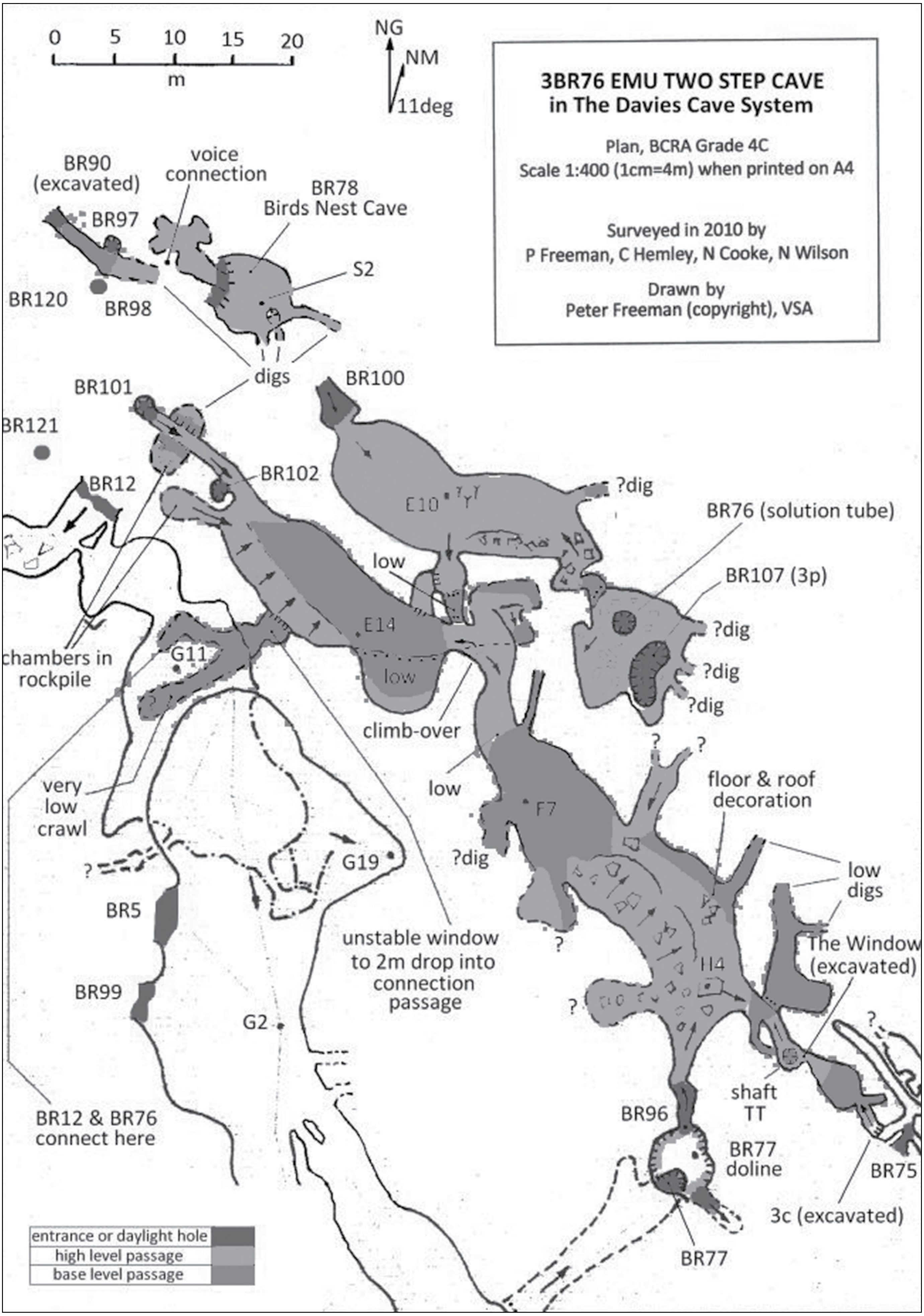
BR11's eastern branch, reached by walking straight ahead after entering the cave, is also spacious. It loops to the left and reaches daylight at the north-facing BR74 entrance.

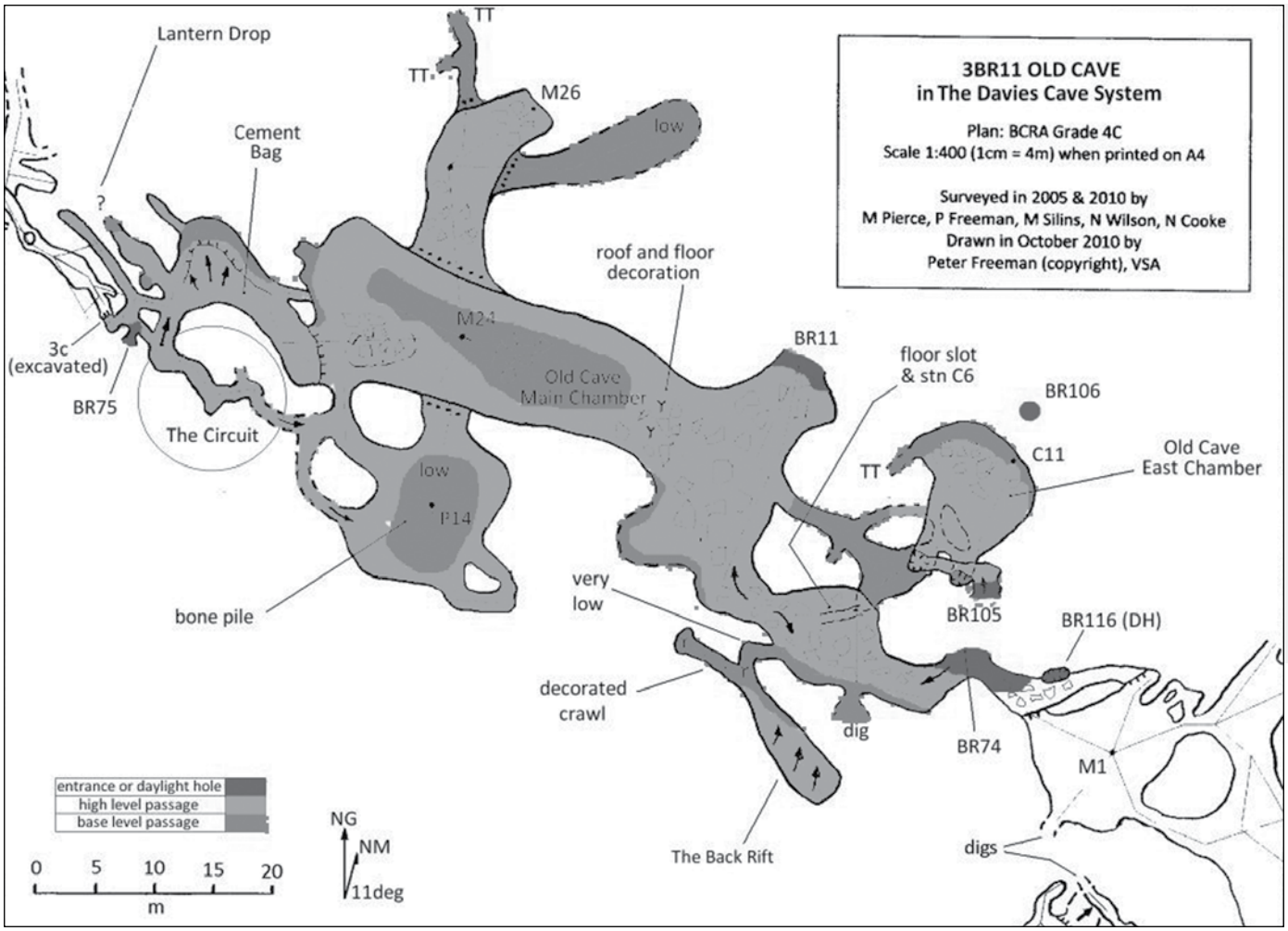
Old Cave has a small eastern area, centred on the C11 Chamber. It is likely that this chamber could also be reached from entrance BR106, if that were excavated. There is also the Back Rift area, which is further into the ridge.

3.6. BR10 — *Waterfall Cave*

Like BR11, this part of the system is long-known. The nominal (BR10) entrance


3BR5 BIG CAVE
in The Davies Cave System
Plan: BCRA Grade 4C
Scale 1:400 (1cm = 4m) when printed on A4
Surveyed in 1981 and 2010 by
M Pierce, S White, K Williamson, Helen Tew,
G Freeman, P&R Clarke, P Freeman
Drawn by
Peter Freeman (copyright), VSA
climb down here
from BR5 to BR12
The Connection Zone
BR5 cave overlaps
BR12 cave here
G4
G19
large
stalagmite
BR5
Big Cave
Main
Chamber
BR99
Big Rifts Area
G2
maze of cavities within
this deep rockpile
BR77 doline
BR96
unstable down-climb
6m into BR77
The Lost
Passage
BR77
very
low
I23
large
speleothems
phreatic roof with
solution domes
BR40
BR115(DH)
J65
NG
NM
11deg
0
5
10
15
20
m
entrance or daylight hole
high level passage
base level passage


0 5 10 15 20
m
NG
NM
11deg
3BR76 EMU TWO STEP CAVE
in The Davies Cave System
Plan, BCRA Grade 4C
Scale 1:400 (1cm=4m) when printed on A4
Surveyed in 2010 by
P Freeman, C Hemley, N Cooke, N Wilson
Drawn by
Peter Freeman (copyright), VSA
BR90
(excavated)
voice
connection
BR78
Birds Nest Cave
BR97
S2
BR120
BR98
digs
BR100
BR101
BR121
BR102
?dig
BR12
E10
BR76 (solution tube)
low
BR107 (3p)
E14
?dig
G11
low
?dig
chambers in
rockpile
?dig
climb-over
floor & roof
decoration
very
low
crawl
low
F7
G19
?dig
low
digs
BR5
The Window
(excavated)
unstable window
to 2m drop into
connection
passage
H4
BR99
G2
shaft
TT
BR96
BR12 & BR76
connect here
BR77
doline
BR75
3c (excavated)
BR77
entrance or daylight hole
high level passage
base level passage



leads down a steep dusty slope into the good-sized Main Chamber. This room contains much rockpile debris, easily negotiated or avoided; and, occasionally, bats in ceiling roosts. At the chamber's furthest SE point is The Dangerous Crawl (do not use!), and a safer excavated crawl that leads to The Stalactite Graveyard. Here, amongst beautiful active formations, are large broken speleothem remains strongly calcited into their fallen positions, which prompt questions regarding what major disruptions long ago resulted in such massive breakages and displacements.

At the other (SW) corner of the BR10 Main Chamber is a squeeze into the Powder-Keg Extension. This area features steeply dipping flat roofs and extensive stalactite decoration.

NW from the BR10 entrance, a very low crawl leads into the M1 Chamber. In practice this room is more conveniently entered by going eastwards, only just underground, from the BR74 entrance. M1 Chamber is of a reasonable horizontal extent, but only stooping height.

In the east wall of Waterfall Cave, between entrances BR10 and BR103, an obscure passage leads eastwards into the 'Dug-Out', which is more easily accessed via the separate BR87 entrance.

3.7. *The Currently-Non-Connected Caves*

Exploration of the Davies System is still in progress. The hope is to find new caves that have underground connections into the system, and to find or excavate links from the system into already-known nearby caves.

Of the already-known caves the most interesting is Old Shoe Cave just east of Waterfall. It is hoped to connect this via a link into the Graveyard Extension, or via a longer link to BR88 Green Worm Cave and thence to Waterfall Cave or The Dug-Out.

Birds Nest Cave lies just to the north of Cliff Cave and Emu Two Step. The two entrances BR90 and BR78 are practically joined, but heavy collapse associated with The Cliff renders an underground connection to the main system problematic.

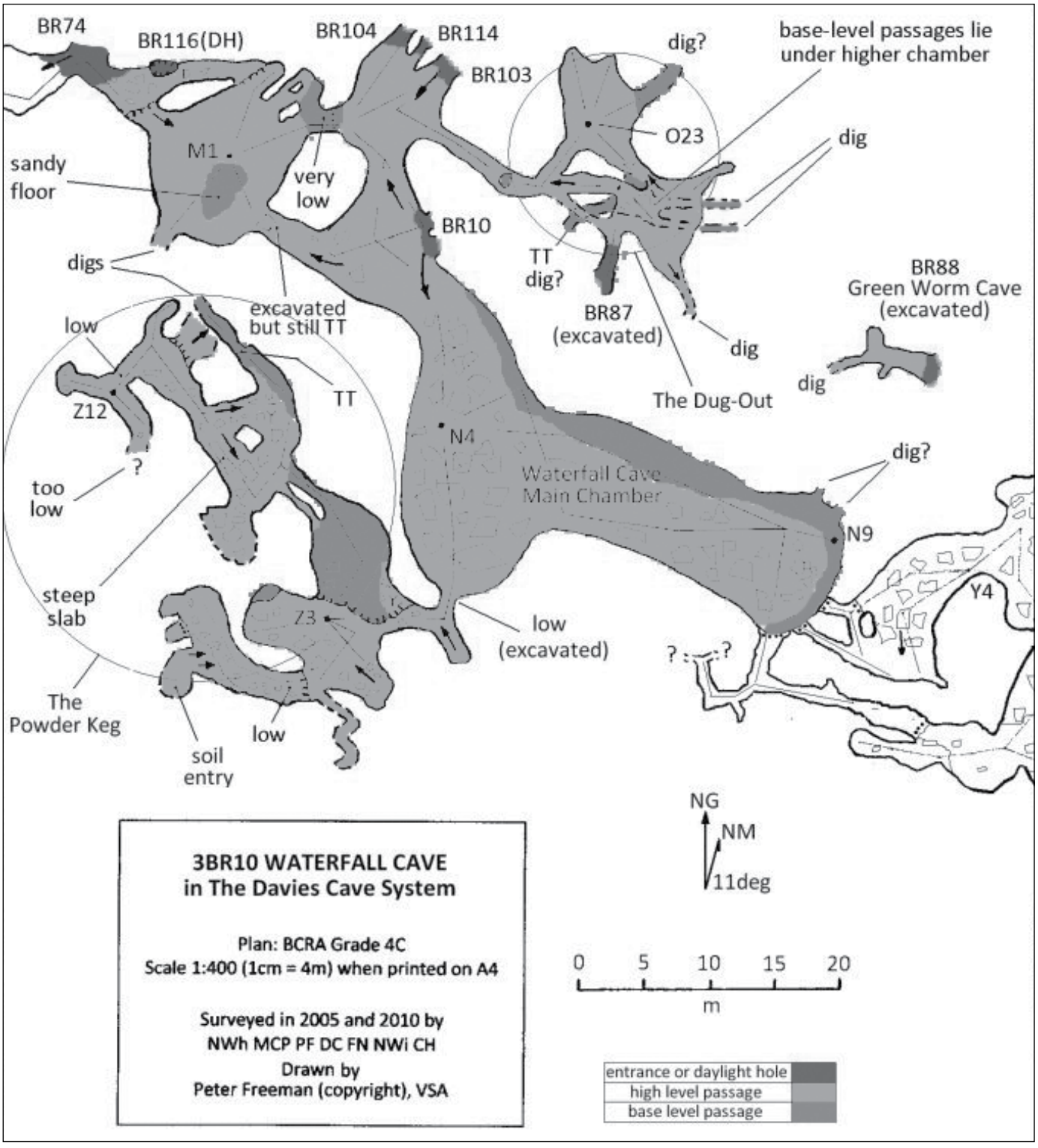
Several of the more far-flung cliff entrances, especially BR109 and BR122, could link to Chandelier Cave. Also, it is possible that other entrances are yet to be discovered in that area of heavy bush.

BR38 and 39 are small open caves, but have so far shown little likelihood of extension. The group of caves centred on BR18 Hammer Cave, and the group centred on BR36 Remembrance Cave, logically belong in this system, but each is well over 300 m from the interconnected system and so must be discounted as prospects.

4. MORPHOLOGY

Most of the Bats Ridge caves are developed on one level: approximately between 70 and 90 m ASL, with most entrances lying on the 75 m contour around the main ridge and its branches. The caves stand, now, above the surrounding (usually dry) lakes. The speleogenesis is thought to be epiphreatic (i.e. having occurred only just below a former water table), and syngenetic (i.e. dissolved by static but very aggressive ground water even as the dune limestone was still consolidating). This process has produced mainly flat caves. Collapse of the weak rock, followed by solution removal of the debris, has created dome chambers and the entrances that we use. As the coastline receded and left successive dune ridges behind, rainwater lagoons pooled on the inland side of the dunes, so the most active solution of limestone occurred on these north-facing slopes. This perhaps explains why entrances tend to be open on the north and west slopes of the ridges rather than the south and east. See references White (1994,1997) for more details of this well-covered subject.

In many of the caves a distinctive 'base level' is noticeable, manifesting as a 'flat-



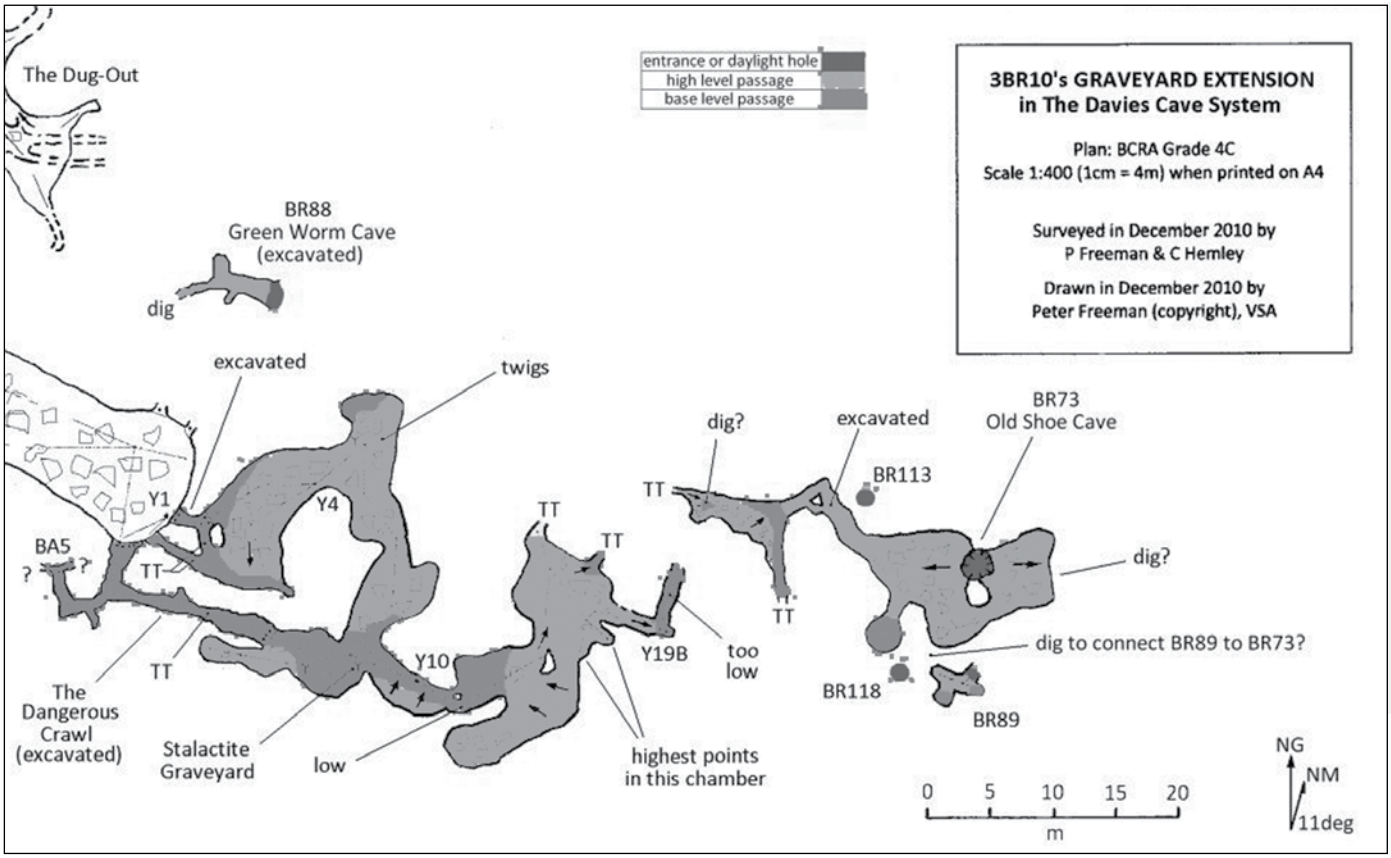
tener' passage or as a flat earthy floor in a chamber. Sometimes, in collapse chambers with large rockpile fragments, the base-level floor is visible between and below rockpile fragments. Occasionally this phenomenon produces an under-storey of crawl spaces, or even the 'cave-within-a-cave' feature. Base level walls frequently show a flooding stain 30-60 cm above the floor. Throughout Davies Cave the base level is approximately 70 m ASL. The variations in this level over the range of caves at Bats Ridge is discussed in White 1994. The base level has been important in the exploration process. Firstly, it acts as a landmark, often hinting at a connection by a similarity to another known piece of cave.

Secondly, it can act as an open conduit in otherwise badly-collapsed areas. Typically in these situations, a flattener on a silty floor runs through either in situ bedrock, or between large solution-modified rockpile fragments that often seem like bedrock until close inspection.

The Big Cave component of the Davies System is slightly unusual in having more vertical development than most of the other caves. This characteristic is most marked in the region where BR5 and BR12 overlap: the different levels produce quite complex and difficult-to-map shapes. Even more surprisingly, large areas of un-collapsed base level flattener remain as the lowest of three layers, especially in parts of BR12.

The flatteners remain intact despite the major collapses that have occurred only a few metres above. These areas are clearly seen near survey stations G18, E14D2 and C4. However, most are too low to be penetrated far.

Big Cave is also unusual in showing what appear to be distinctively-phreatic



features at a high level: the final few metres of The Lost Passage have a roof shape that is smoothly undulating, as if formed by phreatic solution rather than collapse. At the same location there are at least two large blind solution domes or 'bell-holes' in the ceiling. All other high chambers in the system are obviously formed by collapse, so this anomaly is perplexing.

Since most of the cave volume has been generated by collapse, and such collapse is, geologically-speaking, quite recent, there is much instability in the cave. This is evident mainly in roofs of larger passages and chambers, but occasionally affects the flat ceilings of the usually-safe base-level regions. Great care must therefore be exercised by all visitors.

5. PROSPECTS

Exploration of the system is ongoing and there are many prospects for its extension. There are empty areas of the cave map that seem as if they should host passages. In particular:

- The area on the north slope of the ridge as it continues ESE from BR10
- The area W and SW of BR12, at the western end of the ridge
- The area just SE of BR76 entrance.

Other places to carefully examine are:

- The remaining cliff entrances
- Non-connected caves already described
- The south slope of the ridge, where there could be a whole parallel E-W cave system
- All other ridge slopes at the 75 m contour.

Many of the prospects will yield only to excavation, but fortunately excavation in this soft limestone is often not arduous. It can, however, be dangerous (watch the roof!), and bush-bashing on the surface is very trying in parts.

6. HISTORY

The first serious explorations of this cave area appear to have been made by Batt. He gave his name to the Batts Hill feature, and to the area generally (Bats Ridge, or Bat Ridges). Therefore the area is not named for the small flying mammal that does occupy some of the caves. One cave is actually named Coulson-Batt Cave, which also commemorates the other early worker here, Coulson.

The Davies family have long owned the private portion of Bats Ridge, where this system is located.

Most of the public flora and fauna reserve was also donated by the family, hence the naming of its walking track after the late Fred Davies.

The early VSA was very active in this area in the 1970s and 1980s, and the caves feature prominently in the academic work of Dr Susan White (1985, 1994, 1997). Early VSA notes recount the owners passing down the traditional names of the caves, which are still generally in use.

Big Cave, Old Cave and Waterfall Cave have been known since at least 1864, as shown by the internal inscriptions. They were entered by the VSA team in the 1970s, and CEGSA also did some exploration in 1976, the results of which were unfortunately not consolidated into the general knowledge base until recently. BR5/12/40 was mapped in 1981, but this was the end of Susan White's intensive work in the area, and BR10, 11 and others were then neglected until visitation resumed in 2005. An intensive spell of work in 2010 and 2011, by VSA cavers led by Peter Freeman, made new discoveries and connected the major components. The discovery of Emu Two Step's extent, and its role as a link, was notable.

7. EQUIPMENT GUIDE

No special equipment is required. With minor exceptions, the Bats Ridge caves are horizontal in nature.

8. REFERENCES

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Tommy Grahams Cave temperature study

Peter Buzzacott
WASG

THIS ARTICLE reports on potentially the first use of Sensus Ultra data loggers to map temperature distribution within a flooded Australian cave. Temperature mapping is useful to identify vertical stratification, such as thermoclines which determine the range of certain biota, or to identify 'hotspots' such as thermal springs.

On 6 March 2010 divers placed 15 data loggers throughout both sumps of Tommy Grahams Cave, in the Nullarbor Karst of the south-east region of Western Australia. The following day the loggers were collected and time/depth/temperature data downloaded using a downloading interface manufactured by ReefNet (Mississauga, Canada). The loggers are made of yellow glass-fibre reinforced polycarbonate and measure 25 mm x 33 mm x 43 mm (Figures 1 and 2). Each logger is individually serialised both with an identification label on the exterior and electronically, which is automatically recognised when connected to the laptop (Wilk 2006). This made it easy to keep track of which logger was placed where in the cave.

Figure 1: Sensus Ultra, front profile

Figure 2: Sensus Ultra, reverse

Time is tracked internally by a simple 32-bit counter retrospectively calibrated to a date and time whenever the logger is connected to the computer. The loggers have a pressure resolution to 1 mbar, with an accuracy +/- 30 mbar, equivalent to 30 cm change in depth whilst immersed in seawater. Temperature was resolved to 0.01°C and accurate +/- 0.8°C. The sampling rate in our study was left to the default of 10-second intervals but it can be set to longer or shorter sampling periods.

Inter-logger variance gives a reliability measure that is appropriate for temperature comparisons throughout the cave. Prior to being deployed in Tommy Grahams Cave, the 15 loggers were evenly distributed along a rod suspended below a single pivot (Figure 3) and taken for what was arbitrarily considered likely to be a 'standard dive', which was to 10 m depth for one hour in 20°C water.

The mean recorded data and standard deviations were as follows:

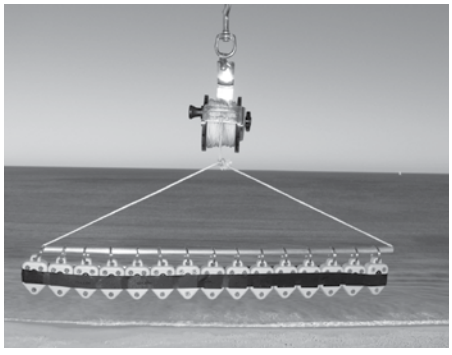

Figure 3: Measuring inter-logger variance

Max depth	10.01 m	(SD 0.05)
Ave depth	9.40 m	(SD 0.03)
Bottom time*	3670 seconds	(SD 0.00)
Ascent rate	8.73 m/sec	(SD 0.58)
Ave temperature	20.00	(SD 0.18)
Min temperature	19.80	(SD 0.13)

**NB. Data were recorded at 10 second intervals. Each logger recorded 367 time-interval data. Bottom-time, as defined by PADI (Richardson 1999), was exactly one hour, with an additional 70 seconds to ascend from 10m.*

LOOKING FOR 'HOT SPOTS'

Fourteen loggers were put in place and left overnight in Tommy Grahams Cave (the 15th was used to search for thermoclines). Each logger's position was recorded on an underwater slate. The next day the team returned and collected the loggers. The dives were 'mission focused', (meaning they were relatively busy affairs with little spare time for sightseeing), and conducted safely and successfully.

Temperatures recorded in the first sump during the 17th hour, and in the second sump during the 18th hour, were averaged and mean temperatures are plotted in Figure 4.

DISCUSSION

These loggers have proved themselves both useful and robust in an Australian flooded cave environment. They offer the potential for short term mapping, such as in this study, or for use in longer studies such as in daily or seasonal investigations. The accompanying software is intuitive and the back-up support from the manufacturer has been, (in the author's experience), both prompt and helpful. Since the Tommy Grahams study these loggers have identified an unexpected second thermocline at 60 m depth in a Greek cave, measured the depth of certain points in other caves, and even tracked the dive profiles of divers for average gas consumption and other physiological calculations.

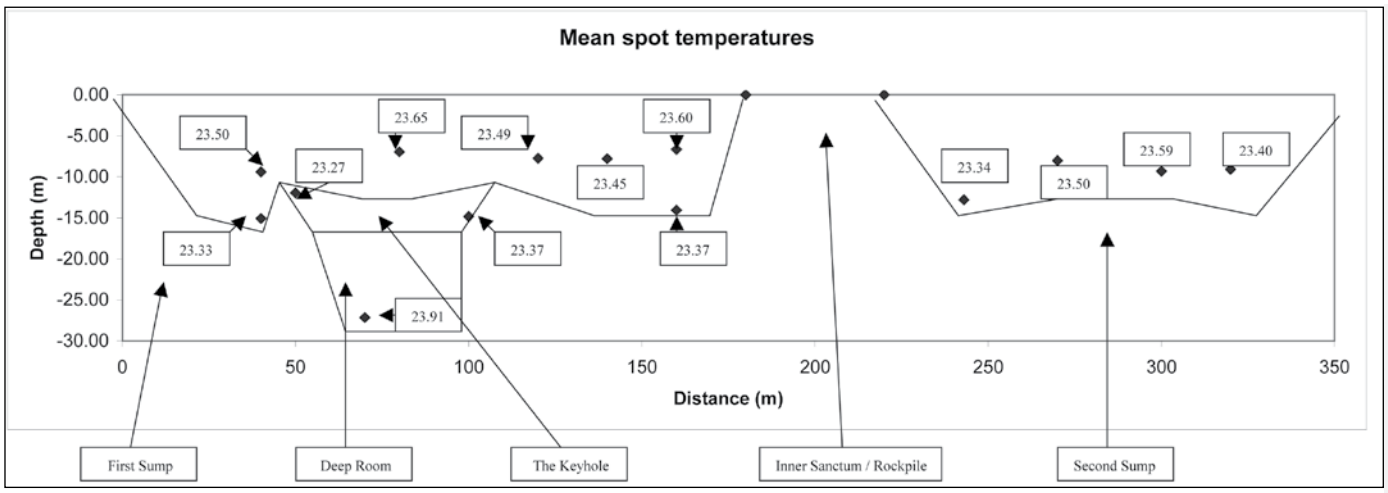

Figure 4: Mean temperatures over one hour throughout the cave

CONCLUSIONS

- From the mean 'spot' temperatures, there is no obvious temperature gradient along the length of the cave.
- Warm water may be entering the deep room, rising up through the fracture to the roof of the first sump.
- During the next visit all 15 loggers will be deployed in the deep room in an array, to search for a 'hot-spot'.
- In the second sump potential sources of warmer water entering the cave should be looked for between 50-100 m distance from the rockpile.
- These instruments have been usefully deployed in Australian caves.

If any managers of flooded caves are interested in mapping temperature distributions then feel free to contact me at reefdiving@eftel.com.au

ACKNOWLEDGEMENTS

Scientific advice was gratefully received from the Cave Divers Association of Australia (CDAA) Science Officer, Trent Lee. CDAA members Peter Streit, Trent Brockhouse and Bruce Bulled assisted with the dives. No financial assistance for this project was sought or received. Permission and the relevant permits were obtained from the CDAA, DEC (Esperance office) and the DEC Wildlife Branch, Perth, WA.

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W S Liddle and Caves

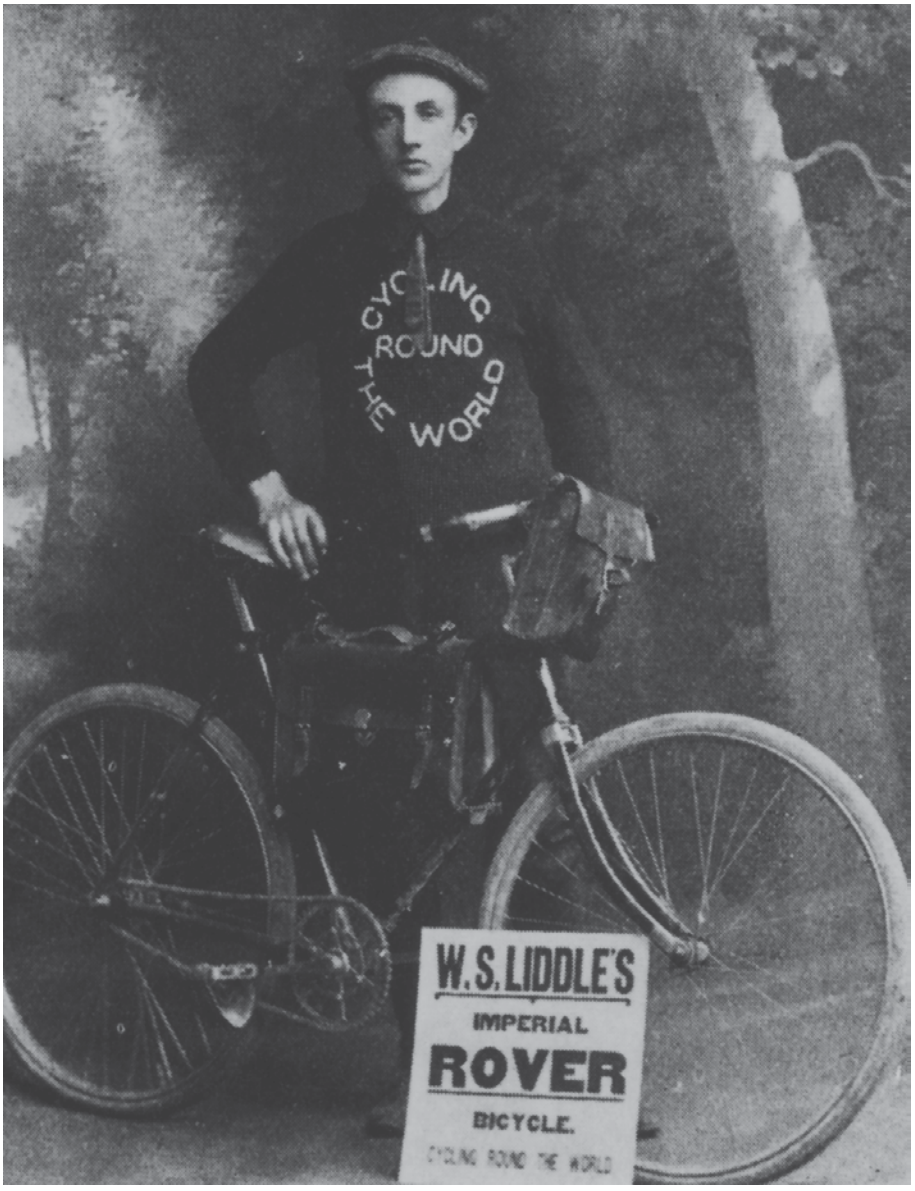
Stephen Blanden
NC

DURING a caving trip to the Mersey Hill catchment area at Mole Creek, Tasmania, a visit was undertaken to the Mersey Hill Cave (MC.75), on which I located three signatures (they had been mentioned to me by Arthur Clarke), 18 metres in from the entrance, just before the first low crawl. Of the three names engraved on the right hand wall, one was unreadable, a second appeared to be Loyding Round and the third was a definite W S Liddle along with the date 14/3/1907.

Coincidentally, through subsequent cave related research at the Burnie State Library, I came across the name W S Liddle in relation to a visit to the newly discovered Scotts Cave. From other research in tracking down W S Liddle I had reached a dead-end as the name Liddle is little used and only one person with the surname currently resides in the north of Tasmania. As a result of a conversation with this person I found out that he knew of no W S Liddle and he mentioned that there are very few people with this particular surname. Thus it was a surprise to discover the name in several old newspaper articles.

William Liddle was a 25-year old-man from the Orkney Islands, Scotland, who was a draper by trade and was touring the world on a bicycle (a relatively major feat for the early 1900s). He spent two years with the Scottish Cycle Corps in the Boer War at the conclusion of which he conceived the idea of a bicycle trip around the world. The bicycle he used was a Dunlop Royal Enfield. He commenced his journey from Capetown, South Africa on the 14th December 1905, travelling north through Cape Colony, Orange River, Transvaal then returning south through Natal, Durban to Port Elizabeth.

From Port Elizabeth he worked his passage on the SS *Linden* across the Indian Ocean to Melbourne. He then cycled north passing through Bendigo, Hay, Bourke, Longreach, and Charters Towers to Cairns, from where he headed south reaching Bundaberg on 31st October 1906. He continued down the coast, visiting Brisbane, Newcastle and eventually Sydney before heading inland and back down to Melbourne via Penrith, Liverpool, Goulburn and Wangaratta visiting the Jenolan Caves on the way. Catching the SS *Flora* across Bass Strait and landing in Burnie, Tasmania on 23 February 1907, he visited several townships along the north coast before arriving at Deloraine on Tuesday 12 March 1907 to be accommodated at the British Hotel.



STEPHEN BLANDEN COLLECTION

W S Liddle: from one of the postcards he sold along the way to fund his world tour

On Wednesday, 13 March 1907, a group of visitors and Deloraine residents consisting of Mr. G. Cameron (Secretary), Dr. Harricks (Vice-Chairman) and Reverend A.D. Leckie [all from the Deloraine Improvement and Tourist Association] along with Mrs. Harricks, Miss Dickson and W.S. Liddle, to name a few, toured the newly discovered caves on George Scott's property at Mole Creek.

A very descriptive narrative of this trip was published in *The Advocate and Times* (20 March 1907) and is as follows:

> About twenty yards from the entrance is 'The Fountain', the first 'lion' of the caves – a very unique formation likened unto a fountain with a lovely surrounding of coral. Some very fine pillars of 'white granite' then lead on to the 'King Palace', and well-

named indeed is this chamber – a palace any king would be proud to own. The floors of these caves are a sight themselves, almost the whole route of the left wing being studded as if with diamonds, the walls seemingly hung with numerous shawls of pretty white and salmon tints. Into the 'Banqueting Room' we next were ushered, the floor here especially being simply magnificent. The whole surface seems covered with sparkling shells of wonderful formation, while from the ceiling clear pillars of white join with duplicates from the floor; here and there intermingled are some rarer ones of a salmon color, while clear strands of perfectly formed stalactites hang in hundreds in various lengths, some the thickness of straws, others like clubs of many fantastic shapes, the coloring being very fine indeed. Adjoining this is the 'Amphitheatre.' Here is portrayed in a glittering mass the formation of a miniature theatre, with its tiers of seats one above the other.

A very unpoetic nom de plume was given to the adjoining passage, 'The Butcher's Shop,' the formation here being grand in the extreme. The whole cavern was suitably named the 'Palace of Beauty.' Passing on a few yards a large 'waterfall' of solid white rock greets the eye. For a moment one hardly grasps the possibility of it being anything else but a 'real waterfall.' It is in shape like the Victoria Fall on the Liffey River. At its base is clearly shown the glittering water flowing, but alas! it is with the other a grand deception, for it's all solid rock; and as if to guard it from view, from the next cavern there hang from the roof two curtains, which also prove to be a little harder than the ordinary drawing-room ones. Along 20 yards of passage-way the 'Witches' Banqueting Hall' is reached, and here at the entrance is a 'wishing chair,' and, needless to say, others of the party besides the ladies were not proof against taking a seat and having a 'wish.' This hall is from 30 ft to 40 ft in height, and has on the one side a sloping floor and on the other a balcony or gallery capable of holding a hundred people. At the entrance to this cavern is a large harp, and a good sounding one at that, surrounded with a handsome 'Shetland shawl.' Turning back from here the 'Palace of Beauty' is soon passed, also the 'Kings Palace,' and as if to guard you from taking a wrong turn three pretty limestone statues, 'Faith, Hope and Charity,' guide you on and the 'Registry Office' is safely reached.

The 'Right wing' was then explored. Some very nice galleries are passed through, but the first halt of interest was made at 'Gog and Magog,' two pillars of solid rock, and, as if in a mirage appearing, their duplicates hang from the ceiling. Entering a long chamber of pure white formation the 'Kings Table' is found, the missing link here being its want of proper edibles, and it is really the second prettiest scene in the whole of the caves. A little water has here to be negotiated, but it is not at all necessary to get your feet wet. Along the passage way a short distance are some very comical samples of limestone formation, chief being the 'Elephant's Head,' with a perfect trunk all complete. Then comes the 'Turkey Gobbler.' On the opposite wall hang some excellent exhibits of 'cave shawls.' Along the course of the creek from here are some very peculiar pieces of rock, chief being a good imitation of the Chalk Cliff of Dover, near which are some lovely specimens of coral stalagmites and an uncommon piece, partly in the form of a reindeer's horn; also the form of a cow, a tiger's head, a pineapple and some seaweed, the whole closing with a sparkling mass of rock named Nelson's Column and the Pulpit Rock.'

Liddle, who had recently visited the Jenolan Caves expressed an opinion that these caves, though not nearly as extensive, were far ahead of Jenolan, especially the stalactite formations. During the trip through Scotts Cave, he remarked

> 'Jenolan Caves cannot come up to this, and on a whole, these caves are prettier than Jenolan because you have it all in one continuous line; the floor is far beyond any to be seen at Jenolan.'

After being suitably impressed with what he had observed in the Mole Creek district, he decided to return to the area the next day (14 March) and as can be determined from the evidence of his signature and corresponding date, toured through at least part of Mersey Hill Cave. One can only speculate as to what other caves he may have visited in the Mole Creek area; maybe the discovery of further signatures may shed some light on this.

Liddle arrived in Launceston on the 20th March and conducted several lectures describing his adventures. He supported himself while on tour by undertaking these talks in most towns he visited and also by selling postcard souvenirs of himself. He commenced his journey from Capetown with only two halfpennies in his pocket. Continuing on his cycling tour he reached Hobart by 8 April 1907 via Scottsdale and St Marys before setting forth for New Zealand and spending several months touring through both the North and South Islands. By the time he left New Zealand he had travelled 16,000 miles.

It was interesting coming across the W S Liddle signature in the cave then the subsequent research in newspapers which yielded information about the person. Other fascinating stories could also be gleaned from signatures in caves.

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Anon., 1907. A Round the World Cyclist. *Wanganui Herald,* 16 August, 1907:7.

Anon., 1907. Cycling Round the World. *Taranaki Herald,* 21st September, 1907:7.

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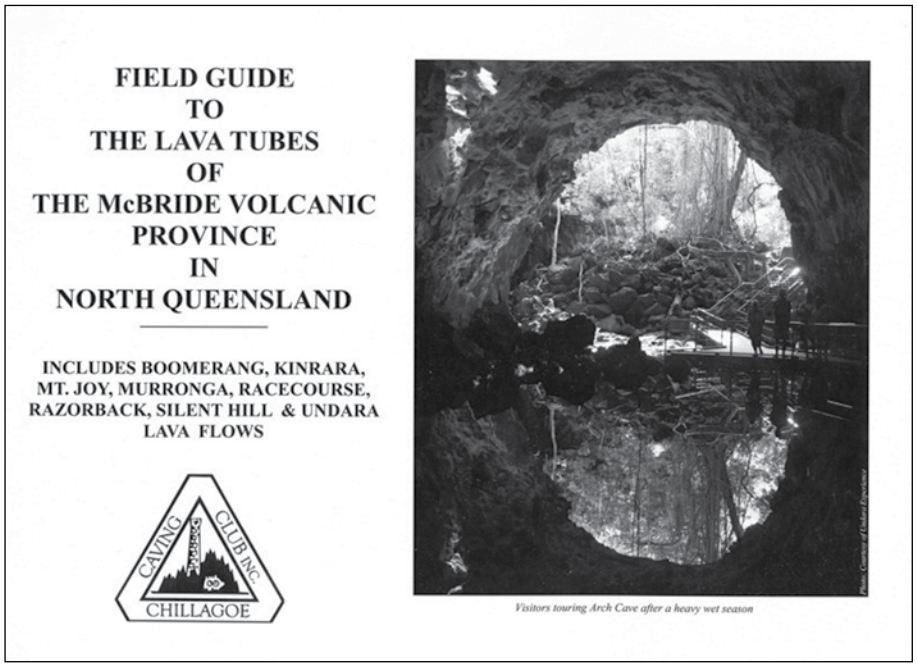
REVIEW

New guide to McBride lava tubes

Review by Greg Middleton

Field Guide to the lava tubes of the McBride Volcanic Province in North Queensland. **Edited by Les Pearson. Published by Chillagoe Caving Club Inc., PO Box 92, Cairns Qld 4870. Price $35 + $3 postage and packing. 105 + iii pages; colour cover; numerous photos and maps.**



After a bit of a long gap, this publication adds to the series of six (limited edition) speleological field guides published by Chillagoe Caving Club. Strictly speaking it replaces one of them, Mick Godwin's (long out-of-print) *Undara and Associated Lavafields of McBride Plateau Speleological Field Guide* (1993). Mick's guide brought together the early work of Shannon, Grimes and Watt, combined with the systematic work of Anne Atkinson in the 70s and the seminal contribution made by the members of the 1989 Operation Raleigh project, under Mick's supervision and guidance. While there is a wider coverage of caves in the 'new edition' (discoveries have been made outside the Undara flow since 1993), details of vegetation and land systems and sections on conservation and management have not been retained, although the historical section has been expanded. (The vegetation information is planned to be the subject of a future *Tower Karst* occasional paper.) There is an overview of the progressive reservation of the lava province (Undara Volcanic National Park and seven other reserves) and the development of tourist facilities. Virtually all of Mick's cave descriptions and maps have been retained, along with his silhouettes of cave entrances (from the inside looking out) – though these have been reduced to the point where they may be of little value.

Where this guide really shines is in its lava flow maps and aerial photo-maps, painstakingly prepared by CCC's Mapping and Survey Co-ordinator, Peter Bannink. These maps have a clarity which is immediately striking, even by modern standards of digital cartography and high-quality printing. Most innovative and informative are the aerial photo-maps on which major features are indicated and 20 m contours have been superimposed. Of particular interest is an aerial photo of the terminal section of The Wall — subject of ongoing controversy as to its genesis and significance — showing some of its features.

The introduction explains the geological situation which is complicated by the fact that within the 5500 sq. km McBride Volcanic Province there have been at least nine eruptions during the past million years or so, most recently that from the Kinrara Crater, perhaps only ending as recently as 13,000 years ago. The major flow, dated at about 190,000 years and containing the majority of caves, is Undara which, at about 160 km, is the longest lava flow in Australia — and the world, if only "young" flows are considered. More information than in the 1993 guide is included on the lesser-known flows: Murronga, Racecourse, Boomerang, Mt Razorback, Silent Hill and Mt Joy. The bulk of the guide is taken up with details of each of the recorded caves (87 in all, though one of these, rather carelessly, seems to have been lost!)

The details provided include grid references, together with locations shown on the aerial photo-maps — and herein lies a problem for the publishers. Making such detailed location information public is contrary to accepted practice by ASF and its affiliated societies (except for tourist caves and perhaps those under threat of destruction) so CCC intends to restrict sales of this guide (as with its others) to 'members of the Australian Speleological Federation and like bodies who are concerned about the care and conservation of caves and their scientific study' (presumably this includes ACKMA and academics but it may be a difficult policy to enforce). If you send your money for a copy don't forget to specify your affiliation.

While not normally a fan of landscape publications (i.e. bound along the short side — though I'm not sure of the longevity of the 'perfect binding' — glue — used in this case), I can see this format does have its advantages for a publication of this type, permitting a panel of text beside each cave map. It would also work very well on a computer screen, if a digital version were to be made available.

This is an excellent guide to the lava caves of Undara and the other flows of the McBride Province — and a credit to the editor, cartographer, others who contributed and CCC generally.

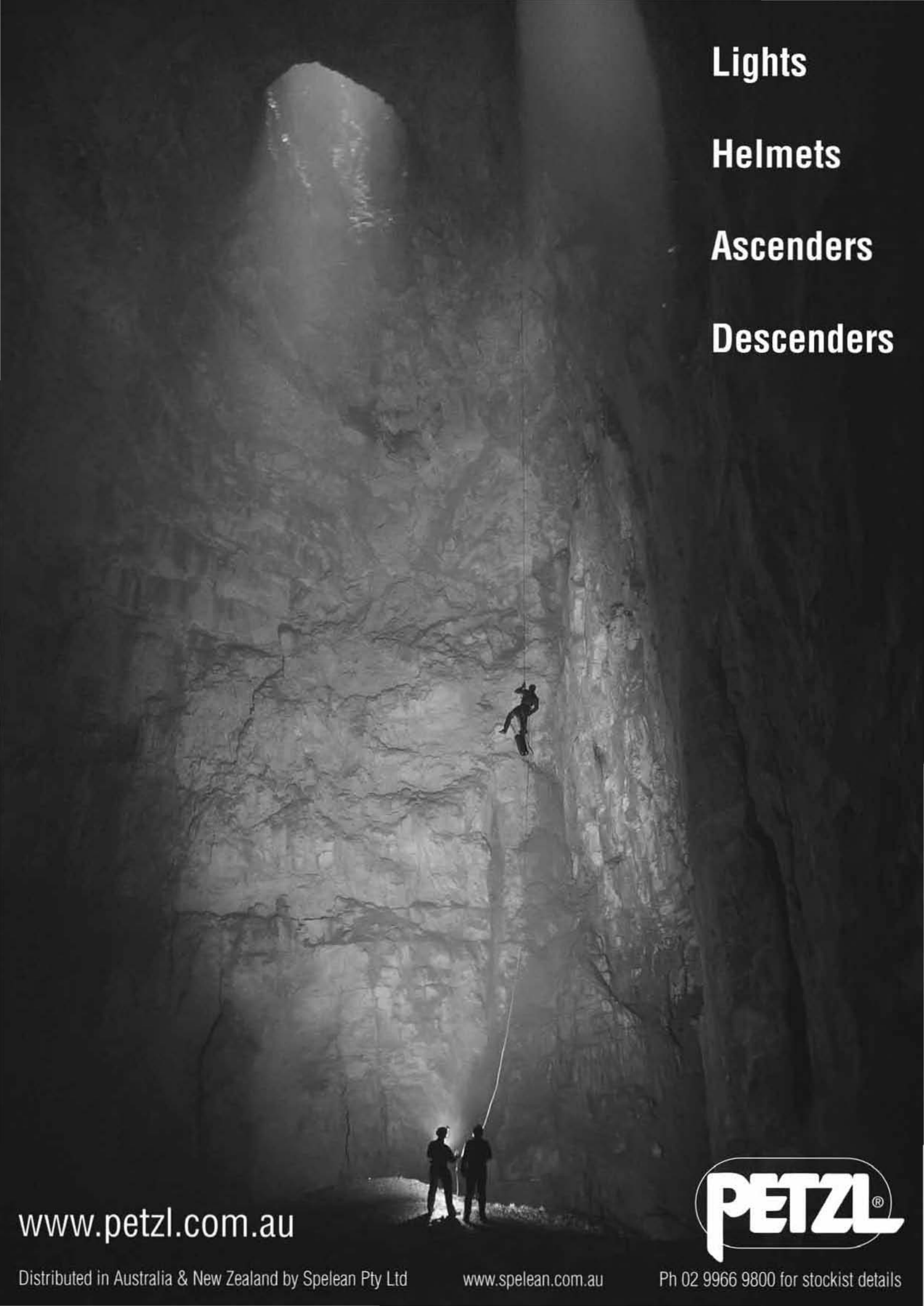
You know you're a caver when …

Stephen Bunton
STC

THANKS to Sue White (See *Caves Australia* 183:12) for the impetus and challenge of turning my typing fingers to this little project.

You know you are a caver when:

- You always carry a head torch in your hand luggage.
- Customs officials have no idea what any of "this stuff" does.
- You have destroyed numerous washing machines cleaning your gear. Likewise the neighbours have no idea what all "this stuff" is when it's drying on the line! (You also get a good crop of mushrooms where you rinse your caving gear.)
- You don't mind gardening, it gives you digging practice but you don't own any of the proper implements and just use the trowel or trenching tool that you use for cave excavation.
- You don't bother to turn the light on to go to bathroom in the middle of the night.
- Your partner wouldn't let you call your children Crystal, Jewel or Hades.
- You can't help but watch water flow down a drain and you want to tag and survey council roadworks or ditches, especially those with drains and pipes.
- You have numbered all the holes and rips in your trogsuit. When the bum of your trogsuit wears out you do a through-trip!
- You have squeezed through coathangers, toilet seats, under chairs and around tables as a form of inebriated entertainment.
- You have drowned, dropped and covered a number of cameras in mud. None of them survived but you keep them anyway.
- You have fully explored underneath your house — you will survey it one day when you get around to it.
- You navigate by visual cues rather than maps and don't have any trouble with getting lost in labyrinthine shopping malls. You see challenges like these as caving practical tests and you usually pass with flying colours.
- You don't wash your hands before eating lunch, in fact you prefer your sandwiches with a bit of grit and grime.
- You go on tours of show caves and cringe at the commentary. You bite your tongue and don't correct them unless you are a real poser.
- You do know that the 'tites come down and the 'mites go up and so do your kids because you've bored them to death with a scientific explanation for everything!
- You tried to introduce the rest of the family to the sport but they have since lost interest and often suggest that if you are going to be away for the whole day perhaps you would be better playing golf.
- If you did play golf you would tag all the holes, but not necessarily in the order 1-18.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