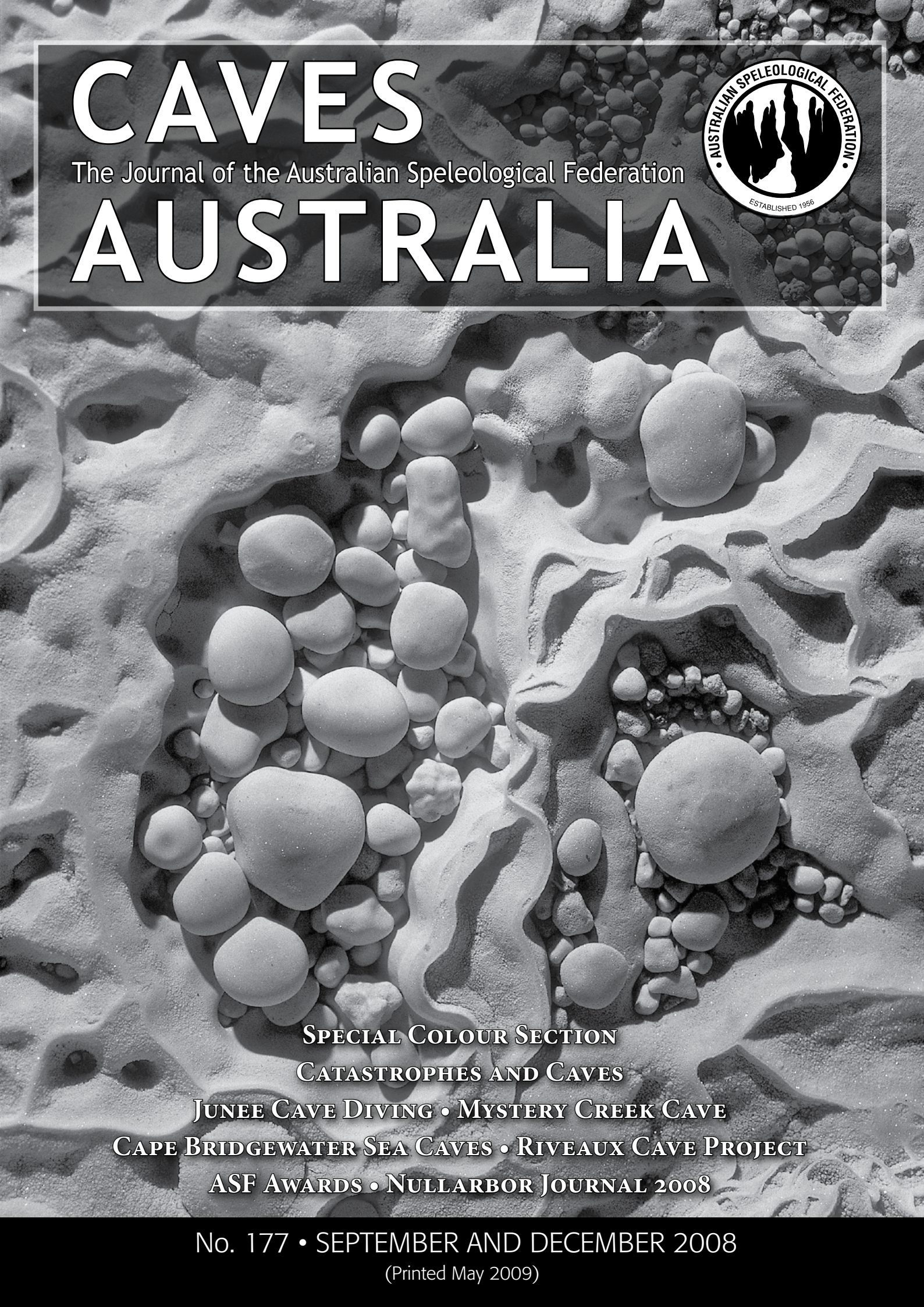
CAVES AUSTRALIA

The Journal of the Australian Speleological Federation



Special Colour Section

Catastrophes and Caves

Junee Cave Diving • Mystery Creek Cave

Cape Bridgewater Sea Caves • Riveaux Cave Project

ASF Awards • Nullarbor Journal 2008

No. 177 • SEPTEMBER AND DECEMBER 2008

(Printed May 2009)

COMING EVENTS

In particular, this list will cover events of special interest to cavers and others seriously interested in caves and karst. This list is just that: if you are interested in any listed events, Elery Hamilton-Smith: elery@alphalink.com.au or Nicholas White, (Chair of the International Commission) nicholaswhite@netspace.net.au may have further information. The relevant websites also are useful. Details of other regional/ local overseas events can be found on the UIS/IUS website http://www.uis-speleo.org/. Although there are several things planned for 2010 the detailed dates are not available as yet.

2009

July 7—12

ANZ IAG International Association of Geomorphologists Conference, Melbourne. A karst session and some karst field trips will be run during this conference. For details contact Susan White Email: susanqwhite@netspace.net.au www.anzgg.org/melbourne2009.htm

July 19—26

15th International Congress of Speleology, Texas, USA organised by the NSS. For the latest details see http://www.ics2009.us/
A number of Australians plan to attend.

September 23—26

Sustainability of the Karst Environment—Dinaric Karst and other Karst Regions, Plitvice Lakes, Croatia. Organised by the Centre for Karst, Croatia. The basic objective of the conference is to apply an interdisciplinary approach to scientifically assess the issues of sustainable development of all forms of karst. The emphasis will be placed on Dinaric karst, though other karst areas worldwide will not be neglected. About ten of the world's top experts will be invited to give plenary talks.
Details from Ognjen Bonacci Email: obonacci@gradst.hr
or
Jadranka Pejnović Email: centar.za.krs@gs.t-com.hr
For the latest details see http://www.cek.hr/

October 2009

NSW Speleo Council Meeting. Details to be advised, contact denis.marsh@hotmail.com

Further ahead

August 2010

Exact dates to be advised. 15th International Symposium on Vulcanospeleology, Undara (Qld) and western Victoria. Contact Greg Middleton at ozspeleo@bigpond.net.au

Easter 2011

April—exact dates to be advised. 28th Biennial ASF Conference, Chillagoe, north Queensland.

CAVES AUSTRALIA

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Notify us immediately of any address changes to ensure delivery of your *Caves Australia.*

As no issues of **Caves Australia** *were able to be published in 2007, the publication dates will include the actual dates the issue is produced.*

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ASF

Contents

Cover: Cave pearls in Spirit Cave, Kimberley, WA. Photo by Reto Zollinger.

ASF Executive

From the Editor

GUYS AND GALS, thanks for your great contributions as we have another exciting double issue for you, with COLOUR.

This issue, you will find discussions on various environmental aspects, including a discussion on what is a 'catastrophe', a review of the latest guide to Australian Bats and a history of the stakeholder interactions of the Hustling Creek Karst area in Tasmania.

Enjoy reading about vertical cave exploration (joining the old and the new at Mystery Creek), formation of sea caves, cave diving, Nullarbor update, the first electrically-lit cave in Tasmania, 'Konference' awards and more … Enjoy the issue.

Regards, Ed.

WANTED
ARTICLES FOR CAVES AUSTRALIA!

Whether caving, cave diving or general exploration, *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.

President's Report

LOOKING BACK at the last report I wrote, I saw an alarming photo accompanying it that took me back to a time when I was caving at Chillagoe.

Depicted there was a nice frog apparently about to be my next meal. That was 27 years ago and let me assure you the frog probably died of old age and not fright and it certainly did not form part of any meal. The wonders of photography!

Many cavers have varied and remarkable lives, and so tales and legends are constructed around the post caving trip debrief and communal fire.

The ASF Conference in Sale in January had many highlights for all attendees.

It was a time of celebration and challenge, a collective of clubs, committees and commissions, communication and collaborations, characters and comrades.

It was a cohabitation of Cavers planning and reporting Caving in Australia and beyond.

It is the planning and trips that occur immediately after and in the future that are hatched at conferences.

It is the fresh ideas that are injected by the reporting commissioners and groups.

It is people volunteering at all levels of a large diverse Federation.

It is about individuals with a sustained passion for caving.

This year has seen the disbanding of one club and individuals withdrawing from the business side of things but not necessarily from caving.

We see Elery Hamilton-Smith standing down as chair of the WCPA Caves and Karst Task Force and this role and the long and important work done by Elery being continued with the energy of Jay Anderson.

There is always a "phoenix reborn" within the caving fraternity as the baton is handed over at different times of a long race to build on and support the groundwork previously done to conserve, preserve and explore our underground heritage.

There are many reasons to celebrate, and the recipients of the various Awards as notified at the Conference should feel proud to receive the recognition of their tireless work by the consolidated support of their peers and clubs who nominated them.

Again, it is inspirational to see the humble delight that individuals display when an award is presented to them, and the handshake that seals the transaction from the Federation.

This year has seen a consolidation and commitment to the developing identity of the Federation with the symbol being displayed more widely and remaining as a symbol of reliable excellence in speleology and documentation.

The Federation is becoming more "user friendly" by listening and moving forward with ideas and entrepreneurial drive to be marketable and meet the needs internally and externally.

We will continue to build on the visions of our founders and move forward to provide the nurture of new clubs and members.

—Stan Flavel, President

E-SPELEO BULLETIN

A publication of the Australian Speleological Federation

SHARING CAVING NEWS AND EVENTS

■ In a hurry and need a quick update on topical ASF issues?
■ Got a club event or milestone you wish to share?
■ Want others to know about your interests in national and international events or conferences?
■ Know where to get a good deal on equipment?

Then get online and tell us!

***E-Speleo* is circulated bi-monthly by email only, so make sure your details are up to date with ASF via your club.**
ASF *E-Speleo Bulletin* Editor: Ross Anderson espeleo@caves.org.au
Article cut-off 25th every other month

Australian Bats
by Sue Churchill

Second Edition, Jacana Books, Allen and Unwin 2008; 255 pages, colour photographs, RRP $45.00.

Review by Nicholas White

CAVERS have many reasons to be fascinated by bats and they rightly respect them. We are familiar with information that some bats eat half their bodyweight of insects in a night and the reputation of some bats being disease carrying. Some 30 of 75 Australian bat species use caves for roosting in and it depends where in Australia one is caving, on which species are likely to be roosting in particular caves.

Sue Churchill has revised her 1988 book in this second edition. The first edition has been unobtainable for some time and this new edition is much needed.

The book is divided into two parts; the first describes bats, where they live, their reproduction, echolocation, diet and feeding strategies, the importance of caves to their conservation, bats and viral diseases, how to catch bats and how they are measured.

The second part of the book describes each species. There are identification keys that enable a breakdown, first to family and then to genus and species within a family. Each species description includes the distribution with an Australian map, a description of the colour and predominant features of the species, its roosting and habitat preferences as well as its diet and foraging strategies. Reproduction is also covered, as is the predominant frequencies of their echolocation calls with a graph showing frequency versus time. Each description is accompanied by a high quality colour photograph of the species.

There has been significant new research establishing valid criteria for distinguishing some species from others and for assigning new names where appropriate.

There have been a number of changes in names of familiar cave species. It has been established that the Large-footed myotis, *Myotis adversus,* is not the same as the Indonesian *M. adversus* and has now

been renamed *Myotis macropus*. Similarly, the Common bentwing bat, *Miniopterus schreibersii,* has been shown not to be the same species as the *M. schreibersii* of Europe and has been renamed *M. orianae.* This in turn has been divided into three subspecies but these may be elevated to separate species with research currently in progress. The first of these subspecies is the Eastern bentwing bat, *M. orianae oceanensis,* which is the cave dwelling bat extending up the east coast of Australia.

The second is the Southern bentwing bat, *M. orianae bassanii,* which ranges from the Otways in southern Victoria to the lower southeast of South Australia. Its maternity sites are only two caves, one near Warnambool and the Bat Cave at Naracoorte. The Northern bentwing bat, *M. oriane orianae* ranges from Arnhem Land to the Kimberley.

Another of the cave dwelling bats to undergo renaming is *Eptesicus pumilis* which has been reassigned to the genus name of *Vespadelus* and what was one species is now nine species, only some of which roost in caves. Modern research differentiating between populations is immensely important to establishing valid management directions to protect biodiversity.

The Southern bentwing bat is now classified as endangered under Federal legislation *(Environment Protection and Biodiversity Conservation Act 1999)*. There is an urgent need to validate the species status of this bat as well as to research its habitat requirements and protection of its cave roosting sites throughout its range.

The book records the disappearance of the ghost bat from Central Australia in a fascinating account of the author being allowed to visit the sites despite their being "men's" sacred sites. There was evidence of ghost bat use of the sites and the elders obviously had memory of them being present but there was nothing to indicate the bats were currently present in Central Australia. This disappearance in our lifetime has not been researched or explained. The Christmas Island Pipistrelle is another species to undergo dramatic decline in recorded numbers. This information is cited in the book.

Recently the Federal Minister for the Environment declined to capture some of the remaining population to start a captive breeding population, citing insufficient knowledge upon which to interfere with the remaining individuals. These are estimated to number just 20—down dramatically from 10,000 in the mid-1980s. Only more comprehensive and modern research on bats will remedy information deficiencies on the status of the Australian bat species.

Without such research some species may become extinct without our knowledge. It is books such as the present one which provide the impetus for further study of this least studied group of Australian mammals.

Bats have had a bad press by associa-

tion with emergent viral diseases. Hendra virus, which killed several animal and veterinary attendants, was associated with sick horses which had caught the virus while sheltering under trees used by flying foxes. At Menangle in NSW several people were infected with an influenza-like illness in a piggery in which the pigs had caught the disease from flying foxes. Both Hendra and Menangle viruses are paramyxoviruses related to the measles virus.

Flying foxes and the yellow-bellied sheathtail bat have now been associated in one instance each of human deaths from a lyssavirus, related to rabiesvirus. Neither of these species inhabits caves but this does not preclude cave dwelling species being a source of lyssavirus infection in the future. No mention is made in the book of cave maternity sites being a source of human respiratory and lung infection with the histoplasma fungus.

This book is quite comprehensive in its coverage of Australian bats but it is quite understated on the shortcomings of the current knowledge of bat populations and what might be the causes of population decline. In the absence of catching each bat of interest to be able to measure, weigh and describe a bat, one is reliant on guides such as this to identify each one found or sophisticated sound equipment to record their echolocation calls.

This certainly is the most comprehensive book yet published on Australian bats and this second edition fills a very real need. I recommend it for club libraries and individuals with an interest in bats will find it a worthwhile addition to personal libraries.

Cave Words – Efflux

Stephen Bunton
STC

WE USE words for communication; to convey our understanding. As our understanding of a situation increases, our language evolves.

Sometimes we invent new words and sometimes we import words to fill gaps in knowledge; the word "hassle" is a great word, which has persisted because it filled a vacant niche in our language or it was a polite substitute for the Australian equivalent.

Unfortunately we sometimes import words which have the wrong meaning and unfortunately they persist. The word efflux, meaning an outlflow cave, is one example.

In Australia it seemed there was no appropriate word to describe a place where water flowed from the ground. The word spring conjures up an idyllic view of nice, clear water flowing freely as never really happens on this dry continent.

The word efflux came to prominence in our vernacular when Sydney Speleological Society published its book *Bungonia Caves* (Ellis et al. 1972), which was effectively Australia's first caving guidebook. The water that infiltrates the Bungonia plateau, flowed from the ground, not from bedrock but from a soil slope on the side of Bungonia Gorge. Over a period of years SSS excavated this, until they found the cave from which the water emerged.

This was a real shit-fight (the Australian word for hassle!) and the connotations of yukky, muddy water were encapsulated in the name efflux, meaning a place where there was an outflow of effluent.

Not many caves in Australia spew forth effluent and so it is wrong to call them effluxes. The correct term is a resurgence. One example of a cave which could be described as an efflux however, because it has issued a flow of effluent, is Moons Cave at Buchan, Victoria (White and Davey 1977).

CARTOON BY CHRIS SENIOR

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Catastrophes and Caves

Nicholas White
Conservation Commission

Recently, we have had what have been termed catastrophic bushfires in Victoria. Before discussing these fires and their effects on caves I want to consider other catastrophic events that might affect caves. Catastrophes can be defined as sudden events that may occur from human or natural hazards that negatively affect society or the environment (Wikipedia, 2009).

During the VSA trip to the Nullarbor in 2002, we discovered caves with bones of extinct megafauna and complete skeletal remains of the marsupial lion, *Thylacoleo carnifex*.

These discoveries have given scientists years of work and lots of information on this and various new and known species found in the caves. Some of the specimens have proved very old and a method for dating speleothems has been further developed to cover the time range needed. This is the uranium-lead series which shows that calcite deposits in some caves on the Nullarbor may be as much as 8 million years old. At least one of the caves found on the original trip had only very recently re-opened to the surface as there was no, or very little, contemporary fauna present in the cave. My supposition is that the re-opening of the entrance may have been due to rabbit or sheep grazing which resulted in erosion of the plug which had blocked the entrance for perhaps hundreds of thousands of years. Was this a catastrophe?

When we discover a new cave we alter it just by exploring it. The changes may be from introduced materials (food) or damage due to trampling of floor sediments that are the substrate for whole ecosystems of dependent invertebrates, bacteria and fungi. The exploration may damage or muddy speleothems.

The ASF has developed a Code of Ethics and a Minimum Impact Caving Code to regulate our own caving and minimise damage, but is this adequate? Are we measuring up to our own ideals and standards?

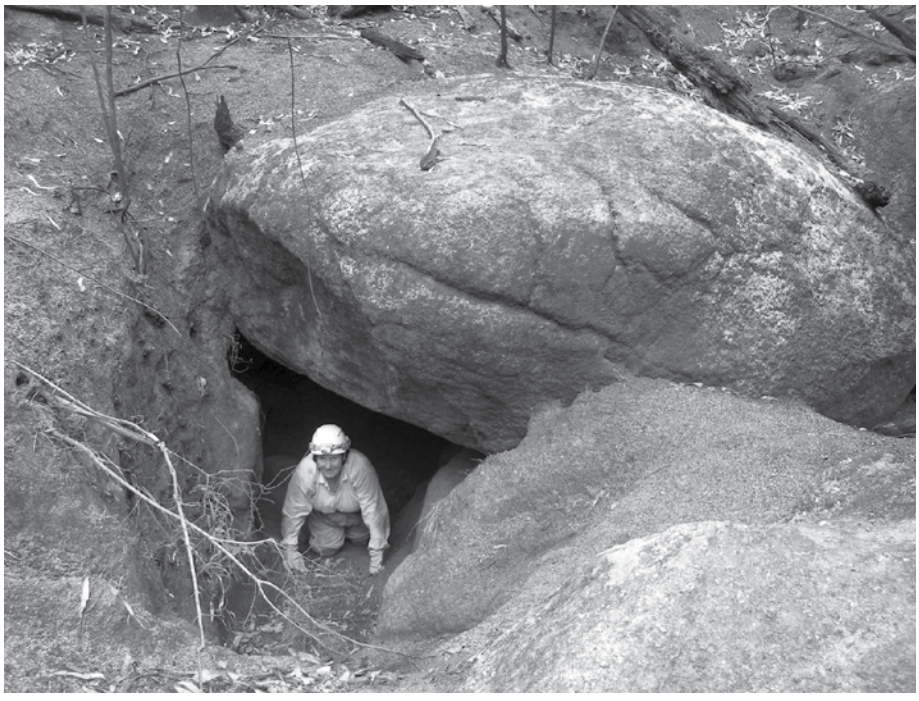
These changes are not catastrophic but they are significant changes. We should be careful about overuse of words such as this or they lose their value.

The development of a show cave is probably the single most dramatic change that can happen to a cave but if the original concept was to show the contents, such as speleothems, to visitors then it probably succeeded. However, there were probably a number of cave values which were neglected in the development and the effects on these values might be regarded as catastrophic! However, most of us would regard the development of a new tourist cave as warranted rather than catastrophic.

The Skipton Cave (H-1, Mt Widderin Cave) is rightly famous as the type locality from which some unusual phosphate minerals were first described. These minerals developed from the complex interactions of the lava breakdown products and bat guano deposits. The bat colony died out at some stage shortly after the cave roof was breached with a drill hole to put a pipe down to the lake in one portion of the cave, some time before 1900.

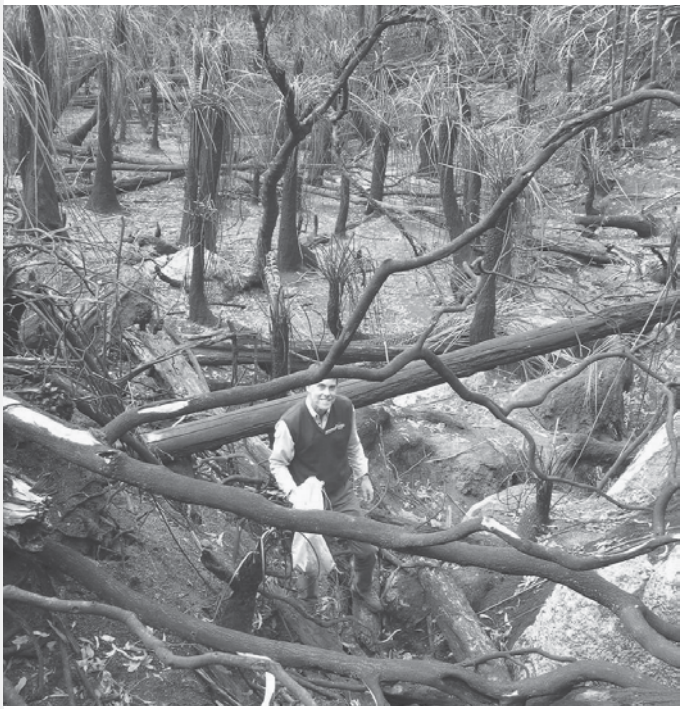
Whether the abandonment of the cave by the bats was due to changed air circulation or for some other man-induced change is not known. What is certain is the maternity site is no longer and the bat in question is now endangered (White, 2008). However, was the demise of Skipton Cave as a bat maternity cave a catastrophe? Was it sudden or was it gradual?

The campaign to stop quarrying at Mt Etna was an attempt to prevent the destruction of caves and most importantly the destruction of caves upon which the ghost bat was dependant. The destruction of these caves was catastrophic in all respects.



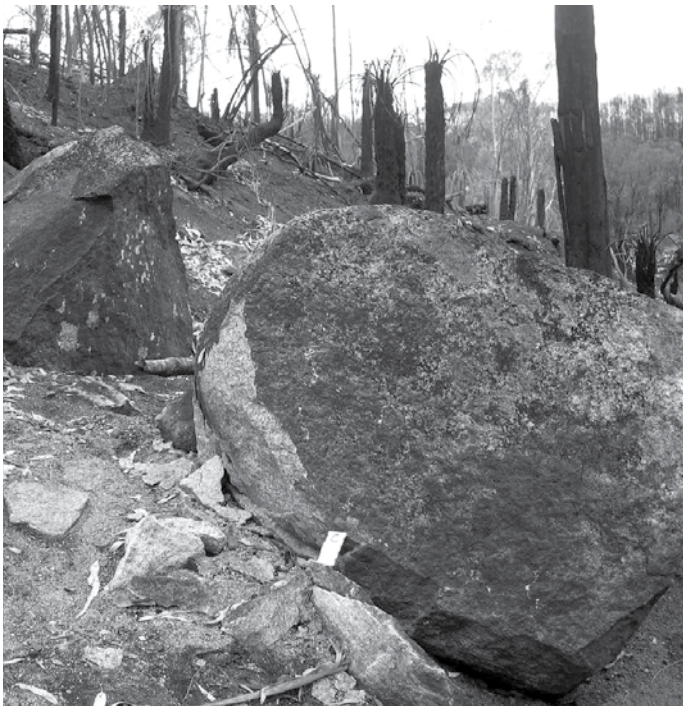
M. PIERCE

Top Entrance, Labertouche Cave, Bunyip State Park.



S. WHITE

Greg Young in burnt forest, Bunyip State Park.



S. WHITE

Spalling granite boulders, Labertouche

Labertouche Cave is a cave with an underground stream which flows between granite boulders (Finlayson, 1981). From the upstream entrance the cave drops down between boulders about 15-20 metres to the streamway. The damp sections leading down to the stream have always had small numbers of glow-worms. Glow-worms occurred along this stream. The cave is situated in wet sclerophyll forest in the Bunyip State Park. It is close to Melbourne and receives a lot of recreational use. It is a quite demanding cave to navigate through and the ill-equipped may also get wet, cold and suffer exposure. There have been a number of rescues of inexperienced visitors from the cave. Despite lots of visitors the glow-worms have always been present near the upstream entrance to the cave. The February 2009 catastrophic bushfires burnt through the whole of the Bunyip State Park. Once the tracks in the park had been cleared and made safe, a number of the members of Parks Victoria's Cave and Karst Advisory Committee visited the cave to establish whether it was likely to fill with sediment if there was a high intensity rainfall event before ground vegetation could bind the soil, whether the glow-worms had survived the fires or were starving. It was Susan White's contention that the coarse granite breakdown sandy soil would not move in significantly large slugs to block the cave. There were 23 visibly glowing worms observed. This compares with a count of 28 in January 2009 (VSA member Ian (Chalky) Thomas pers. comm.). In mid-March, when our evaluation trip was done, the vegetation was just starting to show the initial signs of recovery—epicormic shoots on eucalypt trunks, bracken sprouting and tree ferns growing new fronds. There were midges hatching in the stream which was vitally important as these form the diet of the glow-worms. In all probability the glow-worms at most of Dr Claire Baker's forest study sites were destroyed. Thus these surviving glow-worms in the cave are now a refugial population from which spread back into the forest streamway may occur with time. The fires were catastrophic for the forest but as far as one can tell the cave and its biota have survived and it is not so for the cave.

M. JAMES

Good regenerating fern detail, Bunyip State Park.

During bushfires as well as the forest burning, the heat intensity is such that spalling and cracking of rock occurs. This occurred to the surface limestone at Limestone Creek, Victoria during the 2002 bushfires. It was also evident on the surface granite boulders at Labertouche Cave. This subject of the surface effects of fires on karst was described for Jenolan (Holland, 1994). The black banding of calcite in Jillabenan Cave provides a record of past bushfires. At Labertouche Cave the spalling of the granite boulders observed was on the surface exposed rock and there was no evidence of spalling inside the cave. This is evidence of events which are catastrophic for the surface but not for the cave.

Unexpected events are often dressed up in colourful language. It is easy to use the word unique or pristine and both get overused in the context of describing caves. In the same vein, catastrophe is often overused and needs careful defining to be meaningful.

In the instance of the Bunyip State Forest fire in February 2009, the fire was catastrophic for the forest, but the glow-worms survived in Labertouche Cave and this refugial population will probably spread to the rainforest gully outside given time. The surface catastrophe will probably be mitigated by the cave.

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Muck Raising, Hair Raising, Fund Raising

Bob Cockerill
STC

Following the untimely death of Jeff Butt, Southern Tasmanian Caverneers [STC] member (and previously a member of Southern Caving Society [SCS]), I had bestowed upon me many piles of unwanted and unknown cave related 'stuff'. Amongst the piles were a few gems, one being a box of black and white prints from an early SCS era. The ones that caught my attention appeared more agricultural than speleological so I chased up some likely SCS bods at the STC 60th anniversary dinner. Bob Cockerill was willing and able to assist and penned the following article, originally intended for the **Speleo Spiel.** ***—Alan Jackson.***

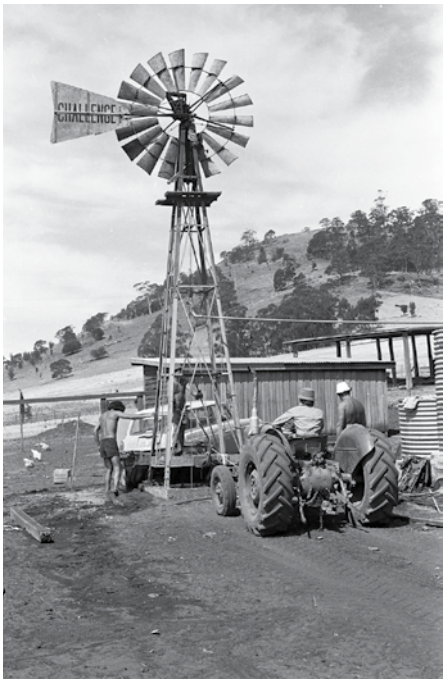
OUR INDUSTRIOUS, illustrative and enthusiastic editor, Alan Jackson, recently challenged me to record my recollections of some archival photographic records and excerpts from *Southern Caver* (Vol.4, no.3, p.21 and vol. 4, no. 4, p.8) of a Southern Caving Society money raising activity, (1972-73). Here followeth my response.

SCS had purposely kept subs and fees low for the benefit of younger members, but we eventually realised that bottle drives were not particularly $$$ productive. We had built our own ladders and they were OK, but some other gear and the rope stock needed replacements and expansion so - "some serious capital was required."

Our then President, John McCormack, (an imposing man, 6 foot 4, good caver, rally driver, adrenalin junky) negotiated our services towards clearing and cleaning a convict-built well on a Richmond-Sorell property that was severely affected by drought. It was getting hotter and there was famine in the land (so what's new?)

After removing the decayed covers from the well top, we saw, a long way down, the murky surface of a couple of feet of water and the challenge below. We checked and assessed the situation from a cable ladder rigged from the windmill frame and found that the top section was masonry lined, but then the lower level was natural sandstone and none too stable.

The water surface was decorated with the bloated carcasses of some very dead possums and we later found the skeletons of some sheep in much worse condition. We had hoped to find some convict related artifacts but all we got was stinking water



ANONYMOUS

A "Challenge"

ANONYMOUS

Bob Cockerill on the tractor with appropriate protective clothing


ANONYMOUS

Stinking mud bath treatment for smelly feet — John Ward and John McCormack


ANONYMOUS

Top floor: daylight, ladies' underwear — John Ward, Graeme Watt and Graham Bailey

and mud and lots of both.

The lift bucket was a modified cream can, big enough to stand in, but bloody heavy when filled with muck. It tenaciously stuck to the mud at the bottom of the shaft and the elasticity of a nylon haulage rope is impressive, particularly if you were on the can when at moment of release the rope suddenly contracted. We constructed a timber "bomb shelter" at the bottom of the shaft which descended with us as we excavated but it was still a not-nice situation.

Eventually, we decided that we had done enough—discretion aids survival—we had removed about 10-15 feet of mud and detritus plus unknown gallons of dirty water and had reached the working limit of our 120 foot haulage rope; knots do not pass through pulleys very easily.

We were not sure that we got to the bottom of the well or the problem (perhaps because we did not do a rain dance), but if the aquifer still worked we had increased the available water capacity by about 6000 gallons.

The owner of the farm and its well was Dick Baker, bossman of Bakers Milk (later Tasmaid, now Pura Milk). After the exercise, in his mudless office at Lenah Valley and after the signing of his generous cheque for our services, his parting remark was "Thanks lads, but you should have asked for more!" We laughed; we had received a substantial amount of money, had had fun, provided a service to someone outside caving, had survived and everybody was happy.


ANONYMOUS

Going down. Next stop: basement — Graeme Watt


ANONYMOUS

I dips me lid to the sponsor — Graeme Watt

Cape Bridgewater Sea Caves

John Webb
Environmental Geoscience, Latrobe University

CAPE BRIDGEWATER (Figs 1, 2), 20 km WSW of Portland in western Victoria, has a spectacular set of large sea caves in the cliffs on its eastern side (Fig. 3). These were first described by Griffiths (1887) and the highest level cave (Fishermans Cave) has been used as a shelter by fisherman for over a century; a boat jetty has been built at its foot.

CAVE GEOLOGY AND FORMATION

The caves have formed in tuffs of the latest Pliocene to mid Pleistocene Cape Bridgewater volcano. This volcano was characterised by surtseyan activity, i.e. eruption in a shallow marine offshore setting, where water flooded into the top of the open vent, causing phreatomagmatic explosions that deposited several small overlapping tuff cones.

The cones consist of steeply dipping (15-20) beds of tuffs, bomb and block beds, deposited largely by pyroclastic falls and surges (Nicholls and Sukhyar 1993). Near-vent hawaiian-type lava fountaining deposited a succession of thin spatter horizons, and the eruptive activity finished with at least ten thin, sheet-like pahoehoe lavas.

This volcano lies along the NNW-trending Bridgewater Fault (Boutakoff 1963). After the eruption, movement along the fault caused the eastern half of the volcano to subside beneath the water of Bridgewater Bay; however, the western half remains intact.

The cliffs which form the eastern side of Cape Bridgewater coincide approximately with the fault, and display a wonderful, complete cross-section of the volcano.

Dipping beds of tuff are intruded by volcanic plugs and capped by flows of basalt, which form the top part of the cliff. To the west, where the flank of the volcano dips down to sea level, it is covered by coastal dune ridges of Pleistocene limestone (Bridgewater Formation).

ELERY HAMILTON-SMITH

Figure 1: The eastern cliffs of Cape Bridgewater

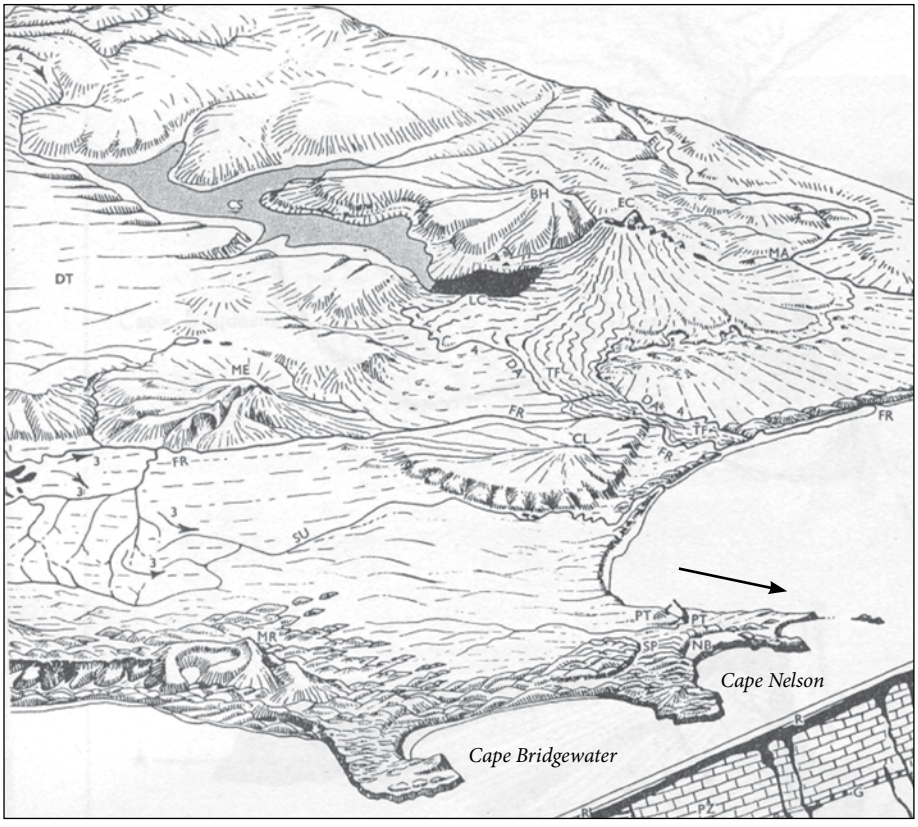


Figure 2: Cape Bridgewater-Cape Nelson coastline (from Boutakoff 1963)

The caves have developed by wave erosion of the tuffs. Wave action along the coast is driven by the strong westerly winds; at Portland the wind blows at more than 30 km/hr for ~15% of the year. Although the eastern side of Cape Bridgewater does not face directly into the winds, it still receives a heavy pounding from waves refracted around the point of the cape.

Three large caves have been eroded into the tuffs on the eastern side of the cape (Fig. 3; Matthews 1985); they are accessible by boat during periods of calm seas, or by difficult climbs or abseils from the cliffs above.

Watery Cave consists largely of a single chamber 30 m long, 30 m wide and 15 m high, mostly in daylight. The cave is often occupied by seals.

Bat Cave (Fig. 4) is a large, semi-daylight through cave over 150 m long and up to 10 m high, with two entrances and a volcanic sand beach at one entrance. A side alcove is occupied by a large bat colony, and contains extensive guano deposits.

Fishermans Cave is a spacious rock shelter, entirely in daylight, approximately 10 m long, 25 m wide and 15 m high. In contrast to the other caves, which have partly submerged entrances, the floor of Fishermans Cave lies about 4 m above sea level. This cave must have formed at a time of higher sea level, probably the last interglacial maximum about 125,000 years ago, when sea level was 4-6 m higher than at present.

The Cape Bridgewater sea caves owe their large size to their geological setting. Subsidence of the eastern side of the volcano exposed a thick sequence of relatively soft, easily eroded tuffs to wave erosion. The capping of stronger basalt over the tuffs often forms the cave roofs, allowing large chambers to be excavated into the tuff without collapsing.

Sea caves are also present on the western side of Cape Bridgewater, eroded into the basalt cliffs of the lava flows from the volcano (Matthews 1985). These are somewhat smaller, although still substantial (up to 35 m long and 20 m wide) and are distinguished from the eastern caves by the presence of extensive calcite speleothems, particularly at the entrances (Fig. 5). The calcite was derived from dissolution of the overlying limestone dune ridges, which are thin or absent over the main Cape Bridgewater volcano to the east.

Cape Nelson, on the eastern side of Bridgewater Bay (Fig. 2), is also a Pleistocene volcano (Boutakoff 1963); it too is bisected by a fault that caused the eastern half to subside, exposing another excellent cross-section through a volcano. Wave erosion of the tuffs has formed two sea caves: Seal Cave ("… seals impede exploration of end passage"; Matthews 1985) and Eruption Point Cave, a large 40 m long daylight chamber which has developed in tuffs in the core of the volcano.

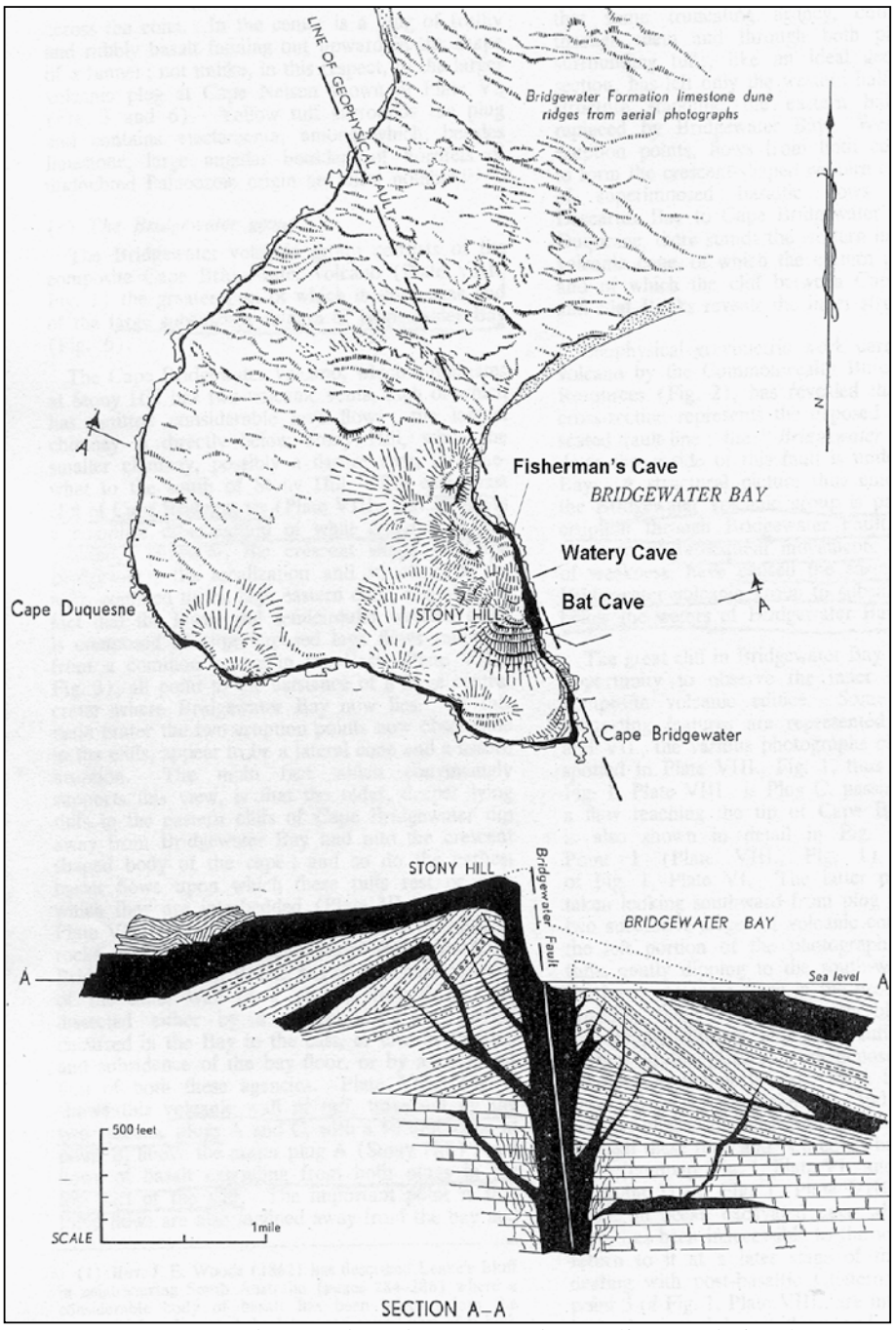


Figure 3: Cape Bridgewater volcano, showing sea cave locations (from Boutakoff 1963)

VALUES AND CONDITION

The Cape Bridgewater sea caves are the largest sea caves in Victoria, and are associated with spectacular geology (complete cross-sections through volcanoes). They demonstrate the power of the Southern Ocean waves to erode large chambers in favourable geological settings. They are also useful indicators of past higher sea level and are biologically significant, as their substantial populations of seals and bats show.

Most of the caves are accessible only by boat during calm seas or by abseiling; as a result they are in very good to pristine condition. All caves lie within the Discovery Bay Coastal Park.

COMPARABLE SITES

Sea caves are common on the high energy cliffed coasts of southern Australia, where the continental shelf is narrow and the tidal range small, so the wave energy is not dissipated (Webb et al. 2003). However, sea caves on these coasts are rarely as large as the Cape Bridgewater examples and often have a more linear morphology. Sea caves are generally excavated along ap-

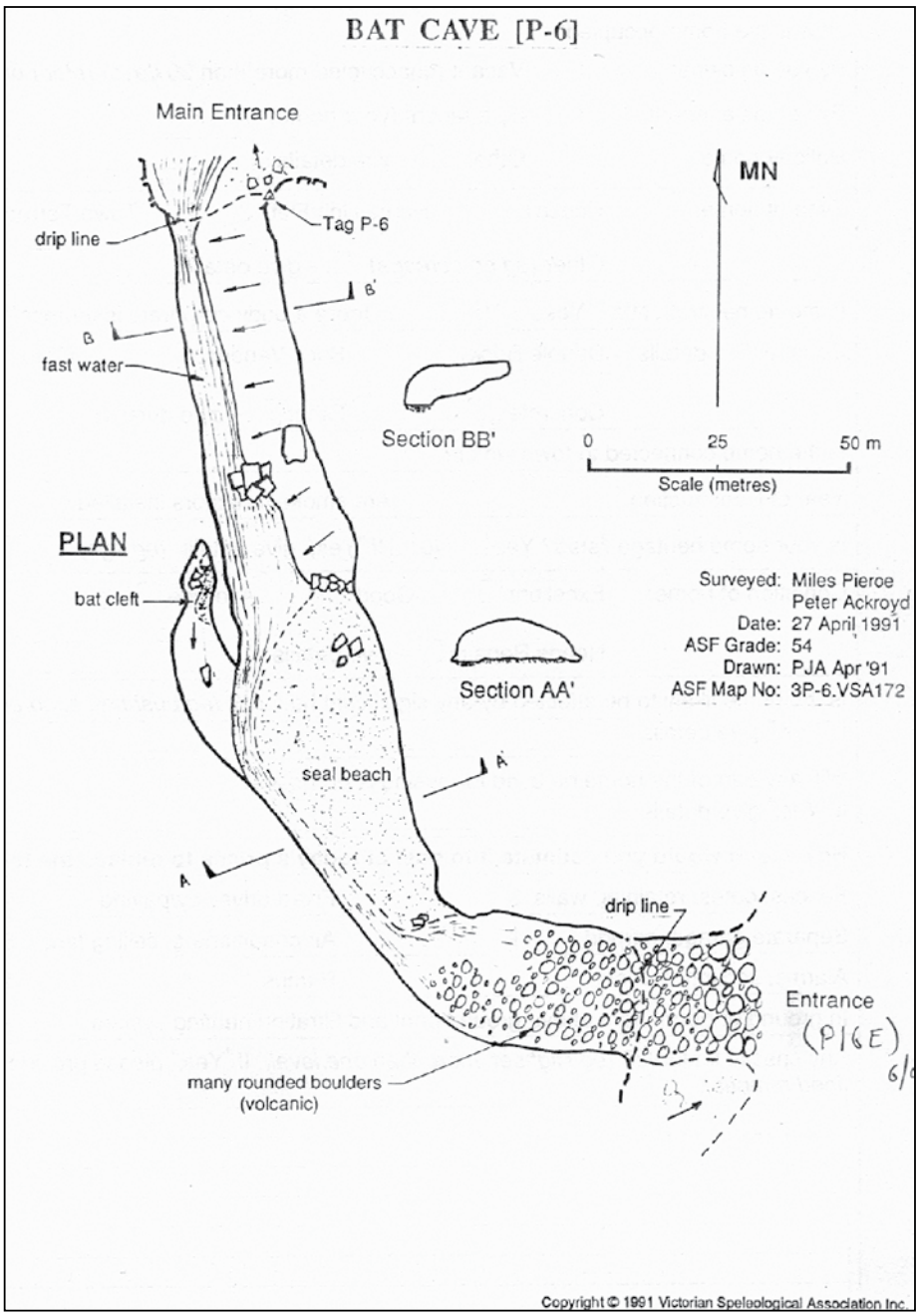


Figure 4: Map of Bat Cave

proximately linear weaknessess in the rock, such as joints, bedding planes, faults or easily weathered beds or intrusions (dykes or sills).

As a result, most sea caves are very linear in plan and extend back into the sea cliff in a more or less straight line. The Cape Bridgewater examples are distinguished by their more irregular outline in plan view; they have formed by the erosion of an entire sequence of softer tuffs and are protected from collapse by the strong basalt roofs.

No other Australian sea caves have formed in similar geology and none are associated with such spectacular geological exposures as the volcano cross-sections at Cape Bridgewater.

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ELERY HAMILTON-SMITH

Figure 5: Sea cave in basalt on the western side of Cape Bridgewater

Junee Cave Diving

Junee-Florentine Karst, Tasmania, January 2009

Richard Harris
CEGSA

Participants: James Arundale (ASF-CGD), Dean Chamberlain (CDAA), John Dalla-Zuanna (CDAA), Richard (Harry) Harris (CEGSA), Grant Pearce (CDAA) and Liz Rogers (CDAA).

BACKGROUND

After a wonderful family tour around the Apple Isle, including a great couple of days visiting the main show caves at Mole Creek (King Solomon and Marakoopa); I (Harry) headed out to Maydena with John Dalla-Zuanna (JDZ). There we met up with the rest of the group who were already settling in at the idyllic cabins at the "Giants Table".

Our main objective was Junee Cave (JF-8), which lies in State Reserve just outside the Mt Field National Park; only a very short drive from our accommodation. The cave is famous for its stunning dry chamber ("For Your Eyes Only"), which lies between the two sumps. In cave diving circles, it is famous for a few other things also: firstly its temperamental conditions (being prone to high flow, flooding, razor sharp suit-eating limestone and frigid water) and secondly, its potential for many kilometres of new passage. When dye tracing in 1973 connected Growling Swallet to Junee Cave, the concept of the Junee Master Cave … a 9+ km connection, was born.

But to temper our enthusiasm, was the knowledge that South Australian divers Tim Payne and David Doolette had on two occasions (2002 and 2004) visited the terminus of Sump 2 and failed to find a way through a breakdown area there *(Speleo Spiel* Issue 349 July-August 2005).

Anyway we decided to try and see for ourselves and regardless of the outcome we wanted to experience the glory of For Your Eyes Only (FYEO).

January 4th 2009: Dive Day 1

First impressions for those in the group that had been to the cave before was that the water level was quite high. From the carpark to the public platform overlooking the cave entrance is about a 10 minute walk through the picturesque rainforest. The first job is to carry all the dive gear up the 100 m streamway inside the cave to the beginning of the first sump. The 7-degree water necessitates the use of drysuits for any such activity but one soon warms up whilst battling against the flow.

RICHARD HARRIS

The participants: L-R Richard Harris, Grant Pearce, Jim Arundale, Liz Rogers, Dean Chamberlain, John Dalla-Zuanna.

On arriving at the setup area by Sump 1, we were somewhat surprised to see a diver's gear neatly laid out on the "beach". The lack of a car in the carpark saved us undue worry but for a fleeting moment we wondered what might have happened to the owner!

We quickly surmised it belonged to Dave Apperley, a Sydney based cave diver who said he may be in the area. It seems he had started diving but retreated for a few days once the water levels started to rise.

During the course of our stay Dave came and went and in fact saved us a great deal of effort by repairing a lot of line in the majority of the second sump before we dived there.

Although several of the group planned to use rebreathers in the cave, all except Dean performed the initial first sump dive on open circuit.

RICHARD HARRIS

Liz prepares tanks at Maydena

The thick line laid in the first sump is still in a good state of repair except for a few belays, which had broken or come loose (these were repaired). In order to protect the line from the intermittent high flow, it has been laid to guard against rubbing on the sharp projections. This means it doesn't always pass through the best route for a diver to follow. Several line traps exist as the line passes flatteners especially in the first 50 m of the sump. Visibility varied between zero and 4 m for all our dives (obviously worse on exiting the cave, or following someone else in). In low-viz conditions these line traps can cause some delays during exit especially. Dives through Sump 1 consistently took from 15 to 25 mins depending on whether video was being taken.

Flow was moderate initially but improved as the water levels fell during the trip.

JDZ and Harry dived through the first sump together and then walked to the end of FYEO simply to admire the passage and get a feel for the work involved to bring more gear through. Based on the size of the passage they decided that using backmount Closed Circuit Rebreathers (CCR) would present a challenge in some of the flatteners but they should be passable (as Dean had proven). The rest of the group also came through without incident and everyone enjoyed a relaxing chat in the beautiful chamber.

LIZ ROGERS

Dean Chamberlain and Jim Arundale talk tactics in For Your Eyes Only.

January 5th 2009: Dive Day 2

Water levels had fallen further and the weather was perfect. Everyone dived through Sump 1 and the three divers using backmounted CCR found the sump squeezy but manageable. The group transported the 5 stage cylinders required by JDZ and the author to dive Sump 2, up to the end of FYEO. Photos and video of FYEO were recorded and we all exited again via Sump 1. A small drop in water levels was noted to make a large difference in flow in the streamway of FYEO. Dave Apperley dived Sump 2 and spent considerable time repairing the line down through the deep section at 63 m.

After working on the line he was short of time and unfortunately didn't get to the end. However, this effort certainly paved the way for JDZ and I to dive the sec sump the next day.

Dave reported the flow through deeper restrictions was very high and c difficult to pass.

January 6th 2009: Dive Day 3

Weather holding up, river continues to drop. More video and stills were taken in all areas. JDZ and Harry hauled their rebreathers to the end of FYEO and the group kindly brought the rest of their kit. Sump 1 was becoming pretty familiar and comfortable. Regular sightings of depigmented brown trout were made, as well as white syncarids and shrimps.

JDZ and Harry set off for their second sump dive using the rebreathers. They used a trimix diluent (special gas mix) to limit narcosis and decrease the work of breathing at depth. Each carried two large bailout cylinders and a further cylinder of decompression gas was staged at 20 m.

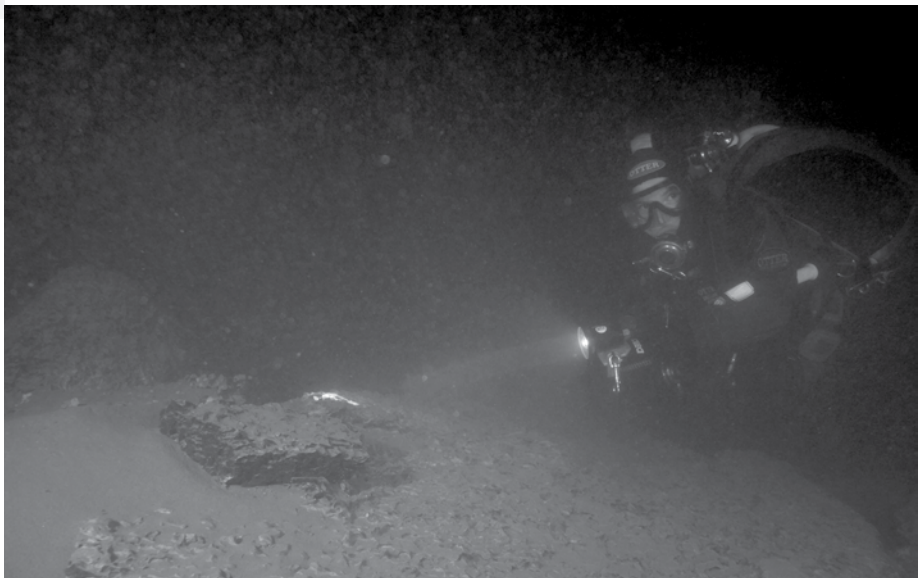
The dive started with a five minute swim over silt dunes at only 5-10 m. The line disappeared into the silt intermittently. Multiple line patches were seen and really the entire line needs replacing at some point with thicker rope. The cave then descended steeply and the restriction known as the "Teeth" was clearly visible at 40 m. This presented only a minor obstacle and was easily passed.

The entire tunnel was a single conduit with no side passages seen in the 4-5 m visibility. At 50 m the tunnel was flat centrally and on the right. On the left side it was scooped out and this was the obvious place to swim. However, Harry found the flow to be very strong here whilst JDZ had a much easier time of it sticking to the middle.

Through 62 m the maximum depth was passed and the cave then ascended to 56m. Dave's line ended here and Harry tied

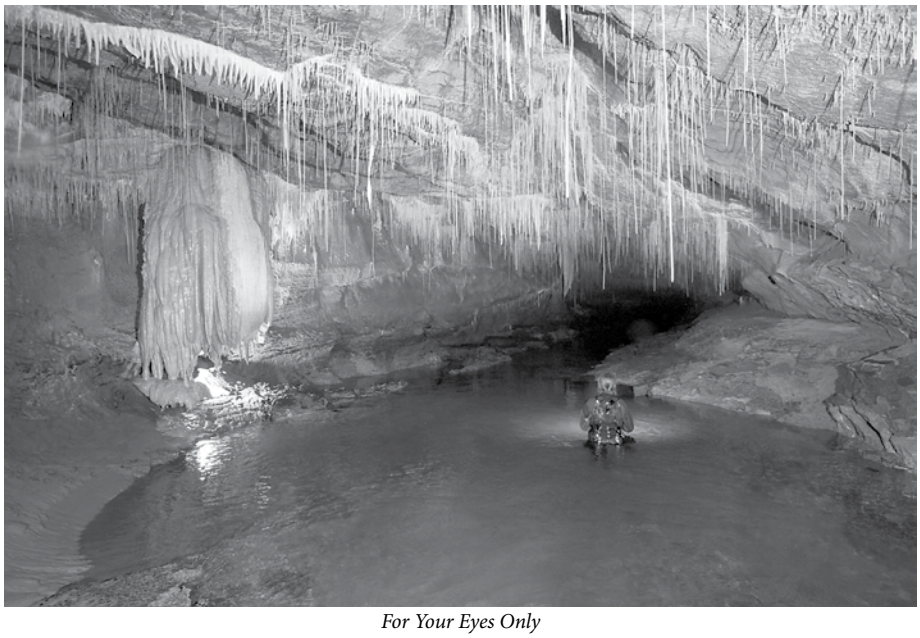
LIZ ROGERS

For Your Eyes Only



DEAN CHAMBERLAIN

Diving Sump 1



DEAN CHAMBERLAIN

For Your Eyes Only

on some 6 mm rope, which he ran to the breakdown area, which only lay another 20-30 m further on. They had arrived at their destination. It took 28 minutes battling the flow to get to this point, much longer than they had hoped but certainly sooner than if they had to repair all that line themselves.

This gave only a few minutes to have a good look at the breakdown area, which was blocking further progress into the cave.

Harry: "My firm impression is that the cave continues beyond the breakdown. There was no sign of another route around the collapse. The breakdown is made of very large boulders with good size chinks between … clear water is tantalisingly glimpsed beyond the rockpile. Some apertures perhaps 30 cm across are the largest gaps … certainly too small for a diver in any configuration to pass. Whilst it might be possible to move some rocks and force a route, this would be very time consuming and not without risk so far from the air chamber, and nearly 1 km from the entrance. So for the time being, the Junee master cave will keep its secret!

Total dive time in sump 2 was 104 very chilly minutes!"

January 7th 2009: Rest Day

Took a day to recover from the bumps and scrapes of carrying gear up those streamways! We had a quick tour of the district to have a look at some of the magnificent local scenery.

Visited Growling Swallet (JF-36); one of the major feeder siphons for Junee. Next, over to Lawrence Rivulet (again following in the footsteps of Dave Apperley who had just dived here and was doing his line repair work for us again!).

Lawrence looked very inviting (apart from the leeches and mossies which were abundant).

January 8th 2009: Dive Day 4

Snow on Mt Field and hail on us! The Junee River was rising and it was time to get our gear out while we could. Approx. 5 hrs total in the cave to bring all the cylinders and other gear out and back to the cars. Red wine and a good feed was the order of the day for cold cave divers!

Thus ended our exploration of the Junee Resurgence. Tassie cave diving has made a big impression on all of us and there are already plans being made to return!

COLOUR PHOTOGRAPHS

More photos in our colour section—see pages 22-23.

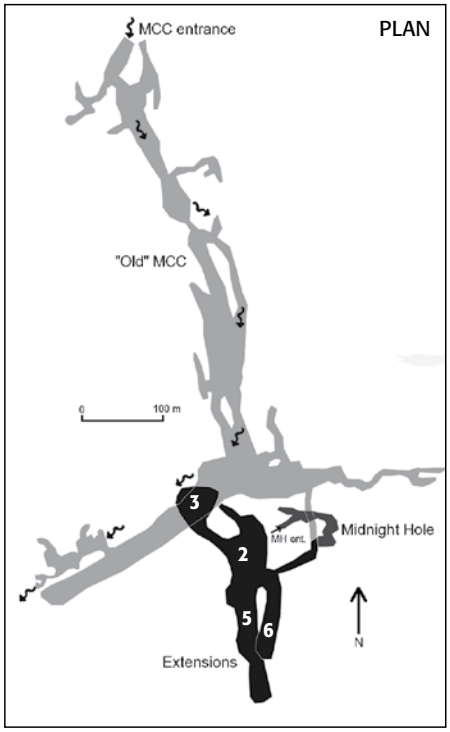
Mystery Creek Cave

An exercise in exploring vertical caves from the bottom up

Alan Jackson
STC

IB-10 MYSTERY CREEK CAVE (MCC), at Ida Bay in southern Tasmania, has been known to Europeans since the 1890s and has progressively yielded new passage over the years since its discovery. Originally known as the "Ida Bay Caves" and then subsequently named "Entrance Cave" in the late 1940s when explored by cavers; the water that sinks at the entrance (Mystery Creek) was long believed to be the same water that comes out of IB-14 Exit Cave, on the southern side of Marble Hill some 2 km away.

A hydrological connection between the two caves was confirmed by Brian Collin and Albert Goede in 1968 with a successful water tracing experiment (*SS*22:1 & Goede 1969). Prior to, and particularly since the proven hydrological link, considerable efforts have been made by local cavers to establish a humanly negotiable connection as well (a carton of long-necks was put up as a reward to the party who found that connection back in the 1950s by Dennis Seymour (*SS*9:1 Editorial). To date all these efforts have failed, however, recent developments in the cave had some STC members clearing space in their fridges in anticipation of those long-necks …



A LEAD IS SPOTTED

On September 4 2004 two seemingly innocuous beginner trips were run simultaneously into the cave – one via IB-11 Midnight Hole and the other via the main IB-10 entrance (*SS*344:3-4). The two parties rendezvoused at Matchbox Squeeze (the narrow passage that joins the vertical shafts of Midnight Hole with the more spacious horizontal passages of MCC).

The parties 'cross-pollinated', creating a 'keen' party and an 'I want to see daylight again as soon as possible' party. The keen party, frothing with enthusiasm, headed up a previously explored, but seldom visited, side passage that heads off on the MCC side of Matchbox Squeeze.

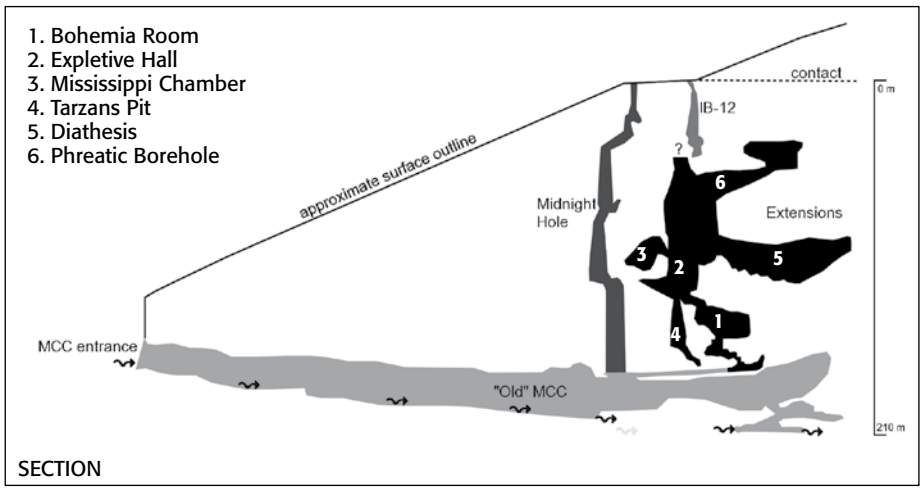
This passage was first discovered by three members (Mick Williams, Dave Rowe and Ken {unknown}) of the Snowy Mountains Speleological Society (SMSS) on December 30th 1986.

While no account of this passage was ever published (to my knowledge), a brief description and memory sketch is recorded in the visitor's book at Arthur Clarke's Francistown residence.

Visitor Book Quotes:

The passage was referred to as "Extensions (!) to Mystery Ck Cave, below Midnite [sic] Hole" and explored via a "tight side squeeze / drafting side crawl" for an estimated 40-45 m via a low cobbled crawl-way to a "narrow 3 m high slot in black limonite crud" eventually leading to a couple of "wet dripping" avens. The first was simply reported as "5-8 m going up (?)", then after a gravel sump in a RHS passage, the terminal aven was shown to be a 7-8 m high "loose rock pipe, promising but unstable in a small solid walled chamber". The passage was surveyed by Jeff Butt and Madphil Rowsell in 2002.

In 2004, the keen party re-found all this, savouring the delights of the nasty passage and the ever-present Ida Bay mud. Gavin Brett was a member of this party and he returned to Hobart with grand plans to drag the scaling pole into the avens located at the far end to climb them, all the while muttering "sometimes you've got to go up to go down. Just look at Avons Aven in Growling Swallet …"



GAVIN BRETT

Alan Jackson surveys the far (narrow) end of Diathesis, a lazy 50 m leg

SCALING THE LEAD

Six weeks later Gavin and Alan Jackson braved the snow and rain and, armed with a few bits of the scaling pole, dragged themselves back up the hideous crawl to the terminal aven *(SS*345:3). This yielded another aven which was also scaled but was choked at the top with dolerite boulders. Disappointed but not disillusioned they back-tracked 30 m or so to a second aven that came in from the side.

This one offered a bit more but it was only a manky rockpile plastered with rank mud. They pushed every nook and cranny they could find and eventually wound their way up and through the breakdown until they popped out into a spacious chamber (later named Bohemia Room by Amy Robertson), encrusted with a variety of decoration including the remnants of ancient crystal pool deposits (fine and spindly crystals, large dogtooth spar crystals, coralloids/popcorns and helictites). Many leads were spotted but none more appealing than returning home. The horrors of the crawl-way leading to this section of cave resulted in its being dubbed Plague and Pestilence by Gavin.

A few days later (thanks to a well placed public holiday) Gavin and Alan returned with Rolan Eberhard in tow *(SS*345:4-5). After some theorising on the origins of the chamber and its decorations they poked around for new ways on. While Rolan gave Alan a boost into one lead it became obvious that Gavin had found a better one. He disappeared out of sight up a nasty climb and his whoops of delight quickly trailed off into the distance.

Alan and Rolan joined him to find an enormous chamber some 30 m in diameter and the roof some 50 m above them. This chamber was to be later named Expletive Hall. A large circular shaft intersected one side of the chamber and dropped a further ~20 m out of sight. With insufficient rope for the drop, focus was transferred to a climb on the opposite side of the chamber. With only a small selection of tapes and chocks and a liberal dose of testosterone-induced competitive spirit, Alan embarked up this very slippery and airy aid-climb. About five metres up a ~7 metre ramp was encountered which provided easy access to a large horizontal passage aligned north-south (but unfortunately heading north—not in the southerly direction required to find Exit Cave). This passage closed down after 30 m or so, but there were ways on. On the way out it was plain to see that this north-south passage continued on the opposite side of Expletive Hall, but due to the steep slope of the floor, it was some 40 m off the floor rather than the more pleasant ~10 m of the northern section. Accessing the southern extension was placed in the 'pipe-dream' category and the aid-climb was descended via a traditional 'natural' abseil. As a result the pitch will be forever known as Nut Burn! (The cavers of old must have worn thicker underpants).

The next trip came round quickly and this time Matt Cracknell joined Alan and Gavin *(SS*345:9-10). The ~20 m shaft off Expletive Hall was dropped (named Tarzans Pit after a bit of a pendulum checking leads!) It led to another ~10 m pitch that needed more rope. Instead, Nut Burn was rechecked and a climb up into a flattener was pushed (the flattener was later surveyed at 7.47 m long and was christened the Boeing Flattener). The flattener opened out into a ~7 m drop into another largish chamber. This chamber was coated with dried mud and other sediments/gravel but was terminal. Gavin christened it Mississippi Chamber in honour of the mud.

A few weeks later, a new party was assembled to tackle the 10 m pitch after Tarzans Pit *(SS*345:10-11). Dave Rasch and Rolan Eberhard tagged along this time. On the way in, at the start of the climb up through the muddy rockfall, a mysterious joke was found. Some fellow STC cavers had heard about the hype and had left a small cave-troll figurine next to a sign suggesting that 'a valid Exit Cave permit was required to proceed past this point'. It was hoped that this would be the case, and after a quick chuckle the party moved on to tackle the pitches. Disappointingly, the new pitch ended at a tight drafting slot which later, upon entry of the survey data, proved to be located directly over the top of the crawl-way back at the start of the extensions! Little else of significance was found on this or a later survey trip and attention soon turned to another cave up in the Junee-Florentine (Tachycardia).

Dave Rasch and Hugh Fitzgerald were later "ratted-out" as the party responsible for the troll joke.

A SECOND LOOK

Once 'Tachy' was out of the way there was a bit more spare time and following encouragement from Madphil Rowsell, Alan decided it was time to 'finish' the MCC resurvey that Jeff Butt and Madphil had initiated in 2002 (the most recent survey was a 1949 TCC map)! They'd done the bulk of the known passage and there were only various little known side passages to complete—or so it was thought!

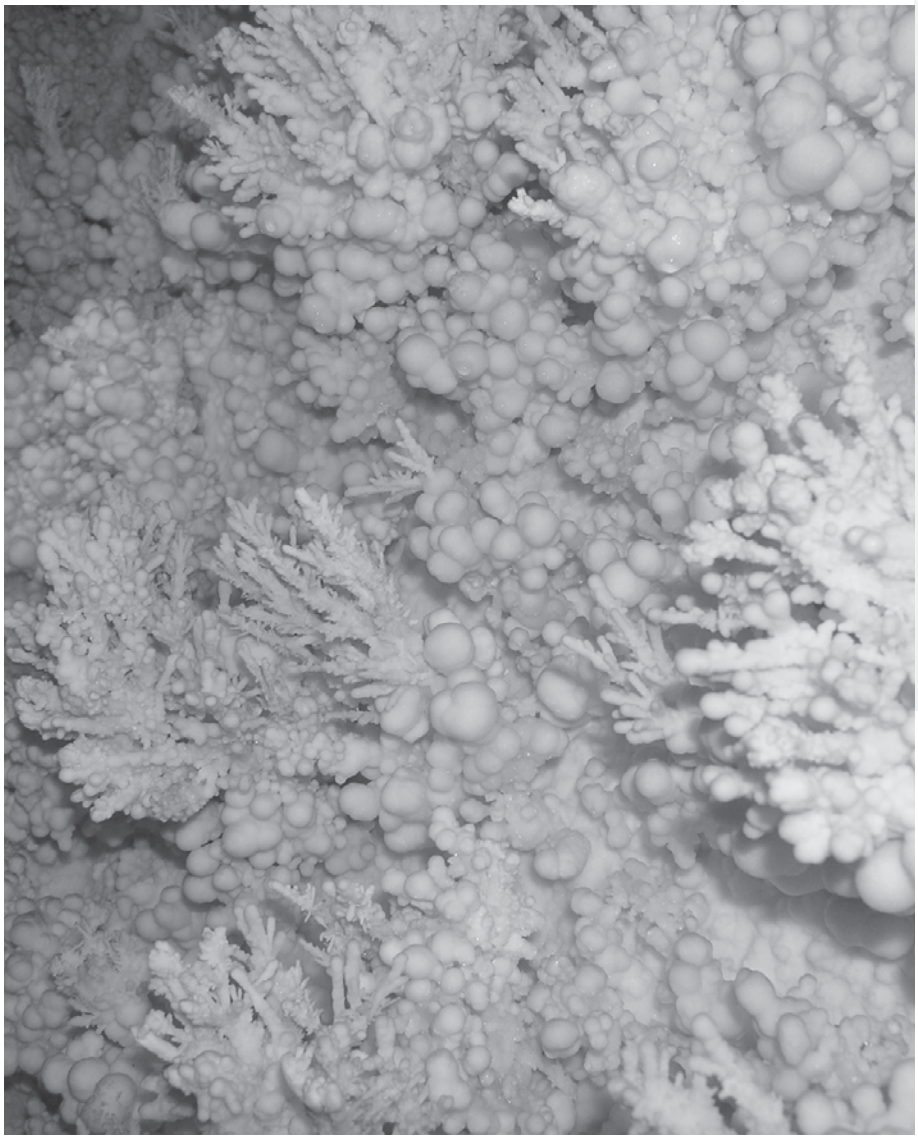
The discovery of another new side passage not far from the entrance by local caver (ex SMSS/TCKRG) Mick Williams in mid-2007, provided the activation energy required to get Alan into the groove and a series of trips followed over the next 12 months to slowly knock each little section off. Eventually the 'final' surveying trip came along. The bookwork from the 2004 extensions had disappeared (the numbers existed electronically but the passage detail was missing). Janine McKinnon and Alan headed in for a relaxing day of touristing and sketching. While the touristing and sketching were both achieved, what also happened was a renewed enthusiasm for that high level lead. Alan had his brand new Scurion bolted to his helmet on this trip and this allowed a better look at the alluring passage up in the roof.

Since first glancing at this passage in 2004 the climbing and traversing skills of the club had improved dramatically, as had the air of invincibility—anything was possible! The 20 m traverse around the top of the 70 m G-Force pitch in JF-338 Lost Pot in 2005 had been a solid first step in learning the art of bolt-traverses. This thing looked like child's play now!

Shortly after, Janine, Alan and Guy Bannink returned to complete the traverse (with a large number of tourists tagging along to admire the previously found sections) (*SS*367:7).

The delights of free-climbing Nut Burn were savoured again and then a broad sloping ledge was followed around the eastern side of Expletive Hall. This ledge made for good going until it intersected a blank arête a few metres short of our goal (which was now looking very alluring from our new vantage point). Luckily a rubble slope led down from the target passage which allowed us to abseil down from the arête (with a few pendula to gain sideways metres) and then scramble up the precarious rubble ridge to the passage proper.

Once all three had negotiated the traverse, a slow negotiation of the huge blocks on the floor followed. The passage was ~15 m wide, ~6-15 m high, and became progressively more encrusted with decoration the further they proceeded. Finding a route through that didn't cause unacceptable damage proved difficult but possible until they reached a drop-off and climb-up about 60 m from the end of the bolt-traverse. The day was getting long and a part of Alan was telling him that it would be wrong to make the MCC-Exit connection without his partner in crime, Gavin, by his side (this whole extension was essentially Gavin's lead after all).

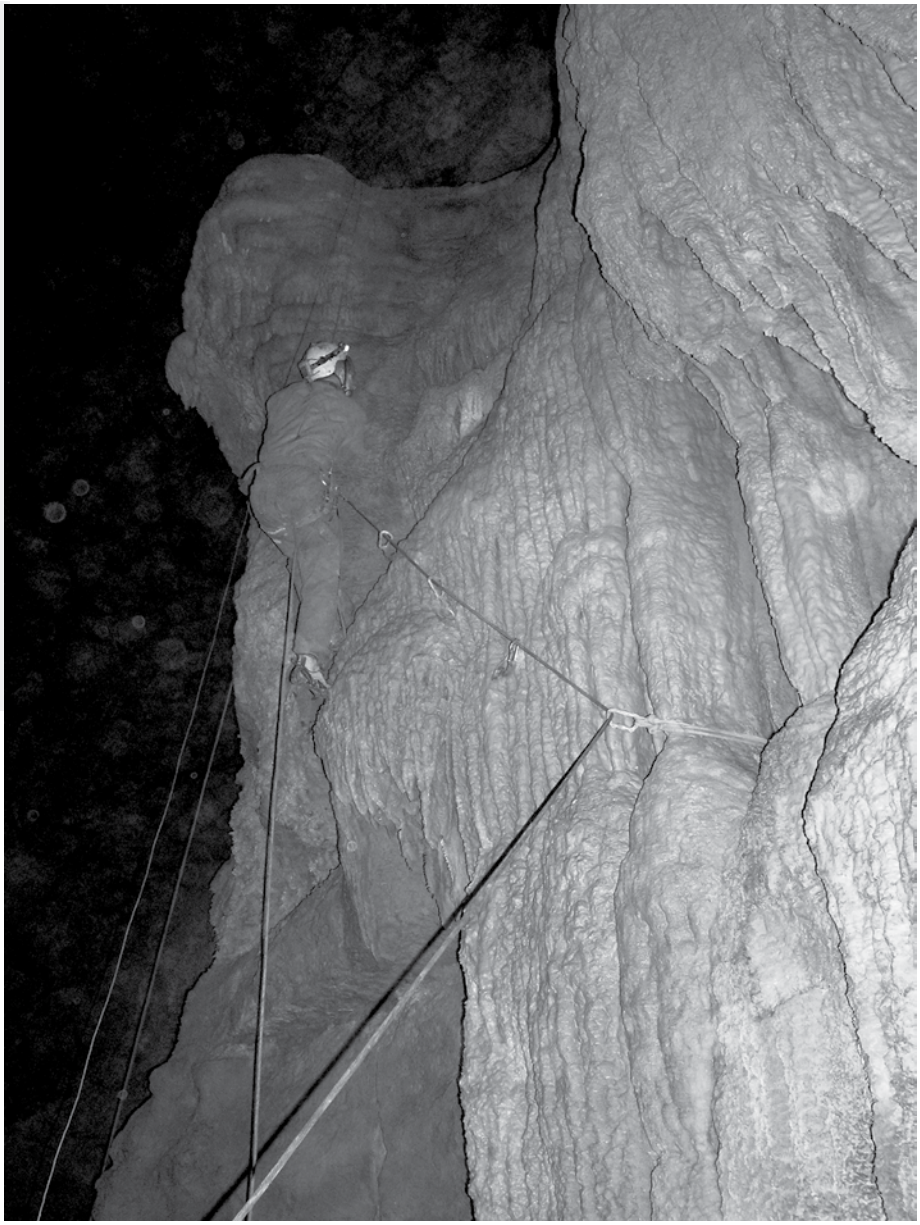


GAVIN BRETT

Coralloids in Diathesis

The next trip, with Gavin in tow, saw exploration completed in this fine passage (*SS*367:7-9). Disappointingly, the mega-passage terminated a further 70 m from the point reached on the previous trip in a huge fault zone (where large chunks of fossiliferous mudstone (the stuff that overlays the limestone on Marble Hill) had found their way in from the surface). To counter our disappointment were some of the finest displays of coralloids ever seen by the party. Rolan Eberhard later commented that "the coralloids in the new passage are simply outstanding, both aesthetically and in terms of geodiversity conservation i.e. best known examples of this feature in Tasmania—their conservation is a real priority." Coralloids and finer, sharper crystals covered almost every surface along the entire length of the new passage, but one section in particular was especially spectacular—some 900 square metres of pure white coralloids up to 200 mm deep covering a wall near the termination of the passage. A route was marked to keep current and future visitors on the chosen path to minimise accidental damage.

On the way out attention was drawn to a large hole up in the ceiling, some 25 m above the floor, which appeared to be phreatic in origin, with some gigantic stalactites guarding its rim. This was actually a hole that had been noticed when Expletive Hall was first discovered. The huge white teeth had boldly reflected our lights back even from over 55 m away (back then we'd thought they were only ~30 m away). Enough said; a plan was hatched.



ALAN JACKSON

Andreas climbing 'Viennese Waltz'

THE ONLY WAY IS UP

The skills of a crack Austrian rock-climber, Andreas Klocker, who had recently joined the club, were engaged for the next trip *(SS*367:10-11). Alan and Gavin managed to convince him that scaling the mud-coated flowstone ribs would be exactly the same as the Organ Pipes on Mt Wellington—really positive rock, great handholds, bomb-proof belays … Austrians, it appeared, are easily fooled.

By now a direct access line had been rigged for the commute between the bottom of Expletive Hall and the new passage (Diathesis). The first pitch of the new climb looked like the hardest bit (vertical, overhanging in spots) with more simple looking ramps with flowstone steps to finish off the climb. A rope was thrown up and over what appeared to be a good notch at the top of the first pitch (which was then tied off to a boulder in the floor. Andreas then prussiked up this line while placing natural protection on dynamic belay as he went (just in case the 'good notch' turned out to be imaginary). The name 'Viennese Waltz' came to mind. About 8 m up he reached the start of the sloping section, placed two bolts and abseiled back down for a rest and a bite to eat. Alan saw this opportunity to steal the lead now that the hard bit was out of the way to race up the easy ramp and hog the glory … he was sadly mistaken. Progress immediately above the bolts was easy and allowed Alan to see that the 'good notch' the rope was nestled behind was in fact a sloping horror show. Eeek, the Viennese waltz could have become a mosh-pit! The next little bit did prove to be easy, with another 4 m of vertical effortlessly gained before it became evident that the 'simple looking ramp' would be sufficiently challenging. While the climbing was simple enough (probably something like a grade 15 out in the climbing world), it was a lead-climb and protection was sparse (and don't forget that a standard 15 is rarely tackled by someone coated in mud). Also sparse were the number of bolts left in our kit—there were three left. Convinced that achieving the top today, regardless of the risk, was a better option than coming back next week and bolting it madly but safely, Alan continued on (and the road traffic authorities wonder why they can't seem to get through to the young male driver demographic …)

The only natural anchor options were minute threads behind the miniature columns formed by the flutes of the flowstone—5 mm wide spaces behind 30 mm diameter flowstone columns. At least there was an abundance of them, with a fiddly tape thread going in every metre. Scratched bloodied fingers were the order of the day. Alan figured that if he slipped then each anchor would at least slow him down a bit as they popped before he loaded the 'bomb-proof' double bolt belay. Gavin, clipped into that same belay, also hoped that it would hold, or that the rope would at least catch a sharp edge and fail, therefore not fully shock-loading his life support! Two metres from the top Alan reached the crux of the second pitch—an awkward ledge that needed to be mantled some 2 m above the previous 'anchor'. Number one of the last three bolts would be required to ensure that a failure at the crux didn't result in catastrophe. The left bower was placed on the table and easily took the trick. Triumphantly standing atop the second pitch, Alan set about installing a solid belay—this should be easy, he thought, with two bolts left. A suitable location was selected and the first hole drilled. Alan placed the right bower on the table only to discover that the cave held the joker … He hadn't drilled the hole deep enough, the bolt bottomed out, copped a nasty blow from the hammer (bending the thread and jamming the nut) so the whole assembly just spun around in the hole, rather than pulling up and tightening. A few choice words were spoken. Thankfully the cave was now out of trumps and the last trick was easily won—the final bolt being successfully installed. A couple of sketchy naturals (psychological protection only) were tied into the mix of 1.5 bolts and the result was a pretty good anchor. Gavin joined Alan to assess the next obstacle.

It turned out that things were not over yet. A short traverse was still required to reach what we had figured was our final destination. The traverse was simple enough—Alan abseiled off his geriatric anchor (the bolts, not Gavin), scrambled sideways on

Continued on page 25

Mystery Creek Cave. ABOVE: Alan and shawls at the end of the phreatic passage; Photo: Rolan Eberhard. BELOW: Dogtooth spars in Bohemia Room. Photo: Alan Jackson.

Junee Cave: Decoration and river passage between sumps 1 and 2. Photo: Dean Chamberlain

Junee Cave. Above and below: Straws in For Your Eyes only. Photos: Liz Rogers.

Gunns Plains Cave. Above: A shawl; below: The Wedding Cake. Photos: Stephen Blanden

Continued from page 20

a taut line and then climbed up. A couple of enormous stalagmites provided a sound anchor for rigging a proper traverse line, which Gavin used. They were now standing directly beneath the huge stalactites that guarded the passage, those that had been seen from the bottom of Expletive Hall. They looked really big now! But bigger still was the sheer 11 m flowstone face blocking forward progress into what could now be confirmed as a large phreatic borehole. With only a few piddly metres of rope left and no bolts, this blank face was unscalable. A hasty retreat was beaten.

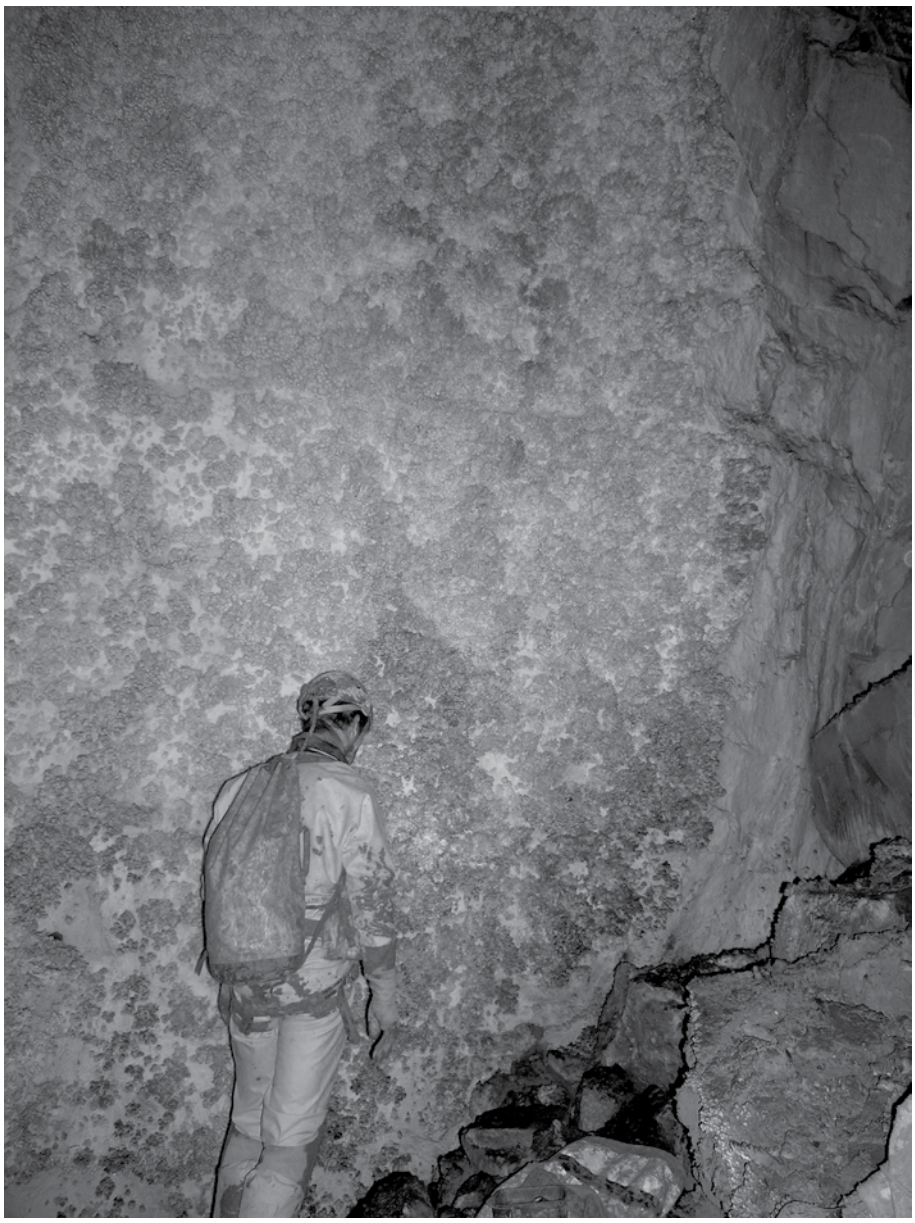
MORE UP, JUST FOR GOOD MEASURE

Andreas, Gavin and Alan returned soon after, properly equipped (more than one bolt each and some brand new etriers) (*SS*367:12-13). They made light work of the obstacle and found themselves in a 15 m wide, 10 m high phreatic borehole with a flowstone floor ascending gently for 60 m. It felt like the cover of an *NSS News,* not a passage in Mystery Creek Cave! The passage was disappointingly short-lived (heading south and all …); it terminated in a spectacular display of black and white shawls, or did it? As was becoming the norm, gazes were raised towards the ceiling; there was an upper level! By lassoing a jammed block, a steep calcite-encrusted slope at the northern end was gained some 4 m off the floor. The view south from the top of this slope was encouraging—maybe there was a gap where the flowstone originated; was there a draught detectable?

The following trip saw a traverse installed along the western wall of the upper phreatic level (*SS*368:5-6). It yielded little other than an interesting view into the flowstone (where a large piece had smashed off revealing the boundary between the old black flowstone and the more recent white section). A small piece was collected and given to Ian Houshold (DPIW) to assess his theory that the black is carbon resulting from fires in the distant past, as has been shown in similar samples from Yarrangobilly.

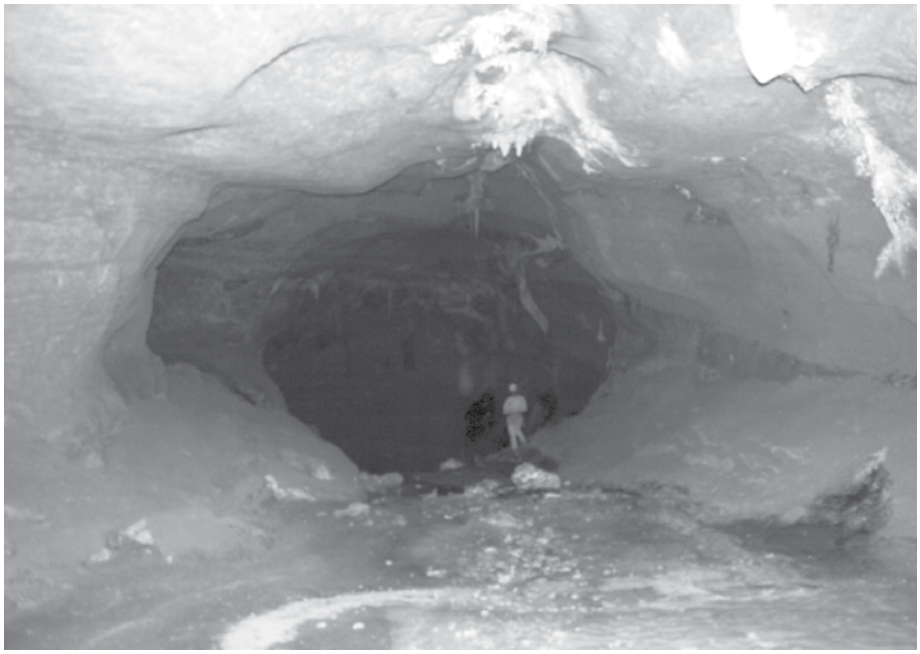
Despite a few remaining 'down' leads in Diathesis, the magic had left the room and the extensions were derigged in January 2009. All these leads most likely head back into the first large chamber discovered back in 2004 and didn't seem worth the damage that would be done by investigating them.

All temporary track marking and ropes were removed; only those bolts and a few maillons that were required to affect the pull-down derig were left behind. This makes a return visit almost as big an epic as



GAVIN BRETT

Rolan and a small section of the coralloid wall in Diathesis



ROLAN EBERHARD

This photo, although not of high quality because of poor light, reveals the structure of the phreatic passage

initial exploration. In the end, it was figured that this was the best long term strategy for protecting the cave from visitor impact. Mystery Creek Cave is generally in pretty poor condition, having been the unofficial 'sacrificial' cave available for unfettered public access in southern Tasmania. Every accessible horizontal surface in the main part of the cave has been trampled by thousands of footsteps to a dull, rounded finish. The contrast between the 'old' parts of the cave and the 'new' stuff is remarkable. The longer the pristine parts stay this way the better.

CRUNCHING THE NUMBERS

In the end, the total length of the extensions (from 2004) was almost 900 m. Assigning the highest point in the Mystery Creek Cave system (Midnight Hole entrance) the value of 0 m, the total depth of the system is -212 m. The start of the crawl-way, Plague and Pestilence, is located at -173 m and the highest survey point achieved in the extension is -42 m—a pretty amazing figure of ~130 m of climbing! Much further and daylight might have been spotted!

It appears Gavin Brett was wrong this time (very rare for an engineer, I've heard)—sometimes when you go up you keep going up, not down. Mystery Creek Cave is now as good as 'fully surveyed' and is a total of 3950 m long.

All that remains is to produce the final map—a task that unfortunately lies in the author's unenthusiastic hands.

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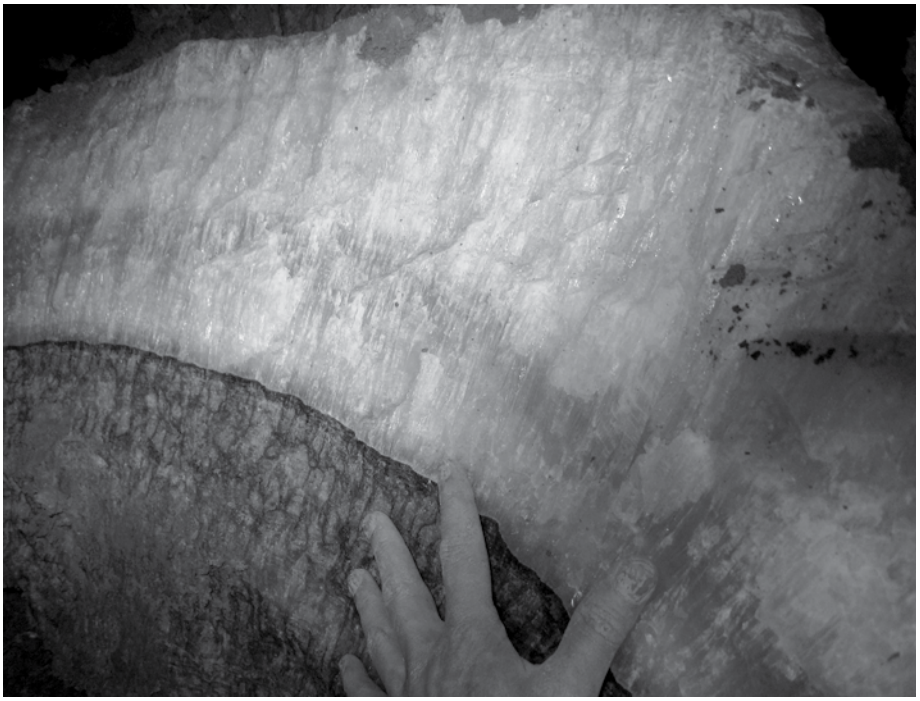
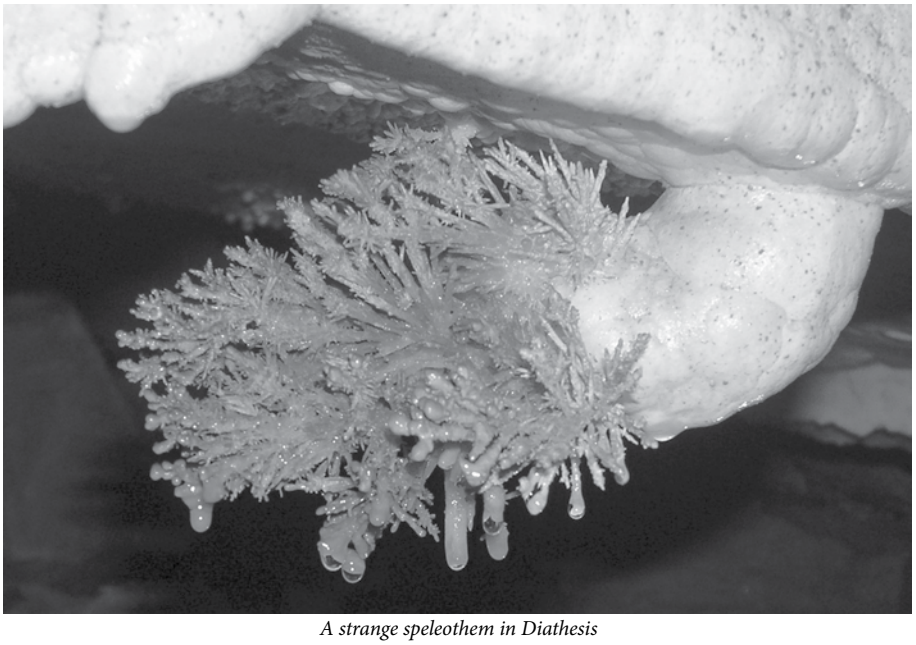


A;AN JACKSON

Fractured flowstone, showing the black-white boundary which interested Ian Houshold



GAVIN BRETT

A strange speleothem in Diathesis

ASF Awards

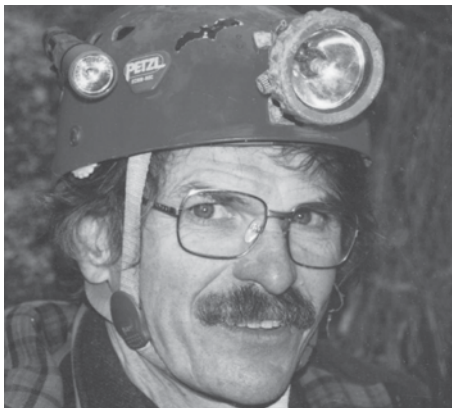
Lloyd Robinson
Convenor, ASF Awards Commision

AT THE LAST Conference Caveman's Dinner several ASF Awards were made as these are traditionally announced at the dinner. The awards this year were for the Edie Smith Award (Ken Grimes (VSA, CEGSA) and Mike Lake (SUSS), Awards of Distinction to Stephen Comino AM (Conservation), Maria Comino (Conservation), Alan Jackson (STC) (Exploration), Stefan Eberhard (Science) and Jodie Rutledge (NHVSS) (for exemplary service to speleology) and Certificates of Merit to June MacLucas (CEGSA), Tony Watson (VSCT) Garry Smith (NHVSS) and Peter Robinson (VSA).

The Awards Commission had organised badges and actual award items as it was realised that recipients often have very little physical memorabilia for the award. Several previous recipients in attendance were presented with engraved badges and award items. Some of the award citations are provided below, others will be published in *Caves Australia* 178.

Edie Smith Award

Ken Grimes



LIZ FENTON

KEN HAS GIVEN outstanding service to Australian speleology over many decades. Ken is probably the most significant Australian karst scientist who has not received the Edie Smith Award. He is highly regarded by karst workers both in Australia and overseas, e.g. he was invited to submit material to *The Encyclopedia of Caves and Karst Science* (2004).

Ken Grimes is a self-employed consultant geologist and geomorphologist with over 35 years experience in geological mapping, Cainozoic geology, geomorphology, karst and speleology.

In Queensland he made several private studies of karst areas and also two karst studies for the Queensland Government. He has been a member of the caving clubs UQSS, VSA, CCV and CEGSA since the 1960s. He has been involved in ASF as convenor of the Surveying and Mapping Standards Commission of the Australian Speleological Federation, and was Queensland co-ordinator of the Australian Karst Index (a computer database of caves and karst features) for the period 1975-1991. He is a co-editor of *Helictite*, the Journal of Australasian Speleological Research and was instrumental in ASF receiving it from the SRC.

He has published several papers on karst, pseudokarst and speleological topics. In particular these include Australian cave and karst areas in general, karsts of eastern and northern Australia, tropical karren and microkarren, tropical island karst, karst hydrology, karst in less consolidated limestones including syngenetic karst, pseudokarst terminology, lava caves and has written or edited a series of Field Guides to the karst and pseudokarst of southeastern South Australia and western Victoria.

He has contributed to the World Heritage nomination of the Nullarbor; provided advice to the Commonwealth Government on the rehabilitation of the karst landforms at a quarry in Tasmania and on karst and pseudokarst heritage in general; documented the karst of the south-east of South Australia for the South Australian National Parks and Wildlife Service; chaired an independent review of the status of the Sellicks Hill Quarry Cave for the South Australian Government; and given advice on stability and pollution problems in tourist cave areas and for quarries in cavernous limestone. He was part of a team that studied the hazards and other aspects of the caves and karst of Christmas Island for Parks Australia.

For several years in the late 1970s and early 1980s he lectured on karst geomorphology, deep weathering profiles and old land surfaces to the annual vacation school for the Department of External Studies at Queensland University.

In 2000 he prepared a distance education (correspondence) subject, groundwater in karst, for inclusion in a course in karst management which has been presented by Charles Sturt University from 2001.

Awards Of Distinction

Conservation

Stephen Comino AM

STEPHEN is a lawyer based in Brisbane who has been in practice for 55 years and is a Principal in the firm Stephen Comino and Arthur Comino. For 20 years he has acted as solicitor to CQSS and later ASF on cave conservation issues.

Stephen has long been involved in environmental issues, for which he was awarded an AM (Member of the Order of Australia) by the Governor-General in June 1994, the citation reading "In recognition of service to conservation and to law, particularly as it affects the environment". This was largely in recognition of his service in the 1970s and 1980s as solicitor to the Fraser Island Defence Organisation (FIDO). In the early 1990s he was President of the Wildlife Preservation Society of Queensland. An environmental lawyer before it became fashionable, it was in these roles that he came to recognise the im-

JOHN DUNKLEY

portant role played in environmental issues by people and organisations with passion and dedication, and the price they often pay, and he has been an acknowledged mentor to many lawyers and conservationists.

When the campaign for Mt Etna moved to a climax in the late 1980s, the Wildlife Preservation Society recommended the services of Stephen Comino to Central Queensland Speleological Society. He has been solicitor to CQSS ever since.

During the campaign CQSS obtained legal aid but Stephen put in much more work than he was paid for. In the late 1990s he carried out all the legal work for CQSS relating to the reconciliation between Cement Australia and CQSS, including advice on the grants made available to purchase the Cammoo Caves addition to the National Park, and obtaining annulment of the orders for costs against Craig Hardy, Peter Berrill, Don Henry, Edna Allison and Mark Godson.

ASF's Public Fund (the Karst Conservation Fund) was Stephen's initiative. After the reconciliation he wrote to CQSS suggesting that it should recommend that ASF become an Environmental Organisation and set up a tax-deductible Public Fund.

His professional work in helping establish the Fund and in the last 4 years as legal adviser to ASF in negotiations about the future management of Mt Etna has all been on a pro bono basis, ASF having paid only for material costs.

Without the support, advice and mentoring given by Stephen in a frequently pro bono capacity, neither CQSS nor ASF could have achieved what has happened, certainly not without much greater financial expense.

Just as FIDO has found it necessary, with Stephen's advice, to maintain to the present day a role as "The Watchdog of Fraser Island", and his firm in Brisbane continues to be FIDO's registered office, so it will be necessary to continue a watchdog role for Mt Etna. Despite advancing age, he travelled to Rockhampton for both the 1999 Reconciliation Ceremony and the recent ceremonial handover of the old quarry site. Just as it has for speleologists and others in Rockhampton and elsewhere, Mt Etna has become a part of Stephen's life.

Outstanding Service to Speleology & ASF

Jodie Rutledge

JODIE has been an active member of the NHVSS since 25/9/97 when she joined as a novice caver. Jodie's enthusiasm for caving was very evident from the start as she quickly learnt new skills and gained knowledge of all aspects of caving. Over the years Jodie has held numerous positions within NHVSS including; secretary, magazine editor and president. In each of these capacities Jodie has excelled and in

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ary 2005 NHVSS began the enormous task of compiling information on the area. This meant many trips to Timor over the next three years. Jodie coordinated the systematic search for and documentation of caves in the area. This included contacting property owners, searches of historic records, involvement of karst specialists and cavers from NHVSS and other clubs.

Jodie never battered an eye at the many

setbacks and continued to focus on the final goal. Without the relentless persistence of chasing cavers, authors and printers the Timor Caves book would not have come to fruition. Jodie's involvement continued right through to the very successful book launch at Murrurundi on the August 2008.

Jodie has and continues to be a very active trip leader, taking on the organisation of many NHVSS trips to Jenolan, Wombeyan, Timor, etc in NSW and numerous Tasmanian karst areas.

Jodie has been greatly involved in the caving world outside of the NHVSS. Jodie had a major part in organising the very successful ASF 23rd Biennial Conference held at Bathurst from 28th December 2000 through to 3rd of January 2001. Over a number of years Jodie has also been an active member of the NSW Speleo Council as a delegate and also as a relieving chairperson/president.

Jodie has been very active within the ASF. She has held the ASF executive role as Membership Secretary for many years and has had other assorted roles including sourcing and managing the ASF insurance from the difficult early days to recent times.

These positions have all taken considerable time and effort to maintain databases and correspond via email and phone to countless numbers of people. The ASF members are indebted to Jodie's ongoing commitment to speleology.

In May-June 2007, Jodie took part in a five week palaeoclimatology research expedition to the island of Flores, eastern Indonesia. The project involved providing assistance to a group of scientists studying speleothem growth and composition to determine past changes in the regional climate.

Jodie has also been an active member of the Bat Society and has continued to undertake bat research over a number of years at Wombeyan.

Jodie is also a member of ACKMA and the NSW Cave Rescue Squad.

Certificate of Merit

Peter Robertson

GREG LEEDER

PETER ROBERTSON has been caving since about 1958. This was with the Sub Aqua Speleological Society where he, with others, was instrumental in exploring Scrubby Creek Cave, Sub Aqua Cave and Dalleys Sinkhole. All of which involved diving. Peter is a Foundation Member of VSA and has done a lot of work for VSA, some of it relatively unacknowledged.

He has participated in many VSA expeditions over the years contributing to various discoveries, in particular in Tasmania and the Nullarbor.

He developed and built a Radio Direction Finder which was used for connecting ground and in-cave surveys. It was borrowed by several other groups (including CEGSA), and was copied as well. It provided correlation of the above ground extent of a number of caves. He has also been involved in making other high standard equipment such as rappel racks.

Federal Cave with the Friends of Buchan Caves: Federal Cave has been relit using LED lights supported by a solar battery system. The lighting design and all the control circuitry was developed by Peter. This has been a major project initiated by the Friends of Buchan Caves and installed over the last three years. The light system is now automatic as all lights are connected to movement sensors and timers. The cave is now used extensively by management for special purpose and educational groups. The whole project has stimulated the Friends group and enhanced its standing in the community and with Parks Victoria.

Peter has recently been instrumental in fighting for public access to the Pyramids.

Rimstone Cooperative owns and operates Homeleigh as accommodation for caving groups at Buchan.

Peter was an instigator in acquiring the property and has been a Director for many years. Homeleigh is a vital resource for cavers at Buchan.

Peter is a very enthusiastic member of the caving fraternity who has been prepared to put time and effort into matters of importance for caving: access, exploration, equipment development and practical activities.

Tony Watson

GREG LEEDER

TONY has been actively involved in running ASF Conferences. Firstly the Vulcon Conference, Hamilton and now the Karstaway Konference, Sale, and he has been an integral part of the conference organising team especially with respect to attracting sponsorship and developing administrative systems.

However, his more important role for caving has been developing and leading the Victorian Scout Caving Team.

This investment of his time and energy has meant caving is actively conducted in an extremely responsible manner by Scouts in Victoria. It is a vibrant and successful group with close ties to both VSA and ASF.

He represented the Scout Association, together with other caving representatives in the development of Adventure Activity Standard for Caving. This was the first of its kind in Australia. It is a Standard for dependant groups. He assisted with the other caving representatives in basing it on the relevant ASF Codes, especially the Code of Ethics and the Minimal Impact Caving Code.

It was very important that such a strong position was put by Scouts Victoria that ASF was the peak body for speleology in Australia.

Garry K Smith

GREG LEEDER

GARRY has been an active speleologist for 40 years, for over half of that time as a caving instructor and examiner for the Scout Association.

He has been a member of Newcastle & Hunter Valley Speleological Society (NHVSS) for about 20 years, and an active member of the club Executive for most of that time. He has at various times filled the roles of President (twice), Vice-President, Secretary, Treasurer, Librarian and Training Officer.

Garry has a long record of published articles in club magazines and journals along with chapters in the Timor and Bungonia books, his particular strength being in simplifying scientific information of value to cavers and the general public. He has wide interests and has conducted research on foul air in caves and its effect on humans, and written many articles on caving techniques, histoplasmosis, mineralogy, geomorphology and photography.

He is an especially gifted photographer, with many awards to his credit at ASF Conferences and elsewhere.

His most recent accomplishment was in co-editing the NHVSS publication on Timor Caves and in contributing many photographs.

A Year in the Life of a Cave

Stephen Blanden
NC

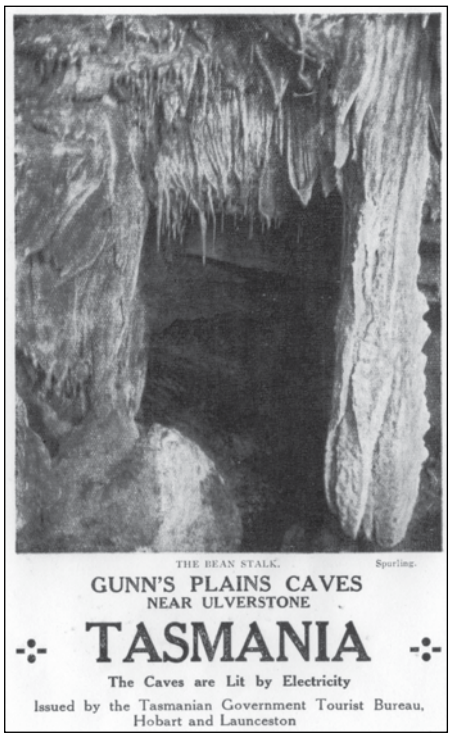
See page 25 for two colour photographs of Gunns Plains cave decorations

THIS ARTICLE covers the history of Gunns Plains Cave in the year 1928 when it became the first electrically lit cave in Tasmania. Gunns Plains Cave is located in North-West Tasmania, 20 kilometres south-west of Ulverstone. The cave is one of the most extensive in the area, being first discovered by Bill Woodhouse in the 1890s and has been operating as a tourist cave since 6th January, 1909.

During 1927 there was a push by the Ulverstone Tourist Association (UTA) with the objective of lighting the caves with electricity. In early January 1928 the president of UTA, George Ellis, met with the Minister for Lands and Works—Honourable J. Belton and Honourable Phil Kelly during which it was stated that there was a grant of £200 now available for funding part of the lighting for the caves, as well as a Government subsidy amounting to £32/7/1 which was duly received by the Ulverstone Tourist Association.

A Mr R. G. Douglas was interviewed by the UTA regarding the lighting of the caves and he offered, for the fee of 10/6 per visit, to act as an advisor, which was accepted. Specifications were received from the Hydro-Electric Department which estimated the cost of wiring and connections for 50 to 100 lights at being about £50. A sub-committee of UTA, comprising G. P. Taylor, H. Wilson, P. Doyle and E. Frith, was elected to arrange for the purchase and installation of the lighting system.

By the end of January the sub-committee had acquired an electricity plant that would provide over 100 lights each of 50 candle power and had also purchased 1000 yards of lead covered cable and water proof fittings to withstand the damp underground atmosphere. This electric plant (7.5 hp electric generator driven by a 10 hp Sunshine petrol engine) arrived on 6th February aboard the steamer *Marrawah* and was subsequently moved to Gunns Plains. Messrs. W. H. Knight and Peter Bros. from Devonport were the contractors appointed for the wiring, with the work being carried out by Mr. J. Halley (an employee of the firm), who commenced the installation of the wiring on Tuesday 14th February and towards March was ably assisted by the manager, Mr. J. E. Bonner. Mr. E. Riley and Mr. R. G. Douglas assisted in the installation of the Sunshine petrol engine (purchased from Strahan) to run the generator. The old acetylene gas system was removed with some of the piping utilised to make handrails for some of the difficult passages and stairways.



A 1929 brochure promoted the new lighting

Mr. E. Frith (Secretary for UTA) secured a reduction in the cost of the electric plant amounting to £7/10/-. Mr. R. G. Douglas interviewed Mr. C. T. Vollprecht from Devonport (Hydro-Electric Department District Engineer) with regard to the installation of the lighting system. The generator plant was insured for £150.

On Wednesday 7th March a party comprising Mr. J. E. Bonner, Mr. J. Halley, Mr. E. Frith, Mr. E. Riley and a journalist for *The Advocate* arrived at the Gunns Plains Caves where they were joined by the caretaker, Mr. E. Maxwell, for the purpose of completing the installation of the electric light plant. Late in the afternoon, after the final placement of 62 electric globes, a trial run was conducted with satisfactory results. One member of the party who had been through the caves many times commented "It was like viewing them for the first time".

The official opening of the electric lighting system at the caves was conducted on Saturday afternoon 10th March. Three motor lorries and quite a few private cars transported nearly 100 people to the caves. The party included the Warden (Councillor R. L. Parsons), Deputy Warden (Councillor A. S. Lakin), Honourable Phil Kelly, M.H.A., Messrs. E. Hobbs and H. H. M'Fie, M.H.A., Mr. and Mrs. Lauder (Melbourne), Messrs. Eric and Hector Thompson (Caulfield, Victoria), Mr. G. Ellis and Mr. E. Frith (President and Secretary of the Ulverstone Tourist Association). The Ulverstone Brass Band, under the guidance of Bandmaster E. C. Green, accompanied the party and played a number of selections. The Honourable Phil Kelly officially declared the caves open under the new lighting system. He thanked various people for their contributions including P. Doyle (Discoverer of the large chamber at the far end, known as "Doyles Chamber") and E. Frith for their work in the caves. Mr. Kelly said "that caves such as these were an asset, not only to the Leven district, but to the whole state".

On the afternoon of Saturday 17th March Mr. C. T. Vollprecht, Mr. J. E. Bonner and Mr. R. G. Douglas inspected the lighting system on behalf of the Government with the installation work found to have been carried out satisfactorily. A proposal to install an additional 25 lights was forwarded.

Early May resulted in the contractors—Messrs. Knight and Peter Bros.—commencing the work of installing 25 additional lights

in the Gunns Plains Caves. In the additional lights three flood lights were provided for. One flood light was to be installed in "Doyles Chamber", another in the "Glow-worm Chamber" and a third in the "Cathedral". A switch was also installed in the "Glow-worm Chamber" so that the tourists could view the myriads of glow-worms lining the roof, in darkness.

At the May meeting of the Ulverstone Tourist Association it was reported that over 1000 people had visited the Gunns Plains Caves so far that year and that over 500 people had done the trip in the two months since the installation of the new lighting system. This was more than the total number for the year 1927. The gross revenue for the year to date was £80.

In June the Government Tourist Publicity Officer (Mr. E. T. Emmett), who was also a member of the Tourist Advisory Board and the secretary of the Scenic Preservation Board, in conjunction with E. Frith, H. Wilson, T. Bingham and Major R. E. Smith (members of the Ulverstone Tourist Association) along with several journalists and visitors inspected the caves. Mr. Emmett commented on the blanket formations (shawls) found in the "Cathedral", saying "that these surpassed any he had seen and he was sure there were more of them than in any other caves in the State". He also commented "that railings were needed in parts of the caves to protect people using the pathways or climbing ladders". It was his intention to recommend to the Scenery Preservation Board that a sum of money be made available to assist the UTA in the railings and other necessary work.

At the annual meeting of the Ulverstone Tourist Association in September it was reported that the revenue for the past twelve months amounted to £441/17/11 of which Caves—£91/3/7, Government subsidy for the caves—£32/7/1 and a grant for the caves—£246—made up the majority.

The revenue received from the caves of £91/3/7 was an increase of £64 on the last year which was a record, being more than three times the amount received for the previous year. It represents over 1200 visitors and was entirely the result of the introduction of electricity for lighting. During the meeting it was also reported that the Tasmanian Government Tourist Bureau was having 5000 leaflets of the caves printed with a number of illustrations featuring the "Beanstalk", "The Grotto", "Doyles Chamber", "The Blankets" and "The Shawls", which were distributed in other States.

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The Riveaux Cave Project
A history

Stephen Bunton
STC

RIVEAUX CAVE (HC-2) is the main cave in the Hustling Creek karst area and one of the only two tagged features in this area of southern Tasmania. (The other is HC-1, a streamsink which flows into Riveaux Cave). The caves in this area are of great significance to quite a number of stakeholders including; conservationists, cavers, Forestry Tasmania, the Tasmanian Department of Primary Industries and Water (formerly DPIWE; the Environment part has been incorporated into the Department Tourism, Arts and the Environment, which includes National Parks) and the Aboriginal Community. The scientific investigation of this area, its conservation and reporting has provided a landmark in co-operation between these groups.

The existence of caves in the Huon Valley was first brought to the attention of STC in 2002 (Bunton 2002a). Conservationists had overheard something on the Geeveston grapevine and went to investigate. They were concerned that Forestry Tasmania, which was already logging massive areas in the southern forests, had plans to extend their operations up the Huon to the edge of the World Heritage Area (WHA) at Blakes Opening, on the slopes of the famous Huon (YoYo) Track to Federation Peak. This historic track has a somewhat iconic place in Tasmanian bushwalking history and any degradation of the area would be inappropriate. However, this was not sufficient to deter Forestry Tasmania from preparing Timber Harvesting Plans for a number of coups and constructing roads into the area; and these were subsequently gated.

The caves are on the slopes of Mt Riveaux, which is a peak on the Peakbagger's Guide to Tasmania list; (worth 4 points!) and a member of STC obtained a key to the gate for the purpose of doing a walking trip to Mt Riveaux. The caves are near Hustling Creek and without any knowledge of their precise whereabouts, we prepared a number of HC number tags in anticipation of finding cave features in what is now officially known as the Hustling Creek karst area. On that trip, STC was shown the few caves known to the Southern Forests Network (McKinnon 2002).

The first feature in the area was the streamsink tagged as HC-1. This was right beside the road and runoff from the road was causing turbidity in the stream entering the streamsink. The second was HC-2, known to be an extensive outflow cave. Immediately it was decided that the best course of action was to survey this cave to support the case for conservation of the area. Caves and karst get special mention in the *Forest Practicee Code* (Forest Practices Board (2000)) and there exists a special *Forest Sinkhole Manual* (Kiernan 2002) which also provides a guide to forest operations on karst.

The map of what was now to be known as Riveaux Cave HC-2 (originally referred to as Roberts Cave) was published in *Speleo Spiel* 337 (Anon. 2003); it showed the cave to be over 500 m in length. The stream within the cave was the same stream as was sinking at HC-1. The cave extended upstream beyond HC-1. The most significant point to note was that the cave passed beneath the logging road. This first caving trip into the area discovered major breaches of the *Forest Practices Code,* clearly no-one had consulted the geological maps and no-one had performed an on-the-ground survey of the area for caves prior to the building of the road. A Forestry Tasmania statement (Forestry Tasmania 2002, see Appendix 1) attempted, unconvincingly, to explain this away and attempted to shift any blame for the future degradation of the cave to the Wilderness Society for not stopping its members going to the cave. In fact, it was an unrelated conservation body, the Southern Forests Network, which took STC to the cave based on information they had gained independently (Bunton 2002a).

The breaches of the *Forest Practices Code* were highly embarrassing for Forestry Tasmania on two fronts. The Southern Forests Network was in communication with Greens politician Peg Putt who briefly raised the issue with the Government before a policy of secrecy was adopted to protect the cave. More significantly, Forestry Tasmania had invested in the construction of the road and was most unlikely to recoup its expenditure, as the trees upstream of the point where the road crossed Riveaux Cave were now off limits.

The existence of Riveaux Cave was brought to the attention of the community when STC acted as guides for a film crew who were invited into the area early in September 2002, to make as much media mileage as possible in an attempt to protect the caves and their catchments (Wood 2002a, Wood 2002b & Waterhouse 2002).

MEDIA FRENZY

The short-lived media frenzy prompted Forestry Tasmania to take some action themselves by surveying the natural features of the area. Some effort was made to ameliorate the turbid inflow at HC-1. Riveaux Cave was resurveyed by members of the Forest Practices Board. This seemed entirely unnecessary since STC already had a survey and considering that surveying is possibly the most damaging phase of a caves "life". STC probably would have released the map to Forestry Tasmania if it had been consulted on the matter (Bunton 2003b). Members of the Forest Practices Board also looked at a number of other caves in the area and it was then that an Aboriginal art site was discovered. This cave is reportedly so beautiful and fragile that initial exploration stopped so as not to cause damage to the crystal floor. It was during the retreat that the hand stencils were discovered.

As then President of STC, Stephen Bunton was summoned to the Forestry Tasmania office in Geeveston to be asked if he could ensure that club members not enter the caves under any circumstances, although the reason for this 'directive' was not given. The only clue was that "We have found something very significant in the caves." Reading between the lines there was only one thing it could be: evidence of Aboriginal occupation.

At the time Steve was also required to relay the "keep out" message to the Wilderness Society, which he did. The Wilderness Society also read between the lines and rang Forestry Tasmania to confirm this eventuation and passed the message on back to Steve. The Wilderness Society, realising the significance

of the Aboriginal art site proposed that the best solution was to extend the World Heritage Area eastwards to include the Hustling Creek karst.

This proposal was not acceptable to the Aboriginal community who consider the area Aboriginal Land, nor was it acceptable to Forestry Tasmania who still thought that they could harvest the trees by the improbable means of building another road—this time around the karst—either higher up the hill on the slopes of Mt Riveaux or down on the flat near the Huon River. This latter proposal was unacceptable to the conservation movement because of the historical significance of the Yo Yo Track and unacceptable to the Aboriginal community because of the holistic way in which they view landscape. It would be a violation of the spirit of the place, even if the caves were saved, if the surrounding forest was destroyed!

Arthur Clarke had been in contact with Nicholas White (ASF Conservation Commission Convenor) at this stage to seek ASF support for saving the caves but given the presence of Aboriginal hand stencils in the caves, Stephen Bunton assured Nicholas White and ASF, that at this stage the caves were safe and that it would not be in the best interest of the caves to increase awareness of their existence, by any type of publicity campaign.

Forestry Tasmania admitted that it did not have the resources to fully survey the karst area and therefore, engaged STC in negotiations with the other stakeholders. Forestry Tasmania now does employ a junior officer to look for caves in areas which are scheduled for future logging but it does not employ a person to write and implement management plans for caves in State Forests, although there are significant cave-related issues in other areas, particularly Welcome Stranger (Junee-Florentine) and Shooting Star (Mole Creek).

As the then President of STC, Stephen Bunton attended a meeting with the Tasmanian Aboriginal Land Council (now Tasmanian Aboriginal Land and Sea Council, TALSC), Forestry Tasmania and DPIWE (now DPIW) representatives. All parties agreed that the area should be preserved and that input into its management was beyond the scope of any one authority. No minutes of this meeting were taken.

AN ISSUE OF OWNERSHIP

The major issue boiled down to a matter of management / ownership of the land. At the time it was State Forest (and still is) but if it became WHA, there might be pressure for it to be administered by Parks & Wildlife Tasmania. These bodies either do not have the resources, or are unwilling to devote the resources necessary to manage the area long-term but both seemed to want to control it. On the other hand, the Aboriginal Community wanted the area to become Aboriginal land officially. STC felt that the best legal protection would be afforded by making it a part of the WHA.

In the lead-up to the 2004 Federal Election the Howard Federal Government, in conjunction with the Tasmanian Government, could have solved this dilemma when they pledged to reserve an extra 180 000 ha of forest forever. In the end, most of the 180 thousand hectares was in small packages of streamside reserves around the State and the Australian public was conned massively (as it was with interest rates—and the Tampa Affair!) The Huon Forests were not a part of the final package nor were the sensitive and little known karst areas at the head of the Florentine, which was the focus of Wilderness Society lobbying. (Roading into the Florentine began in Autumn 2007 and logging began in January 2008.)

In reality STC was advocating the preservation of a significant wilderness cave, situated within 20 minutes of the Tahune Airwalk, one of Tasmania's most popular tourist attractions. The difficulties this posed for management were great. Access issues were at the forefront with discussion of permits and gating. Gating was not seen as a particularly aesthetic solution by the Aboriginal community because of its impact on the spirit of the place. The best method of conservation at this stage was silence, to keep it out of the media and not publish anything about the area in the various speleological journals. The matter was dropped from the political arena in an effort to keep it secret from the general public.

STC was willing to participate in the study with the only condition being that it be given a copy of the final report. At the initial meeting it was agreed that no-one would go into the area until the terms and conditions of the study were determined. All parties were very respectful of the fact that there was a strong Aboriginal interest in the area. Some members of the Aboriginal community expressed surprise that no cavers had visited Judds Cavern (Wargata Mina) since it had become Aboriginal land in the first Tasmanian Government land handback on November 14 1995. (An STC member did apply for a permit to undertake research in the area but permission was not granted and he conducted his research elsewhere.)

At the second meeting of this group, Arthur Clarke took over from Stephen Bunton as the STC representative. The survey of the area was conducted over a period of approximately one month about Easter 2004 and involved fifteen STC members working with members of DPIW, Forestry Tasmania, the Forest Practices Board and the Aboriginal Community. Cavers were not paid for their labour but support costs were met by Forestry Tasmania.

Quite a number of caves were found and various streamsinks investigated right through to Blakes Opening. In accordance with Forestry wishes no official club records exist of these trips and nothing was published in the club's newsletter, *Speleo Spiel*. (This, incientally, has made the reconstruction of this history more difficult than it ought to have been.)

The final report was prepared and a preliminary electronic copy was given to Arthur Clarke, since he was listed as one of the authors, having provided most of the photos and contributed a large portion of the fauna chapter in the report. Cavers were invited to view this as a Powerpoint presentation at the offices of TALSC. The preliminary report and Powerpoint contained a picture of the Aboriginal hand stencils. Again no record of this meeting was made.

A CONTRADICTION

Initially STC was not given a copy of the final report, allegedly because Arthur Clarke still had a copy of the preliminary report on his computer and this contained a photo of the hand stencils. This seemed rather contradictory to us since the hand stencils featured prominently on a poster, which was openly displayed in the TALSC office on the night of the presentation. Even more incredible was the fact that an article, documenting a visit to the caves by members of the Aboriginal Community, appeared in *Time* magazine (Pacific Edition) (Clausen 2004) drawing attention to their existence. Possibly as a result of this indiscretion, the Director of TALSC was replaced shortly afterwards. A photo of the stencils is still available on the internet associated with a news story from *The Age* newspaper (dated December 6th 2003).

STC had escorted some members of the Aboriginal Community to the caves but other visits had occurred during the interim. One trip involved some elders introducing "at risk youth" to a part of their cultural heritage. When the Forest Practices Board suggested to Forestry Tasmania that this may not be an appropriate use of the cave (Duhig, pers. comm. 2007), Forestry Tasmania, the land managers, deferred to the wishes of the Aboriginal Community. Clearly there is a need for management guidelines to be drafted.

All along it has not been STC's wish to promote this cave in anyway, show it to other

cavers nor develop it as a tourist attraction. Our aim is merely to document it as just as we would any other part of Australia's rich cave heritage and ensure its long-term protection. Initially, we were concerned about the impact of visitors to the cave, mostly from the Geeveston local area. Our concern is always the impact of visits by inexperienced people who (possibly out of ignorance) may not necessarily show the same level of care as more experienced cavers. Caves have a certain fascination and new caves, or secret caves, provide an even greater attraction. STC does not mind responsible people visiting caves but it is concerned about the damage their visit will cause. The club therefore promotes the ASF Minimal Impact Code and sees part of its role as educating the community at large about how to cave softly.

MAJOR IMPACT

There was an obvious major impact in this area from forestry operations and we felt it important to be involved in the conservation of the caves. At the moment we have a verbal undertaking from Forestry Tasmania that they will not log the area, although they probably can't anyway under the Commonwealth EPBC Act).

Aboriginal community members can and do visit the area, but local cavers are still bound by a promise not visit the caves.

TALSC was going to hand over a copy of the final report at an STC meeting in September 2006 but due to unforseen circumstances the then Director, Colin Hughes, was not able to attend. Finally at the April 2007 General Meeting, Caleb Pedder, the new Director of TALSC did present us with a copy of *The natural and cultural landscape of the middle Huon River Valley: Aboriginal and environmental systems* (Houshold et al. n.d.). Unfortunately, even at this stage, Arthur Clarke, who is one of the authors of the report, has not been given a courtesy copy.

Caleb Pedder thanked STC for its efforts. The occasion provided an opportunity for cavers to ask questions about Aboriginal issues with respect to caves and we were briefed on what procedures to adopt, if in future we were to find evidence of Aboriginal occupation in Tasmanian caves. Pedder said TALSC still wants Forestry Tasmania to produce a management plan for the area. Likewise, STC sees the production of this report as only the first step and that the Riveaux Cave Project is still in progress.

STC would like the management group to reconvene as soon as possible. I wrote to all the agencies involved, acknowledging the receipt of our copy of the report, thanking them for their support in the project and asking that the management committee reconvene to consider the future management of the karst area.

LONG TERM CONCERNS

Some of the matters which concern STC for the long-term management of this karst area include:

- Land Tenure: Will the area remain State Forest, or will it be incorporated into the WHA, or is it earmarked to be returned to the Aboriginal Community at some time in the future, or will it become both Aboriginal land and World Heritage?
- Logging: Is Forestry Tasmania able or allowed to log in the vicinity? Does it still intend to log the area if it can?
- Rehabilitation: Will the road be rehabilitated? What more can be done to limit turbid water entering HC-1?
- Access: Who can go there and under what conditions? Will a permit system be implemented? Will this permit system apply to all agencies and all management trips?
- Publication: Will STC ever be able to publish the results of its work in speleological journals such that official records of the caves exist? Should the caves be numbered, tagged, documented and referred to in the same format as other Australian caves?
- Photography: Who can take photos of the cave art and where can these photos be published?

I hope that the next time I report on Riveaux Cave and the Hustling Creek Karst Area I can have some definite answers to these questions. At this stage the logging road has not been rehabilitated.

In the meantime we must consider that the partnership STC entered into between TALSC, DPIW and Forestry Tasmania is groundbreaking and futuristic. Not only have the caves been preserved and documented to some degree but this new era of collaboration sets a precedent which I hope will be followed for cave and karst area management in future.

I hope that it will lead to more information sharing and input of (dare I say it) "cave experts" into the decision-making. These various agencies can be duly proud of what they have achieved so far even though in many respects it only represents getting to first base. As mentioned earlier, STC is still awaiting further management meetings but at this stage the Aboriginal community seems happy that nothing is happening, hoping no-one is going there and Forestry Tasmania is happy not to spend more money on a non-core enterprise.

Unfortunately in recent official documentation of the Riveaux study, there has been no mention of the part STC played (Australia 2008). Some members of STC, in particular those who gave many hours of voluntary labour, are quite offended by this oversight and some conspiracy theorists (embittered by the fact that STC was only given a copy of the original report reluctantly) have considered that this is a further attempt to remove cavers from the discussions about cave management.

If meaningful discussion about the management of caves in the Hustling Creek karst area seems unlikely to eventuate, cavers could well be excused in wanting to take cave management into their own hands.

If cavers are going to go crawling around in caves then they may as well be doing something useful in their endeavours. Serving the various agencies, which serve the population of Tasmania and Australia at large, can only be seen as a good thing as can co-operating with the Aboriginal community.

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Appendix 1:
The Forestry Tasmania press release

Forestry Matters

The forest practices system works to protect Huon Valley caves.

During the past two weeks a geological feature known as the Riveaux Karst in the Huon Valley has been the subject of media attention.

Karst is a system of caves and sinkholes sometimes found in limestone or similar geology.

This particular karst system was discovered by forestry workers in early 2000 during the pre-harvest planning which followed construction of an access road. At the time the road was constructed, no limestone had been mapped in the area by Mineral Resources Tasmania.

The steps that were then immediately taken to assess the karst system and the possible impact of timber harvesting on it, provide an excellent example of a successful forest practices system in action.

Immediately upon discovery of the cave system, Forestry Tasmania contacted the Forest Practices Board which undertook a survey of the area. The resultant report recommended that the road be retained provided action was taken to seal culverts and re-organise drainage etc.

In compiling the report, a geomorphologist (a forest practices scientific specialist) assessed the caves and reported that they were susceptible to damage and that 'even walking across the floor could crush delicate crystal formations'. According to the report, this damage could be incurred by recreational cavers, vandals and even scientists.

The Forest Practices Board report concluded that opening -up these pristine caves to the public was clearly not conducive to protecting the environmental values contained within them and that further assessment should be undertaken. The Wilderness Society were advised of our approach to assessing the area and understood the need to protect the caves from public intrusion.

Forestry Tasmania then commissioned a $50,000 geomorphological survey by Drs Drysdale and Taylor of the University of Newcastle Department of Geosciences and Macquarie University Department of Physical Geography respectively, to determine how best to manage the area. Recommendations contained in that report are still being acted upon.

Forestry Tasmania put a 'hold' on harvesting in 2000 and as a result of the FPB report, the Drysdale and Taylor report and a further independent survey. Harvesting plans for coupes within the karst area have been indefinitely deferred until all proper assessments have been undertaken.

Forestry Tasmania was therefore disappointed when the Wilderness Society decided, contrary to Forest Practices Board advice about the need for discretion with regard to the karst, to lead a media tour to one of the caves which was subject to assessment.

Given the understanding that there were to be no public announcements about the cave until a proper management plan had been developed, this was considered a breach of faith and potentially damaging to environmental values within the cave.

To coincide with the unauthorised Wilderness Society 'tour', the Tasmanian Greens then accused Forestry Tasmania of 'keeping the caves a secret to 'stitch-up' logging plans'.

In summary, we contend that the forest practices system in Tasmania works. As a result of forest practices code requirements, a comprehensive evaluation of the karst area is being undertaken which will ensure proper protection and environmental management of the cave system. Any future harvesting will depend on the outcome of this evaluation and an appropriate management plan being approved and agreed.

Forestry Tasmania
September 12, 2002

Forestry Tasmania
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Forestry Tasmania - What's going on in the forests and why.

Nullarbor Journal 2008

Ian Curtis
OSS

This is a diary of the 2008 VSA trip to the Nullarbor involving several cars, an ultralight plane, fridges, caves and the* Daily Mail. *The 2007 diary was published in* CA 175. *It is reprinted in a slightly edited form from* Descent *Vol 9, November 2008 (the OSS journal).

Tuesday 8th April

'the wedding behind us we took our thoughts to …'

'the wedding had come and gone and preparations for …'

'our pilgrimage to the Nullarbor this year …'

'preparations for the trip had been somewhat stifled by wedding plans … a flurry of activity …'

Swampy tried to be helpful as I laboured to put pen to paper on the long road into Wilcannia. Packing had been a bit rushed for the trip this year as we were four days behind schedule and the others would already be there. A list of forgotten items to be picked up at Broken Hill was being compiled as we drove westward, ever westward, into the sun. As usual we began compiling our bird lists and keeping an eye out for old and unusual cars. But, the facts, as Gradgrind would say.

Denis's Land Cruiser turned out of my drive at 1 pm. Lunched on Ronda's sandwiches at Geurie.

Noted a transporter of old cars parked in the only side street of Nevertire (66 Valiant; Mark III Zephyr), ironically just as I awoke from a snooze. Pulled over and breathalised leaving Nyngan. Petrol, at Cobar. Camped after dark on the ground at the Bulla rest site, 120 km west of Cobar. The drive into the sun in the late afternoon had tested Denis's eyesight. Phoned home.

Wednesday 9th April

Sound sleep on the concrete, though the refrigerator truck that pulled in at 5 am, next to us and waited till dawn was not nice. Like last year, we breakfasted and commented on the birds at the roadside tanks and the graffiti on the wall. Denis was amused by the disparaging comments about an overzealous policeman in Cobar. A truckie delivering turf to Wilcannia stopped for a break and the driver told us he was traveling from Inverell with his wife and youngest son and had seven kids at home. We thought about this.

The Cruiser wouldn't start and had to be roll-started. (Lucky us! Try pushing a Land Cruiser and loaded trailer on a very flat road.) Water in the Darling at Wilcannia, and flowing too. Lunched at Broken Hill, bought the items we had forgotten, then headed off to Peterborough and Port Augusta. Awful, sandy campsite in the caravan park so we moved into the concrete kitchen and slept on the floor. Before turning in we had wandered down to a brightly-lit waterfront pub and stared at the exploits of James Bond on the screen while being pestered by a drunken ex-shearer. JB made caving look pretty tame.

Thursday 10th April

Flat tyre. Slow start. We admired the caravans and rigs around us (I'd been to the Sydney Camping and Caravaning Supershow the week before) and chatted with an excited group of older bike riders on an ecotour adventure over to Quorn. It was eleven by the time we'd fixed the tyre, petrolled up and bought our prescribed list of vegetables. Kimba, lunch. Close look at Kyancutta so we remember the turn-off on the return trip and don't repeat last year's stuff-up. Jeez! Another flat tyre, Denis riding the weaving truck to a halt. By Ceduna we'd had enough of the road so we took a cheap (the cheapest) caravan in town. Lucky. That night it rained.

Friday 11th April

Poor attempt at an early start. Pulled out at 8.15 am. A couple of large dolines on the LHS spotted just out of town – will try to look into on the return trip. We admire the local cultural idiosyncrasies: the painting of water tanks and windmills in AFL club colours and the windmill collection at Penong.

Denis inadvertently put in premium at the Nullarbor Roadhouse ($1.85/litre. Unleaded

NICHOLAS WHITE

The author at work

a mere $1.80. Till that point we had been paying in the $1.40s.) Turned into Koonalda and noticed that the shed/workshop had been disassembled. Drove north and north and further north. Relieved to finally hear Nick's response on the walkie-talkie, just a few miles south of Hughes. Talking, laughing. We are the last to arrive and we are carrying water.

Saturday 12th April

Great excitement! Ken has discovered a very promising hole, about the size of Thampana, so the whole party headed over in two vehicles. Promising indeed! Much debate on rigging points before a ladder and rope were dropped down. Denis, Greg, Hank and I dropped about 20 metres into a large bell-shaped room, undisturbed, littered with animal carcasses. We noted feral cats (perhaps a dozen), dingoes (about ten), a goanna, several snake skeletons and numerous bird remains. Our excited calls to the surface encouraged Ken and Nick to descend.

The cave is a large single chamber with light penetrating to the floor. One corner has had a rockfall, which can be climbed through. The floor is littered with small bones, probably the remains of owl dinners, as their pellets lay around. Numerous sea creature fossils were seen and photographed. Numbered 5N3883, we were in the cave from 11 am till 4.30 pm. The cave was left rigged after our ladder ascent as the decision was made to return the next day and map it.

Nick's monster was photographed on the way home. Denis erected his pavilion before dark and everyone moved in.

Sunday 13th April

Stove not going. Fridge, not going. Nick elected to remain in camp, rest and prepare the nights meal. Denis, Hank, Greg and I drove off to map the cave while a second vehicle with Daryl, Margaret and Christine followed us to the hole and then headed off to check out nearby features. Ken was above as we descended, circling about a kilometre away.

Denis was not satisfied with yesterday's rigging and painstakingly made adjustments. At 11.30 am we entered and began mapping. Denis took readings, Greg rabbited and I scribed. Hank disappeared, not to be seen till about 4 pm when we were finishing up—quite a feat in a single chamber! He had been photographing the whole time. (He has a 4 gig memory card in a Canon Eos.) Not much new was discovered (a few more cats and dogs), though the cave was greatly admired for its bell shape.

The rays of late afternoon sunlight threw penumbra into the furthest recesses of the rock fall. My sketching, I felt, was not satisfactory, and will need to be redone. A tiring ascent at 4.30 pm, assisted by Daryl and party who had returned from their explorations.

NICHOLAS WHITE

Ian in a hole

At camp Ken told us he had made two very exciting flights - four hours - and had tagged over 80 features. The *Daily Mail* arrived late that night with locations everywhere. Tomorrow will be a busy day of tagging.

Monday 14th April

This fridge is a worry. We dispersed the contents into all available space in other fridges.

Plenty to search out today. Two cars headed out south and followed each other to K2188 (5N4109). The blue-bush was too thick to penetrate so both cars returned to the road, continuing south, before turning in to find K2201 (5N4110). We drove, then walked south, locating 5N4111, 5N4112, 5N4113, 5N4114, 5N4115, 5N4116, K2115 (K2115V), found two new holes 5N4117 and 5N4118 and determined K2231 and K2230 were wombat holes.

As we'd run out of enthusiasm by this stage we returned to the car, parked at K2214. Christine was discovering the joys and intricacies of the GPS and refused to be confused by the prospect of discovering the joys of the compass.

Our return to camp along our original tracks proved difficult in the descending sun and a loud air leak pulled us up. Denis efficiently changed the wheel and we returned to camp without further incident. Ken had located about another 50 features, though only one, well away from the track, might be of major interest. Greg had remained in camp all day to do domestics and draw up yesterday's map before preparing the evening meal. Denis worked on tyre repairs. Our tube from the Ceduna blowout was cut completely in two. Problems with the compressor – tubes weren't inflating. Another job for the morning. Daryl and Hank worked late into the night on the Daily Mail which arrived just as the camp was turning in. Today was the first day we had seen a rabbit, though pellets were much in evidence.

Tuesday 15th April

Can't find the gas canisters so no early morning cup of tea. Can't find my glasses again today. Denis awoke as I rooted around before heading over to Nick's camp for a cuppa there. We seem to be the two early risers. We discussed the dogs that had been howling and barking during the night and towards dawn. Not too distant.

Nick's Hilux, with the usual crew on board (Nick, Denis, Greg, Christine and I) headed south to locate the features fairly close to the road. We'd decided not to chance the vehicle in the blue-bush after Denis's chastening experiences yesterday.

On the trip a lone dingo was sighted near the road, wary but little perturbed by our unexpected proximity. A lone camel could be seen far away. We quickly located K2223 and tagged 5N4119, 5N4120, K2105V, 5N4121, 5N4122 and 5N4123. The walking was easy and the banter enjoyable.

At that point the group was divided. Denis, Greg and I were all for continuing around in a crescent to finish the area, the others were for returning to the car, parked on the track, where they'd left their lunches. A compromise was reached - Greg and I eating at the doline before meandering back to meet the rest of the gang at the car.

A new plan was hatched. Denis, Greg and I would walk west to take in some convenient holes and Nick and Chris would drive the car around to the big cave track to meet us. 5N4124, 5N4125, 5N4126, 5N4127, 5N4128 and 5N4129 were located in this way. K2202 (5N4129) was a small rock watering hole, and numerous flints could be detected around it. Nick determined the feature should be numbered but not tagged in respect for those who had lived there previously and left their tools.

Being so close to the large hole it made sense to drive there before heading home, just to see if my lost glasses had been dropped on our previous visit. Greg also wanted to tidy up a few surface measurements.

I found the glasses—the remains glinting brokenly in the sun, flattened by a two-tonne Land Cruiser. Cave measurements were taken. Christine spied a collective noun of six camels to the distant west. On the return trip to camp the same dingo was in the same locality, probably sussing out our camp a couple of k's away.

Three (probably) flying bustards were seen in the distance. How do they survive I wonder with the dingoes and feral cats? No howls that night.

Wednesday 16th April

Perfect morning. Marvellous dawn. Two cars set out. Our group (Denis, Nick, Greg

and I—not Christine, who was staying in camp that day with Ken) headed south to see if we could clean up a large number of features not far off the road. Swampy very gingerly drove in to K2106 (K2106V) before admitting defeat by the blue-bush. We mapped a southern circle of features 5N4130, 5N4131, K2117V, K2118V, 5N4132, 5N4133, 5N4134 and 5N4135 where we had lunch before returning to our car about 3 pm after locating 5N4136 and 5N4137. Denis and I then walked north to locate 5N4138, 5N4139, 5N4140 and 5N4141 – the last three a great disappointment as three rock holes in adjacent dolines taking lots of water suggested joining chambers. We tagged 5N4142, 5N4143 and 5N4144 before returning to the car. Nick and Greg, who had remained at the car and scouted around in the vicinity, had located one close by (5N4145). So, eighteen holes (and an untagged doline) had been visited and located.

Difficulty locating our incoming car tracks in the setting sun. We returned to camp at the same time as Daryl's Prado, just after dusk at 7 pm. There Ken and Christine had prepared a feast—damper, silverside and vegetables. Wonderful. A close late-night inspection of the listing Cruiser suggested a tyre problem. We'd confirm in the morning.

Thursday 17th April

Flat tyre. We'd have to keep near camp this morning as we now have three to fix. And we haven't cooked yet. And I haven't had a proper scrub. So this morning will be spent in camp. It is now 7.30 am, the sun is up and there are no other risers. I was slow this morning, too, as yesterday was a big day for everyone.

Tyres will be fixed this afternoon. As usual, we split off at 10 o'clock. Because of the tyres we went (the usual crew) with Nick, south a few kilometres, to pick up several features near the road. We tagged four: two K numbers (K2181 and K2179) and two others we stumbled across. (I am uncertain of 5N numbers allocated.) Denis mapped a small chamber in one of the caves.

We returned to camp early, about 1 pm, had lunch, and started our chores. Denis mended tyres, I scrubbed before showing Christine how to do the Sudoku. My cooking night—spaghetti bolognaise—which everyone helped me prepare—Christine with the chopping and positive thoughts, Greg with the fire, Nick with ingredients. Great success. Hank cooked another damper, as good as Ken's last night.

Although the day had been warm, as all previous days, sheltering in the shade of the mobile hangar with a light breeze had been quite pleasant. The only time it becomes unpleasant is after dark eating dinner, where everyone finds the plain winds uncongenial (except for those acclimatised in Orange). Only in the morning is the air still, when this diary is written and the small local birds identified.

NICHOLAS WHITE

Swampy

Friday 18th April

Decision was made to go and look at the large cave that Ken had spotted. Two cars drove south along the track that had been pushed to 5N3883, explored when we first arrived. We chanced upon 5N4150, then had a fortuitous saltbush run to 5N4156, the target of the day. This hole is a double blowhole in a large doline. A startled kestrel flew around. After a circumspect, preliminary look, the group lunched before heading back down to explore and survey.

Nick and I headed off to K2290 (5N4157) and cursed the fact we had no Denis to descend the blowhole to visible, rippling water. My turn. Very sharp on shirt and a tightish entrance. We rejoined the others. 5N4156 is a large, collapsed rock chamber, with numerous kangaroo remains at the lowest point. There is evidence of kestrels, possibly an owl (droppings with bones outside the cave) and dogs. For convenience sake we dubbed this Kangaroo Cave.

With Denis surveying, I figured the group would be tied up for some time, so Greg and I headed out to finish all holes in the vicinity. We found BH K2327 (5N4158) but could not track down K2291, which Ken had marked as a 'possible slot or shadow'. K2326 (5N4159) I entered and it turned into a tight and nasty little jagged-edged cave with possibilities. My 1992 Deseret Industries $2 shirt was shredded and Denis's absence cursed again.

A call over the walkie-talkie from Nick sent us scurrying, stumbling into BN4175, an interesting BH nearby, which had us discussing possibilities of the two holes joining. Nick drove the Hilux up to meet us and we inched our way homeward as the sun descended.

A lovely kangaroo stew prepared by Ken that night followed by chestnuts heated by Nick. Fabulous day—and we have now seen two serious caves this trip.

Saturday 19th April

Decision today to take both cars south and try to clean up holes further out. About 11 am we were on the big cave track and heading towards 5N3889. We stopped at an enormous claypan to scrounge around for chert and tektites and, on separating from Daryl's car, noted a low acacia near the track. Must be a cave there for the moisture to grow such a large bush, Nick argued, and so it proved. Unfortunately, though, it had been previously tagged by Daryl's group on the day the big cave was being surveyed.

We headed south through open country (everyone calls it 'donga') and started searching. We found K2331 (5N4176) and it being 1 o'clock the others lay down tools, demanding lunch. After lunch, spent sheltering from the relentless wind and sun behind the Cruiser we located K2174 (5N4177) and nearby 5N4178; could not find K2176, then traversed K2175 (5N4179) and K2330 (5N4180), found a new hole 5N4181. Leaving the car in heavy blue-bush we walked to K2342 (5N4182), K2343 (5N4183), 5N4184 and K2344 (5N4185). These two holes were interesting as a black feral cat was sighted going to ground in the contiguous holes, (helping us locate the second), though that did not deter Denis from entering and exploring. Searching for four nearby holes had to be abandoned because of the encroaching dark. The long drive back saw us chance upon 5N4186 before returning to camp in the dark at 7 pm.

A tasty curry prepared by Margaret, Ken and Greg was enjoyed. A successful day though it had been long and worrying: worrying about flat tyres, the late hour and finding the track in fading light.

Sunday 20th April

Silence in camp. The most beautiful sunrise - like a Turner painting. It must have rained gently during the night for everything is wet. The air is so still. The start of the day could not be more different than yesterday when the wind was blowing dust through everything and the Nullarbor lived up to its harsh reputation. Today is a surprise.

My plan today is to slog around all the holes near camp which have been bypassed by the expeditionists. I'm weary of these long southern hauls starting late in the day. I'm weary of the bone jarring and the anxiety caused by traversing blue-bush. Unlike the

others, though, I enjoy the late searching for every possible feature and the night drives back to a prepared meal.

Two cars headed south (not so many holes found to the north). Our group (Denis, Hank, Greg, Christine and I) planned to leave the car by the track for the other car to pick up on their way home. We would abandon it and walk a series of features back to camp. We set out to visit K2180, K2172, K2171, K2170, K2325, K2324, K2323, K2162 and then return to camp. We tagged 5N4171, 5N4172, 5N4173, 5N4174, 5N4187, 5N4188, 5N4189, 5N4190, 5N4191, 5N4192, 5N4193, 5N4194, K2323V, 5N4195, 5N4196, then turned for camp. The walk was long, about 15 km, and tiring, even moreso as the Nullarbor wind had returned. Most features were shallow BH's in CR's in D's, so there was little potential for further exploration. A stumpy tailed lizard and a fierce green snake, provoked by Greg, were our only unexpecteds. Tired today, for the first time.

Monday 21st April

I couldn't get a line to home yesterday, though Denis had got through only a few minutes earlier in the morning. Ros would have expected a call on the weekend. Last night Denis had waited till everyone went to bed then had what he called 'a good wash'. Knowing Denis, it would have been just that.

A warm, blowy night and dusty morning. A dingo right in the camp this morning, probably the same dog we had seen a few days earlier. Strangely, still only small birds are seen - no crows or magpies (though eagles had been sighted North of camp before we arrived). Today's plan is to map holes close by on the E side of the track, and tomorrow's plan is to go down to Koonalda for a serious cave, locate the dumped firewood and replenish the water.

A hot and tiring slog of a day. Annoyingly our group bumped into the other group which we thought had gone further north – annoying because there are so many caves here and I had clearly shown the route we were walking and the holes we hoped to tag. One promising hole, K2238 (5N4199) was found which needed a ladder. Luckily the other group was carrying one. A six metre drop lead to a single chamber - but that was all.

When we arrived back in camp we'd had enough. The hot blustery wind had not let up and our caps were constantly being blown off our heads. Little wildlife was seen—one large bird (we guessed bustard, Hank thought eagle) in the distance and we flushed out one rabbit hiding in a hole.

Ken informed us that it had been 36 degrees C and the wind 40 kph—a tough day for flying. It's a shame the wind blows relentlessly, dust-laden, from the north—straight into our tents, facing that way. A hot, unpleasant night. Got through to Ros on the satellite phone and all is well at home, though quiet.

NICHOLAS WHITE

The ultra-light aloft

We had tagged 5N4197, 5N4198, 5N4199, 5N4200, 5N4201, 5N4202, 5N4203, 5N4204, 5N4205, 5N4206, 5N4207, 5N4208 and 5N4209.

Tuesday 22nd April

Excitement. Today we go to Koonalda Cave. Everyone is up early and eager to go, as the weather is like yesterday, blustery and hot. It's a long drive south, well over an hour, and vehicles are all loaded, except Ken's, which is to collect our wood cache and load up with water from the station.

The drive south reveals clearly the difference in the country—there are smatterings of trees, the saltbush and blue-bush are larger and there are more birds. That day we noticed the crow, magpie, magpie lark, wedge-tail eagle, kestrel, willie wagtail, dusky swallow, welcome swallow, brown falcon, bustard, quail thrush and pipit. Unfortunately, there was no owl this year in the cave. I didn't think I'd ever miss the cark of the crow.

Denis and I rigged the drop into the bottom and all followed. Someone had removed rocks to gain illegal entry to the cave, so we rolled them back, added some more and photographed the change. The expedition moved to the art gallery and photographed. Ken, exploring, found two ancient discarded fire sticks, which he left in situ. The archaeological dig was photographed. The party moved through to the first lake chamber and marveled at the rusting engines and machinery there. Nick had an excellent map of the cave and it showed that a second and third lake led on from the first.

Greg plunged in and sank down over his knees and struggled through to firmer ground. No one else joined him (shame on you, Denis!) so he wallowed back, pulling himself through the mud and water.

After exiting, the caravan moved to Koonalda and watered up, then turned for home, collecting the wood on the way. We arrived well after dark, nerves jangled by the heat (31 degrees C at 6 pm) and the constant jarring. A young dingo was loitering around the edge of the homestead boundary as we passed, and regarded us, unperturbed.

Wednesday 23rd April

Our first cool morning after a few spatterings of rain during the night. Most uncomfortable till the early morning change, and for the first time I slept outside my sleeping bag, and later, under only a blanket.

We'd decided on a fairly straightforward day, driving south to a cluster of holes that could be driven into and walked around. Christine, Greg, Denis and I drove down about ten km and out to near K2196 (5N4230), then walked clockwise on a coolish day—the best yet for walking. We spied little wildlife (a stumpy tail, a few swallows, unidentified smaller birds) and the walk, of about 8 km, was very pleasant. We tagged K2196 (5N4230), K2195 (5N4231), K2178 (5N4233), K2194 (5N4232), 5N4234 (no K#), 5N4235 (no K#), K2179 (5N4236), K2190 (5N4237), returning to camp early for another delicious meal.

Thursday 24th April

An awful night's sleep. Wind and dust and a flapping tent. I slept patchily, possibly because of all that strong coffee Nick plies me with at night. In expectation of many features today I punched lots of tags.

On a hot, dry morning we decided on a reasonably long walk to pick up some outlying holes protected by blue-bush. Two cars would come and one would return early with Greg who was to be the cook that night (of a roast, no less). Ken wanted to come too, as it was too windy to fly and he wanted to check out his aerial accuracy. Greg, Ken, Nick, Denis and I drove past 5N3901 and were stopped by blue-bush. The holes today are widely dispersed, so long striding will be the

NICHOLAS WHITE

The Plain

order of the day. Denis and I lunched inside a cool, air-conditioned hole (a novel experience), and Ken and Greg returned to camp. Ken was eager to return to prepare the plane for tomorrow's flight. He wanted to finish off his western route so locations would be ready for next year if we were to return. Nick, Denis and I set off in the heat and wind to finish the features, Nick grumbling at our insistence on ticking off every single hole.

Very little wildlife was seen (a couple of rabbits) and three nankeen kestrels winging together. Only one tektite fragment was found. We had a late return to camp, the sun disappearing over the horizon as we rejoined the road. A great dinner. A tiring day, because of the heat and wind (16.6 km).

K2212 (5N4238), K2219 (5N4239), K2232 (5N4240), 5N4241, K2221 (5N4242), 5N4243, K2444 (5N4244), 5N4245, 5N4246, K2240 (5N4247), K2241 (5N4248), K2242 (5N4249), K2235 (K2235V), K2236 (K2236V)

Friday 25th April

Anzac Day, but no dawn risers. Best night's sleep yet. Mist again this morning and a thorough scrub up in front of the Cruiser. No easy, obvious groupings of holes so we'll head north and drive out to finish off some westerly features. There is a ladder drop there too, unexplored by a previous group. Nick has decided to stay in camp as yesterday's walk brought serious blisters. Hank decided to fill in time this morning by hammering out a few tags, as we only have a handful left.

Daryl's Prado and our Cruiser headed north and out to the western features. We tagged K2442 (5N4250) then moved to 5N4222, tagged by Daryl and Nick the previous day, though not entered because of an encroaching lightning storm. It looked promising, drawing in a large quantity of water. Denis fussed about, rigging a ladder and handline with much advice from the bystanders, while I just quietly slipped down the hole and found—a cave. A cave with formation (stalactites). A drop, just out of view from the surface, led to a second easy descent, then into a large chamber (for the Nullarbor) about 5m x 4m with a second chamber on the other side of the descent about 2m x 2m. A snake, later well photographed, cast an interested eye on my proceedings. At least two kangaroo skeletons (one enormous, with joey) were intact on the floor. They were intact as the drop was too deep for dogs or cats.

The others entered, and marveled, and the cave was surveyed. Those on the surface spent their time collecting many tektites. The cave dimensions recorded, Greg decided to walk back to camp, about 5 km away, and tag a feature out by itself. He was designated cook and wanted to be in camp earlier than we would be.

The cars then separated, Daryl tagging K2354 and two nearby holes. Denis, Christine and I headed south to K2368 (5N4252) and K2367 (5N4254). We chanced upon a hole near the track and tagged it, only to be scolded over the intercom because it had been documented the previous day, though not tagged. We were bad boys for not checking the co-ordinates!

Darkness fell as we headed for home along an impossibly insignificant track. We had only a brief pause to change a flat tyre, and arrived in camp well after dark, just in time for dinner.

An excellent day: a real cave; a sighting of a brown falcon and a couple of rabbits; and a survey.

Saturday 26th April

A cold night, good for sleeping. Camp is breaking up tomorrow and last night's talk was of packing and preparing. Our day will be spent mending a tyre (we have two flat) then heading off for a few holes. A new bird was spotted in camp this morning—about wren size, yellowish with a red eye. Much time was spent with Nick and Greg searching through the bird books.

A long, hanging-around morning. Denis finished the tyres and people pottered around, disconsolate in the warm Nullarbor wind and swirling dust. Hank wandered off to look for tektites, Daryl, Margaret and Marella drove south to tag K2168 and Christine read. Ken played with his plane.

About 2.30 pm we headed East to locate features further off the road than we'd tried before, and had an unexpectedly uneventful run through grass and saltbush. We tagged K2409 (5N4257), and K2401 (5N4258)—both BH in CR in D—from the car, before being forced, by the blue-bush, to walk to K2389/K2270 (5N4259), which was a most interesting double BH in CR. Unfortunately, it was a 2m deep WYSIWYG.

Being party night we returned to camp and a friendly, though very cold, group of party goers. That night we spent huddled around a generous campfire, gazing at the emptying cups and the clear night sky.

Sunday 27th April

A cold night and an early start, Ken's plane being packed away just on first light. I cooked up the remaining tomatoes and most of the eggs, surprised that they weren't off after sitting in the heat of the fridge for three weeks.

The other parties packed up and threw in and threw out. A group photo was taken. First Hank and Marella pulled out, then Greg and Nick. As the others would be some time we said our farewells and headed north to Hughes, the station at the end of the track.

Not much at Hughes - the remains of a railway camp, bulldozed and bare. We picked around the place and photographed the first trees we had seen since Koonalda. To our astonishment a goods train passed; the longest train I've seen.

We headed south to K2419 (5N 4269), a BH in a CR in a D (as we had been writing for days now) and Denis entered with difficulty. His exit was even more difficult, me hoisting him out on his second attempt. Had that failed I was off to the Cruiser to get a cold chisel and hammer.

We drove across easy saltbush (the easiest of the past three weeks) and bounced out to 5N3888, then 5N3889, which was being referred to as Rabbiters Cave. The other group had spoken about it: the beer bottles outside; the ancient track; the steel ladder inside.

What a surprise! At least a 6 metre drop and a clearly visible ladder below, on which we counted 12 rungs. Surely the others had been down? But only Hank had spoken of it. No convenient tie-off rocks were nearby so the Cruiser was driven over, a rope attached to the bull bar, and down we went. I free-climbed using the rope as a hand line and Denis put on his descending gear. Another real cave, similar to Snake/Kangaroo Cave. Denis had his surveying gear out in a trice and the cave revealed itself to be 8 m deep to the foot of the ladder and to be basically a

single chamber about 13m x 5m, with some inactive formation on the roof and walls. Photographs were taken. Rough maps (cross section and plan) were sketched on the car bonnet.

We had intended finishing off the remaining features in the area (K2420/K2418 and K2417) but Denis persuaded me that discretion was, indeed, the better part of valour so we headed for camp. On the corresponding day last year we had returned well after 9 o'clock on our final night.

Dinner and much talk of dogs. Margaret was unnerved by the nearby howling and barking after a dog was spotted near the 'loo'.

A cold, still night finished by the fire. Today we had seen several rabbits, a Willie Wagtail, a barking gecko, a pair of kestrels and a large black snake, at least a metre long.

Tomorrow we pack up and head down to Koonalda, hopefully having the time to tag a few features on the way.

Monday 28th April

A calm and peaceful morning, rain threatening, excellent for packing. We arose early and were straight into it, one dismantling, with Denis packing and arranging. By 11 am we were just fiddling around, waiting for Daryl and Margaret. To be helpful we did the group tasks filling in the vegetable and fire pits and dismantling the toilet. I guess we'll be coming back next year as the toilet's in the trailer on its way back to Orange.

At 12.30 pm both cars pulled out and headed south to try to camouflage the track into Big Cave. As we headed south again we came upon three camels slowly moving up the road. Margaret jumped out of her car and advanced towards them, followed at intervals by Daryl and us. Eventually they wandered off, the cars said their goodbyes, and we headed off to cave.

We trotted around till after dark, tagging eight features. Interestingly, we came upon an old track heading west from the road, which Denis GPS'ed and we conjectured that it might lead to something interesting – a bit like the track to Rabbiters Cave.

It was nearly 10 pm and cold when we pulled into Koonalda. We lit a fire and cooked tea, yarning and basically having a good time till I crashed at 1 am while Denis was scrubbing up out back. We had walked 15.5 km.

Features tagged: K2249 (5N4270); K2222 (5N4271); K2254 (5N4272); K2127 (5N4273); 5N4274; K2255 (5N4275); K2256 (5N4276); K2145 (5N4277)

Tuesday 29th April

A late start. Good to see crows again, and even a pair of eagles. Light rain much of the day. Lunched in a roadside bay where we spotted the Port Lincoln Parrot. Checked out the windmills at Penong and the doline just before Ceduna. Had a long yarn with the keeper at the Ceduna Fruit Fly Inspection Gate who spoke of Weekes Cave and tagging sea lions with the SES. He reckoned the doline was an in-ground tank and there were many of them all over the place. We were unsure. A late camp, at Shelley's Beach where it drizzled during the night.

Wednesday 30th April

The drizzle continued. This time we didn't miss the Port Augusta turn off and without anything of note (except for an interesting talk with an older local in Kimba) drove through to Orroroo. Walked around this proud little town and ate at an old fashioned hotel, the way we remember them.

Thursday 1st May

Just drove. Early morning drizzle cleared. Camped in a rest stop between Wilcannia and Cobar.

Friday 2nd May

Again noisy trucks interrupted sleep. Viewed birds at the water tank and admired a 1933 Chev sedan on a parked car trailer. Home just on dark.

14th International Symposium on Vulcanospeleology

Preliminary Notice

The International Union of Speleology's Commission on Volcanic Caves holds symposia in a volcanic cave area every couple of years.

In 2010 it will be Australia's turn. A small group, with the backing of ASF and ACKMA, is now planning the event, which is expected to take place at Undara, North Queensland between about 5th and 9th August. A post-symposium excursion is also planned to the volcanic province of Western Victoria (about 11-14 Aug.)

If you're interested in lava caves this is a one-off opportunity to learn more about them and visit the best Australia has to offer in company with some of the major specialists in this field.

You can register your interest now by sending an e-mail to:

ozspeleo@bigpond.net.au

A webpage will be set up soon with more details.

—Greg Middleton, for the Organising Committee 14ISV Undara 2010

GREG MIDDLETON

Wind Tunnel Complex, Undara Volcanic National Park

Equipment Review
Aspiring Enterprises cave pack

Alan Jackson

Cave packs are arguably the most harshly treated items in your collection of 'caving gear'. They get thrown down drops, kicked and pulled through constrictions, stuffed full of rope (sometimes jumped on to get that extra little bit in) and worst of all, dragged for hundreds of metres through crawls on all manner of abrasive surfaces. At least, that's what I do. Considering the way I treat my pack, it is little wonder that I have worn out so many in my short caving career. My current 'sacrifice' is an Aspiring pack from New Zealand. While complimenting a New Zealander is a challenging thing to do and possibly un-Australian, I have to admit that I am impressed.

ASPIRING ENTERPRISES

A robust and well-designed piece of kit

The basics

These are probably best explained by lifting some text off the Aspiring website (www.aspiring.co.nz):

The general features of Aspiring cave packs are:

- Tough 650 gm/sq metre PVC material
- Heavy duty webbings and cords
- Carrying handles and haul loops
- Two 12 mm eyelet drain holes
- Webbing reinforcement at wear points
- Heavy duty rubber base.

The pack comes in two sizes; standard (35 L) and small (15 L). I purchased a standard approximately two years ago and have dragged, kicked and occasionally carried it through a plethora of Tasmanian caves and passages. It has been to the bottom of the deepest cave in Australia (on more than one occasion), tagged along on a few Ice Tube-Growling through-trips, served on over 15 jaunts to Dissidence, dragged along Plague and Pestilence in Mystery Creek Cave too many times to count, taken in the wonders of Kubla Khan and countless other holes in the ground. I even dropped it down a 20 m pitch in Splash Pot the other day! It has been truly tested.

What I like about the pack

The base—the manufacturer likes to point out that the packs have a heavily reinforced base. He knows, as does anyone who's caved long enough to wear out a pack, that the base gets pretty rough treatment and invariably fails first. I can happily say that the first (and only, so far) thing to wear out on my Aspiring pack was NOT the base. In layman's terms: the base is thick, stiff, chunky and extremely solid. It is simply brilliant. Mine doesn't even look like wearing out any time soon.

The shoulder straps—these are wide enough to be comfy without being bulky.

The capacity/size—the 35 L capacity is superb for the kind of caving I do – where lots of rope, rigging gear, food and other miscellaneous items are required. I've never been left wanting for more room. The double draw-cord means that when you don't need the pack's full capacity you can fold the top section in and still get a good closure.

The buckles—they're plastic but haven't failed yet (all my retired packs have carefully placed bits of wire holding straps on where crappy plastic buckles failed under a heavy load). The manufacturer told me that the only one he's seen broken was one that got shut in a car boot!

The foam insert—I wasn't sure about this at first and I thought it was a bit gimmicky, but with time and use I have learnt to appreciate it. It is simply an insert of closed cell foam that sits between the bag's contents and the side against your back. It protects your back from annoying lumps and projections (I'm sure we've all had to repack pointy items that end up poking you in the kidneys—I know I have). The insert is also a handy seat while eating your lunch, providing an insulated pad to protect your backside from the cold, pointy rock. It is obviously also good in the event of an emergency, where a prolonged wait in a cold cave leads to extensive heat loss through your (probably ample) backside.

The elliptical shape—the pack is not round in cross section like most packs. It has distinct long and short axes. This fits nicely on your back (doesn't tend to roll around like a tightly packed round one).

What I don't like about the pack

There's nothing specific that I don't like, but there are a couple of things that I think could be added or done better.

The side handle—any pack without a side handle (for carrying the pack when the passage dimensions don't allow for the usual back mounting) is useless. The Aspiring pack has a large, robust and well placed handle on the same long (wide?) axis as the shoulder straps. It cannot be faulted. However, because the pack is elliptical in shape it means that in some situations it will only fit through a cave constriction aligned one way—i.e. it doesn't fit until turned 90°. Tasmania has a lot of long narrow meanders that require you to remove your pack, shuffle sideways and hold your pack out in front or behind you. The meanders are often narrow enough to require you to hold the pack in line with its narrow axis so it doesn't get snagged, but with the handle only located on the long axis, it makes this very difficult. In this scenario the pack generally has to be held via the top 'haul' point which just doesn't work out to be as energy efficient as an appropriate side handle would. I think it needs two handles.

The foam insert—while I sang its praises earlier, it also gives me grief from time to

time. The insert simply slips into the pack and is not held against your back by anything other than the other contents of the bag. This means that when loading the bag, the top half of the insert can flop over and block the 'hole'. Occasionally, when tossing something into the bag the item finds itself on the wrong side of the foam. What I have found most annoying though, is when feeding a long length of rope into the pack – as you feed in handful after handful the entering rope or your hand catches on the insert, which then has to be pulled back to allow the next handful to go in. I've developed a few tricks to get around this problem but I think that ideally a couple of little straps, clips or velcro could be added to hold the top two corners of the insert in place (which would obviously have to be removable so you can still take it out to sit on or clean).

The haul point—rather than the traditional small webbing loop or metal ring located at the very top of the pack you see on nearly all other packs, the Aspiring pack has two longer loops sewn about one third of the way down from the top. Each side is stitched to form three loops which allow you to attach your haul line at different locations (depending on how full the bag is). Initially I thought this was a waste of material (extra weight also) and added very little functionality. I haven't found anything to convince me that it is in fact a better way to do it, but equally I haven't found it at all annoying or counterproductive. The jury is still out on this one.

Other things

My pack recently 'failed' in the seam stitching where the tops of the shoulder straps attach to the main pack (not where the straps are sewn on, which would cause the straps to come away, but along the bag material seams that run adjacent to the shoulder strap attachment point).

These are the points where all of the weight of the pack is focused when carrying it on your back. The problem was quickly and cheaply remedied – I turned the pack inside out, took it to my nearest shoe-repair man and got the two 50 mm sections of failed stitching restitched (for $7.50). Good as new! Importantly, when these points failed, it wasn't catastrophic failure. I noticed the first one had gone, continued abusing it for a few more trips, noticed the other one had gone too, continued abusing it some more and eventually got around to fixing it after ten or more trips. Despite the initial failure, the stitching was good enough to only fail an extra millimetre on each successive trip.

Price—the large pack retails at NZ$96 (about 50 cents Australian!) It's not a cheap pack but is far from expensive. Considering the quality of the pack and its longevity, it is a very reasonable price.

A quick tour of various internet sites suggests that similar products from Petzl, Meander, Warmbac and MTDE sell for similar or higher prices (and usually have to come from far-flung corners of the globe, incurring higher postage costs).

The manufacturer is a small (almost local!) business who is proud of his products—Aspiring is not some monstrous company with a marketing departing and executive salaries to feed. You can send an email to the person who runs the business (Lyndsay Main) and provide him with feedback (which is acknowledged, discussed and integrated into future designs).

In conclusion

It's a bloody good pack and I'll be replacing it with another one of the same (if and when the first one ever wears out!) I'm even thinking of getting one of the smaller ladies' packs just in case I want to visit a mainland cave one day.