

“Those South East Bones” Expedition October 2022.

So what is the connection between ancient fossils, uranium and fine wines? On a superficial level they all interconnect at Naracoorte and for three days members of the Club considered all three.

The Caves at Naracoorte are World Heritage listed and having an opportunity to explore the caves in the company of Dr Liz Reed, (SA Museum and Adelaide University) a vertebrate palaeontologist with a specific focus on the South East Caves, was a unique experience.

We gathered at The Avenue Inn in Naracoorte on the Friday evening for a welcome from Thomas Shortt, manager of the National Park, followed by an introductory presentation from Liz outlining the overall structure and uniqueness of the cave system, and fascinating developments in her research into the age of the cave system.

The exploration and discovery of the system has evolved over many years, with early reports and photos from the Rev Julian Woods in the 1850's and 1860's. Then 100 years later, in 1969, the discovery of the Victoria cave greatly expanded the known cave complex and, with it, access to countless fossils. We were honoured to be joined on the expedition by Grant Gartrell, one of the cavers who made the breakthrough into the Victoria Cave, providing first hand recollections of this discovery and insights into caving lore.

Saturday morning started with a Roof Top walk and orientation, avoiding the showers, before entering Blanche Cave, the first cave discovered by Europeans in 1845. This had been used as an early “community centre” and evidence of damage and mistreatment was clear, from an era when collecting and removing items of interest was the norm, rather than preservation in situ which we expect today.

The Bat Observation centre is a fascinating and compelling component of the Park, where an impressive infra-red camera array allowed us to view hundreds of thousands of critically endangered southern bent-wing bats roosting in the caves. They appear to be a healthy colony, but changes to diurnal and seasonal environmental rhythms impact their viability.

We ventured below ground again into the impressive Alexandra Cave, where the three main chambers contain an array of speleothems (stalactites, stalagmites and columns) which are easily accessible. Then back into the daylight, oppressive clouds and potential rain, and time for a quick side trip to Bool Lagoon, which was reasonably full, but apart from the cacophony of frogs, and trilling reed warblers, a bit low on bird life.

Sunday threatened to be stormy but didn't disrupt our plans for the caves. A visit to the Wonambi Fossil centre to view a recreation of what the area might have been like 200,000 years ago, as well as demonstrations of how the caves were formed and animals entered and became the source of so much research for palaeontologists today.

We then transferred to the laboratory and were each given a bag of earth collected from the Victoria Cave and asked to sort it. From a bag about the size of 2kg of sugar numerous bones emerged; countless jaws of tiny marsupial mice, ribs and vertebrae from all major vertebrate groups, as well as knuckle bones from larger marsupials. Two hours of intensive work was barely enough to sort just this small sample of material, with Liz Reed providing identification and surprise as new items emerged.

The final visit was to the Victoria Cave and the magnificent fossil chamber. With Liz Reed and Grant Gartrell providing a compelling and entertaining historical and scientific tour of the extensive

chamber we were disappointed to have to leave after 2 hours. Ongoing research continues to provide new insights and discoveries, which is where the uranium comes in. Liz Reed's latest paper (September 2022) pushes back the age of the caves from about 500,000 years old to over 1 million years. Using a dating technique based on the decay of uranium to lead, Liz's team has shown that the caves formed much earlier than originally thought, although the timing of the cave "openings", allowing pollen grains, insects and animals to enter, has been an on-and-off affair over shorter periods.

Leaving only the fine wine to explain. Once we left the caves we were treated to an enjoyable wine tasting experience with four Wrattenbully wine makers, showing a fine collection of wines all imbued with the essence of the local terroir, and presumably a few fossil remnants.

The expedition wound up with a dinner at the Bushman's Arms hotel, at which point the heavens opened and 20mms of rain fell in 20 minutes. Thankfully it held off for long enough not to interrupt the program.

A thoroughly immersive and comprehensive weekend, for which enormous thanks are due to Dr Liz Reed for her enthusiasm, knowledge and energy which kept things rolling forward. Also thank you to Grant Gartrell for his generosity and humour in sharing his experiences and ongoing enthusiasm in all things speleological.

We were well looked after by the staff at The Avenue Inn, and at the Caves Café who provided coffee and lunches around our flexible timetable. Dinners at the Pearl Continental and the Bushmans Arms reminded us all of good regional hospitality.

Mark Mackintosh

Expedition Leader.