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FUSSI

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Flinders University Speleological Society Incorporated

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Front cover photo: Cave Park Cave Doline. Photographer: Kevin Cocks.

WINDOWS TO THE PAST

Jo Sullivan

This article is the first of a continuing series called "Windows to the Past". The title refers to the notions that when a cave forms and starts to accumulate material from the surface, it is in fact recording a snapshot of the ecology (both chemical and biological), of the world in and above the cave. The accumulated material allows us to look back in time and thus provides a "window to the Past". When and how a cave forms as well as the length of time that the cave is accumulating material defines what the cave will show us.

The series will focus on current and past palaeontological research into cave deposits, with particular focus on Australia. Readers will be introduced to the diverse extinct and extant faunas and flora found in cave deposits, as well as the processes that lead to and influenced the deposition and preservation of fossils in caves.

As a result of a number of inherent characteristics, caves often provide excellent locations for the accumulation and preservation of fossil material, Due to these characteristics caving and palaeontology have had a log and connected history, both in Australia and around the world.

Caves containing vertebrate fossils occur across much of Australia with significant and rich deposits occurring in Southern Western Australia, the Nullarbor Plain and at Australia's two World Heritage Fossil Mammal Sites at Naracoorte in Southern South Australia and Riversleigh in Northern Queensland.

The earliest records identifying the presence of vertebrate fossil material in Australia date back to 1831, when Major Sir Thomas Mitchell, who was leading an exploration trip to the west of New South Wales, stopped in the Wellington Valley. Whilst there Mitchell and local colonist George Rankin, spent time exploring the many cave of the region. Rankin had previously collected bone from the caves (which turned out to be those of the modern wombat, kangaroo and native cat), and had sent them of to England for examination, as was the practice of the day. Mitchell's diary reveal the humorous manner in which the fossil material was first discovered.

> The pit (Breccia Cave), had first been entered only a short time before I examined it, by Mr Rankin, to whose assistance in researches, I am much indebted. He went down by means of a rope, to on e landing place, and then fixing the rope to what seemed a projecting portion of rock, he let himself down another stage, where he discovered, on a fragment giving way, the rope had been fastened to a very large bone, and thus these fossils were discovered.[1]

The bone in question turned out to be a gigantic bird femur, probably of the family Dromornithidae.

Part 1: An Introduction to the Accumulation of Fossil in Caves.

In caves, fossil material can be found in the rock that forms the cave, exposed on cave floors and buried sediment accumulated within the cave. The consistent temperatures and humidity found inside many caves as well as protection provided against weathering from sun, wind and rain provide particularly good conditions for the preservation's of bones.

In limestone caves there is the potential for both vertebrate and invertebrate marine fossil material to be found in the solid rock structure of the cave. This is a result of the marine origins of limestone, In the limestone's of the South East of South Australia for example, as caves have formed, fossilised invertebrates such as molluscs, bivalves and bryozoans as well as marine vertebrates such as sharks and whales have become exposed. These fossils often become so exposed that they dislodge from the cave structure. When this occurs they will be found on or in the sediment of the cave floor.

WINDOWS TO THE PAST

Jo Sullivan

Fossils that have an origin different to that of the rock that form the cave can accumulate in a number of different ways. These include the natural death of cave dwelling animals, natural trapping, and accumulation by scavengers and carnivores as well as post death transportation of bones by water and wind.

The type of entrance a cave has strongly influences the types of fossils that will be found. Caves with shelter like entrances that allow easy access are likely to be used as dens or lairs by carnivorous and scavenger animals. Other cave dwelling animals will also inhabit such caves.

Solution tube entrances accumulate animals by trapping the unsuspecting animals that fall in to their eventual if not immediate death. Often due to the narrow nature of the solution tube, animals will be able to slow their fall to such a degree that they arrive at the bottom of quite deep caves, relatively unharmed. Solution tube entrances tend to have a bias towards accumulating fast moving animals, this is due to the fact that a slow moving animal is more likely to see and have time to react to the sudden appearance of a hole. This bias leads to less variety in the fossil assemblage found in these types of caves and a particular bias towards the entrapment of hopping animals in Australia. The small size of solution tube entrances also tends to prevent the entrapment of larger size quadrupedal animals. Cave dwelling animals are also less likely to inhabit solution tube caves.

Entrances forming roof-windows tend to lead to less bias in accumulation of fossils that the previous two cave types. This is due to their ability to trap both large and small animals as well as their potential for habitation by cave dwelling animals. Animals falling into caves with roof-window entrances are less likely to be able to slow their fall, and are thus more inclined to be injured or killed at the time of trapping. In the next issue I will look at the types of animals which live and the utilise caves.

Remember:
If you discover bones while caving, note your location, sketch or photograph the bone if possible and leave. Do not touch, move or remove any bone material nor disturb the site in any way. Beside the fact that most fossils are extremely fragile and require treatment prior to removal, the location, placement and orientation of the fossil are all critical pieces of data needed for an accurate interpretation of the deposit. Your presence also has the potential to cause chemical and biological contamination of the site. Report all bone sightings to the trip leader. If anyone is interested in participation in a fossil excavation or working on the bones of large extinct marsupials at Flinders University please contact the author.

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[i] Rich. P. V., G.F., van Tets, & F., Knights (eds). *Kadimakara. Extinct Vertibrates of Australia.* Princeton University Press. New Jersey. 1985. p. 19-20.

SECRETARY'S REPORT

Things were generally quite and uneventful in the secretary's office this year!

- Executive meetings were held and well attended, when they were required.
- SRT training days were held at the Flinders University Footbridge.
- Caving trips included a trip to Dreamworld, Corra Lyn caves, Yorke Peninsula and two days in the lower Flinders Ranges. Attempts were also made to cave at Yarrangobilly Caves in NSW, however the trip became another victim of the devastating summer bushfires.
- The club participated in all the Clubs and Societies fair days and attended associated meetings.
- The Christmas Party was held at Kirsty's house. Special thanks to Kirsty!

Jo Sullivan

EQUIPMENT OFFICERS REPORT

This year the club brought four replacement light globes for some of the Petzel Zooms. We have investigated purchasing some steel screwgate Karabiners, but just haven't been to the treasury to collect them. Mavis has been active and threw a new, only been used once, screwgate karabiner down the entrance pitch of Maires cave. She made sure that it bounced off a couple of rocks on the way down before landing on the rock pile on the bottom. Since this, it has been reported that Mavis has taken to her usual activities concerning motor cars and keys. Not content with causing a flat tyre on the same trip as the karabiner throwing incident, but she also took the keys of the cottage from Cory and hid them in the bottom of his travel bag. It is now known that Mavis is masquerading in a dog suit at Kirsty's house.

We still need to get rid of stuff that we no longer use. A garage sale on campus might do the trick.

Equipment Officer.

LIBRARY REPORT

Lots of club magazines came in and our secretary has been doing some much needed cataloguing and filing. However we still have a lot of catching up with some publications from O/S re missing volumes and some minor address problems with some local clubs sending stuff not care of 'Clubs and Societies' the result of which is the magazine is lost into the bowels of the university and never seen again.

Currently missing from the library is our Nullarbor folder. It contains information relating to caves and travel details for caves on the Nullarbor. Can those members who were planning a trip to the Nullarbor in 2001 please go through their filing cabinets and have a good look for it.

For those new to the club, the library is located in the Clubs and Societies store room in our section of the compactus. Let the librarian know that you want to borrow something. The length of borrowing time is usually one month, from meeting to meeting. If you want to plan a trip then the library is the first port of call as it has info on cave maps, permit forms, what gear is required to cave in certain caves or areas and information on past club trips.

Ghost Writer.

FOR SALE
AUSTRALIAN KARST INDEX

The book that has it all and doubles as a door stop! Not only does it have a fabo photo of a straw on the front cover, but this is the place to go to find out about your favourite karst area. Did you know that Corra-Lynn Cave (Y1) is also known as Correll's Cave and Curramulka Cave. That it is 13kms long give or take 400 metres and is important in terms of our fossil record? (Some of Australia's oldest fossils have come from this cave.)

The book is a great read just for the cave names alone: Hash Only Cave, Gormenghast, Hairygoat hole, Anticlimax, Well it Wasn't There Last Year Cave, Devils Earhole, Grotty Guts Cave and Sinn Fein Pothole. Would you go into a cave known as Long drop cave or Dead Sheep Cave? Find out all about it and heaps more.

ON SALE NOW FOR $10.00

See Clare Buswell at the next meeting.

FUSSI DOES NARACOORTE

Part 1: Beekeeper's Cave

by Tri Phuong

It was a multi-flavoured, motley crew that descended upon Beekeeper's Cave near Naracoorte in the early afternoon of Saturday April 26 (after lunch, of course). Expertly led by Clare and Kevin, the team consisted of an auspicious American, adventurous Adelaidian, brazen Brisbanite, curious Canadian, luscious Latino and sassy Sydney-sider. As a first time fossicker, it was humbling and exhilarating to be lowered into the beckoning, black, narrow orifice. Once submerged inside the darkness, one became acutely aware of the cool, peaceful ambience. A womb-like, tomb-like comfort settled and whispers resonated around the chamber like respectful prayers, a breeze through a holy, underground temple. One by one, the Earth bound aliens materialized via the luminescent shaft of sunlight, a conventional teleporter between contrasting realms.

Eight souls then set off on a pilgrimage of discovery. Ever-descending, spiralling, rocky paths connected expansive caverns. Surreal, sublime, subterranean galleries with paeleolithic snapshots every which way the head should turn. A phantasmagoric fossil-album of world history. Countless little off-shoot holes provided ample opportunities to explore and challenge. Crawling on all fours, twisting/turning, swearing/cursing, slithering and contorting were the name of the game in this forgotten playground. Fossils galore here; the cave seemed to define a coastline of yesteryear. Sea-shells, sea-shells and more sea-shells everyway you glanced, plus a spectacular gravity-defying lone helictite, well spotted by Kevin. The underground geography was especially impressive – two spacious parallel caverns, each at least 50m long, connected by a few tight passages which everyone managed to squeeze through.

All too soon, it was decided to return to the surface. One by one, the intrepid explorers were reborn into the Terranean world. The disappearing shard of golden sun on a ripening, rusting pink sky was the perfect background to a group photo. Satisfied, cheery grins emblazoned on all eight faces. Slightly bruised and battered we all returned to camp for the next phase of Spleleolithic tradition and hospitality. Clare had cooked up a storm. Dining around roaring open fire and under millions of sparkling stars, feasting on a hearty meal and sharing intoxicating conversation, it was the perfect primal/tribal end to a wonderful day. Shortly afterwards, a sortie set forth back to Adelaide so a member could catch a plane back to Sydney first thing in the morning while a contingent stayed to further explore on day two.

Part 2: Cave Park Cave

By Adrian Hekel

The saga continued... After bidding farewell to most of the team after tea, Clare, Kevin and Adrian were soon to discover why Naracoorte always gets a special mention on the weather forecast, being one of the coldest spots in SA. Which turned out to be a big plus however, as most the campers descended to the log-fire to share many a story, Clare's chocolates and one particularly fine drinking game. It went like this – you'd go round the circle counting to twenty-one, only each time you went round someone would replace one of the numbers with an object or a new rule and then you'd start counting again, with the substitution. For example, instead of saying 'three' you might have to say 'fluffy duck'. I'll let you guess the rest.

Part 2: Cave Park Cave

By Adrian Hekel

Anyway, as much fun as Saturday night was, we were still keen as mustard to do the caving thing, and so headed in convoy to a remote farmhouse early Sunday morning. With unsurpassable charm, we convinced the landowner of our mission to seek and discover what caves lay beneath their farm. Map and compass in hand, Clare seemed confident and enthusiastic about finding Cave Park cave. However, maps can be cunning creatures, and it wasn't 'til after an hour of scouring every pothole, nook and cranny of one particular paddock that we noticed the large opening that was the cave entrance.

Quite a majestic entrance I thought, apart from the car body in the middle, possibly the result of an ill-fated attempt at rigging off a tow-bar. A large tree also obscured the opening. Maybe this was why it was so hard to find. Getting in proved challenging, though perhaps a tad easier than Beekeeper's. Rigging required a lot of creativity, Clare and Kevin doing a wonderful job of securing the tapes around some precarious looking rock formations. Although the entrance was big, the surrounding rocks looked rather unstable so the ladder went down a small opening to one side, descending about 16 feet to the base of a well-lit cavern which was continuous with the larger opening.

All abseiled down and the caving began, channelling through smaller and smaller spaces. Kevin found the going a bit tight and opted to head back and explore the other side of the cave's entrance. Always being one to appreciate the chance to get one's 'fingernails dirty', the discovery that Clare and I were crawling on bat shit didn't faze me as much as it might have. Up we went, down we went. A little to the left, a shuffle to the right. All the time on hand and knees, sometimes more slithering than crawling. I picked up a few navigational tips from Clare, coming to realize to value of marking out where you've been with cairns, which you knock over on your return journey, so that others don't use them and think that this is the way on. I found claustrophobia & disorientation was never an issue until, on the way back I took a wrong turn and realized my mental map of the place wasn't quite spot on. 'I'm gonna die' zipped across my mind for a microsecond, but being with someone as experienced as Clare I was sure deep down that I'd live to see the light of day. And I did.

So in a nutshell that was Cave Park cave. Like Beekeeper's, quite a few fossils here and there, though unlike Beekeeper's, no great caverns, a bit more of a squeeze and presumably lots of bats. All in all, a marvellous weekend. Special thanks to Clare and Kevin who so patiently set up the rigs and ladder, showed the ropes to us less experienced cavers and prepared fabulous dinner for Saturday night.

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WHAT'S ON FOR THE NEXT FEW MONTHS

JULY 12-13 **Corra Lynn** Come for one day or two days of great caving and fun. Staying overnight at the bottom of the York Peninsula. Joe Sullivan and Kirsty Kitto co-ordinating. Contact them by July 9th to book your place and help them organise the gear. Knee pads a must. Joe Sullivan: 8322 6374. Kirsty Kitto: 8132 0091

Tue JULY 29th 4pm Geoff Harrison. meeting Rm Union Building. **Planning meeting** for those going to Tasi.

Sun Sept 7th 10.30 am. **SRT and Abseiling practice.** Foot Bridge at Flinders Uni. Phone Joe to let him know that you are going to attend by Wed 3rd Sept. Joe Sullivan: 8322 6374.

Oct Long weekend **Flinders Ranges:** A great weekend of caving and walking in the lower Flinders. Lots of speleothems to photograph and caving skills to learn. A must for those going to Tasi: Contact Kirsty: Kitto: 8132 0091. Bring a tent and all your camping gear.