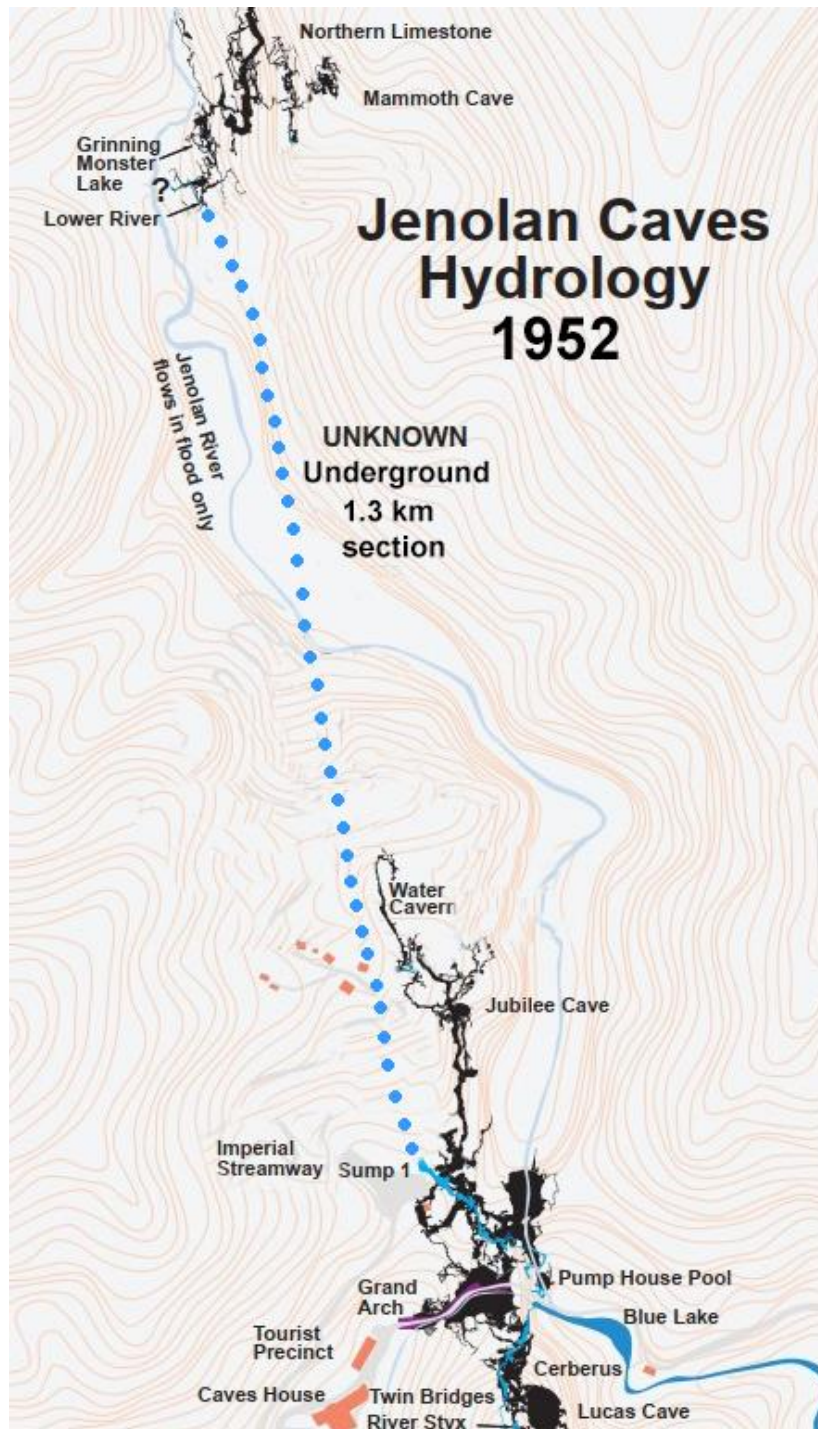


AUSTRALIAS FIRST CAVE DIVES

Compiled by Rod OBrien

For decades' cavers at Jenolan Caves, New South Wales dreamed about what wonders were to be discovered in the 1.3km distance between where the Jenolan River disappeared downstream in Lower River, Mammoth Cave (at the time the southernmost part of the cave), and Imperial Cave where the river re-emerged into the show caves. At this time there were no caves in between that connected to the underground river. Denis Burke (the father of cave diving in Australia) attempted to free dive the imperial sump in 1952 but was unsuccessful.



In 1952 a group of cavers from the Sydney University Speleological Society (SUSS) consisting of Denis Burke, Fred Stewart and Ben Nurse investigated the possibilities of exploring the Jenolan River system using diving equipment. They would try diving upstream in the Imperial Cave sump and downstream in Lower River, Mammoth Cave.

There was much discussion on what type of equipment would be needed. Many people suggested cylinders of compressed air with a regulator attached. The group decided that

1. The regulators available could not supply enough air
2. The cost of the equipment was too high
3. Several cylinders would be needed for redundancy

As only limited funds were available, they decided to make their own surface supplied diving system. A WW11 gas mask was used to fit over the face. Air was supplied to this through a length of ½ inch hose connected to an old pair of foot bellows.

A diving trip was planned for the 6/7 December 1952. Denis Burke had been granted the honours of the first dive. Unknown to anyone, Fred Stewart had wanted to be the first diver so he put together some dive gear consisting of a WW11 gas mask, a length of garden hose and a hand bellows to dive the Imperial sump the weekend before the scheduled trip. John Bonwick assisted Fred Stewart to carry the gear down to the sump. Fred tried several times to use the equipment but the modified gas mask kept flooding and he abandoned the attempt.

The team joined a SUSS Jenolan Trip on the 6/7 December 1952 to dive the upstream Imperial sump. On the Saturday evening Denis Burke reconnoitered the sump using just a face mask to get some details for the upcoming dive the next day. Denis found the distance from the dive station to the river resurgence was greater than the length of dive hose they had brought so this sump had to be left for another day.

On the Sunday morning a party of 5 including Denis Burke, Ben Nurse and Fred Stewart carried the diving equipment to Lower River, Mammoth Cave. Denis Burke was again volunteered to do the honours. Whilst the dive station was being set up Denis swam downstream to get a feel for the dive. At the far end of the lake he encountered a muddy slope that extended to the ceiling. He dug some footholds out of the mud and upon reaching the top found a small hole. Some rocks were cleared and Denis squeezed through into a small chamber with a passage leading off. He had just discovered the gateway to the southern section of Mammoth Cave and Slug Lake.

When Denis returned, he found the dive gear was ready. He spent the next 30 minutes diving in the lake testing the gear and looking for the downstream underwater passage before the cold water forced him out. During the course of the dive he concluded that several improvements were needed with the dive equipment. Denis failed to locate the underwater passage but thought that it could be next to the mud slope.

The dive in Lower River was the first cave dive in Australia.



Over the next two months the dive equipment was modified. A side valve was added to the gas mask so that when the divers head was above water, he could open it to breathe and the foot bellows could be stopped. 20lbs of lead weight was added and a waterproof suit. A buzzer system was installed for signalling and a waterproof torch was made out of 2 motorcycle batteries and a 6-volt car headlamp.

A SUSS trip to the Imperial sump was made in February 1953 led by Fred Stewart. It included Denis Burke (diver) and Ben Nurse. Denis Burke negotiated the first stage of the sump and entered a small sealed cavern. The underwater passage was spacious and about 1m below the water level in Imperial Cave.

The “waterproof” suit turned out to be more trouble than it was worth. When the water occasionally poured in it was unable to escape. This made it very hard for the diver to walk around.

They returned to Imperial Cave on a SUSS trip 28/29 March 1953. A party of 7 led by Fred Stewart including Ben Nurse, Brian J OBrien, Denis Burke (diver) and Jeff Clyde (dive tender), carried the surface supplied dive gear down to the Imperial sump. Denis Burke did a short test run to tweak the gear and at 630pm he was ready to go. Denis started walking upstream along the riverbed. Fred Stewart and Brian J OBrien worked the bellows. Denis’s exhaust bubbles soon disappeared as he entered the underwater passage. He continued on until signalled to return as he had run out of dive hose.

The team had a rest, something to eat and added an extra length of dive hose. Then at 1am Denis Burke re-entered the Imperial sump. He walked upstream until signalled to return. Again, he had reached the end of his dive hose without getting through the sump to the other end.

Some modifications were made to the dive gear before the next trip. The dive hose was increased to $\frac{3}{4}$ inch diameter and the foot bellows pump was replaced with a proper dive pump.

A further attempt was made in April 1953. Denis Burke would use the dive equipment to get to the first air bell. Otto Gram and Bruce Cobbin would freedive along the hose to join up and they would leapfrog their way along the passage. Otto was not wearing goggles and with the lack of light he kept hitting his head on roof projections. They wisely abandoned the attempt.

The failure of the last trip indicated that for the next attempt they would have to have two sets of diving equipment permitting two divers to work alongside each other. The excessive sapping of energy by the cold water will be avoided by the use of “frog” suits. They contacted Mr Johnson, a retired Deep-Sea Diver who supplied diving gear to pearling luggers and harbour divers. Mr Johnson suggested a two-man diving pump, summer diving woollies and some hand signals to use in blacked out conditions which they had expected to find in the sump.



A SUSS trip on 6/7 June 1953 saw a team including Denis Burke (diver), Ben Nurse (diver), Otto Gram, Bruce Cobbin, Fred Stewart and Adelie Hurley (photographer), attempt to get through the upstream Imperial sump. On this trip they replaced the foot bellows with a proper diving air pump. The dive was plagued with mishaps including an anxious moment when a kinked air hose forced Denis to surface in a small air chamber. The dive was wisely abandoned. This was the last attempt using surface supplied diving equipment and the last under the banner of SUSS.

The cave divers joined the newly formed Sydney Speleological Society (SSS) and continued the cave diving exploration. Training in the use of aqualung techniques was commenced immediately. Michael Calluau of the Underwater Explorers Club (UEC) was consulted for the logistics to do the dive and Keith White and Michael Calluau ran the training. Michael was a dive partner of Jacques Cousteau before he immigrated to Australia in 1952. The UEC and Underwater Research Group (URG) supplied the equipment and divers. Specialised equipment was supplied by Don Linklater (UEC). Don had started making wetsuits and Les Tattersall tried out the first one. The UEC was an affiliate of the Underwater Spearfisherman's Association. It folded around 1956 and many of its members joined the Underwater Research Group.

Originally 10 speleo's were to be trained but 4 dropped out as the training became more demanding. Russell Kippax and Owen Llewellyn were selected for more advanced training with Russell selected as the lead diver.

Training was mainly in Clovelly ocean pool but some diving was also done in Enfield Pool to test the efficiency of the "AFLOLAUN". The more advanced training involving blacked out masks and buddy breathing took place amongst the wharf piers of HMAS Platypus, Neutral Bay and a freshwater creek in the Royal National Park. Training was to continue through winter to discourage those who might not have the commitment to follow through with a real cave dive. Their trainers needed to be sure that they could handle any situation they might face in a cave dive. So, you might be cruising along the bottom when a hand would suddenly appear and rip off your mask. After a minute it would be handed back and the observers would check that you could handle this and clear the face mask of water without any obvious signs of panic. Another exercise had the divers swimming along a weighted line through kelp and rocks with a blacked-out face mask. It was found that some perfectly competent open water divers are not at all happy in zero visibility conditions.



Ron Wardrop built a device called the "AFLOLAUN", Apparatus for laying out line and Underwater Navigation. The communications wire it would roll out would be the diver's safety line. The first "AFLOLAUN" was made by UK cave diver Grahame Balcombe. Grahame used it for the first time at a river resurgence at Keld Head in the Yorkshire Dales in Easter 1945.

It was decided 6 divers would be used. Two would push the sump. The next two would follow a short time later and the remaining two would take the role as rescue divers.

Each diver received his own aqualung. These were reverse engineered copies of the Jacques Cousteau/Gagnan regulator Michael Calluaud had brought over with him. The Australian version were called the "Lawson Lung" developed by the Underwater Spearfisherman's Association (USFA) and the "Improved Lawson Lung" developed by the URG (also an affiliate of the USFA). They wore a Heinke "Delta" cold water suit (drysuit) with frogman mask and fins. Also carried were a torch made of a motorcycle battery and sealed beam car headlamp, compass, knife and depth gauge. They would also carry a Karabiner on a lanyard to clip onto the "AFLO" safety line.

A trip was organised for the dive by the Sydney Speleological Society (SSS) on the 9/10 October 1954. The team included joint trip leaders Denis Burke and Ben Nurse, Ron Wardrop (communications), Harry Rowlands (SSS diver and lights), Dr Lee (medical officer), Jim Tasker (constructions), Wally Dove (SSS, built dive platform), B. Mason (SSS photographer), Russell Kippax (SSS lead diver), Michael Calluaud (UEC /URG diver), Keith White (UEC/URG diver), Owen Llewellyn (SSS diver), Dave Roots (SSS diver), Rod McNeill (UEC diver), Myra Llewellyn (Hon. Sec. of the Sydney Rock-Climbers Club), Grace Aird, Ruth Russell, Dorothy and Alf Lenmonth, Stan Pearce, Max Thompson, Arnold Fleischmann, Don and Lois Linklater (UEC divers), Ian Driscoll, Mick Shanahan (UEC diver) and Les Tattersall (SSS diver).

On Saturday 9 October at 1050am, Russell Kippax and Michael Calluaud entered the water and quietly disappeared. Kippax carried the "AFLO", and Calluaud carried the telephone. Two minutes later, Keith White and Owen Llewellyn fixed their karabiners to the "AFLO" safety line and also quietly disappeared.



The two rescue divers were Dave Roots and Rod McNeill.

The quiet spell was suddenly shattered by the return of Calluaud. "I lost him, I lost him" he said. "ze mud, ze mud. It is too thick I could not see him so I came back". He had become disorientated and discouraged in the muddy streamway. After nine and a half minutes Owen Llewellyn returned to collect the telephone and disappeared again upstream. A few minutes later we heard from the party beyond the sump. The sump was about 36m long and surfaced into walking streamway passage. This continued for about 200m until the river sumped again. The party spent an hour and a half exploring the new cave before they were recalled. This new cave was called Mudd Cave.

This expedition was the first time SCUBA equipment had been used cave diving in Australia.

Later that same afternoon a party of 10 divers traversed the sump and further observations were recorded.

Those divers included Don and Lois Linklater (UEC divers) Authors Note: first cave dive by a female in Australia, Rod McNeill (UEC/URG diver), Keith White (UEC /URG diver), Mick Shanahan (UEC diver), Harry Rowlands (SSS diver) and Les Tattersall (SSS diver) who dived last.

Upon arrival Les Tattersall had found that everyone except for the telephone operator had disappeared into the new cave with all of the torches. He had to remain at the sump until they returned.

During the return dive Rod McNeill, who was in front of Lois and Don, got stuck on a stalactite that wedged between his two back mounted dive cylinders. Rod and all those behind him could not move forward for some time. Both Don and Mick's lamps had gone out leaving them in total darkness. Eventually Rod broke free and all returned safe and well. Lois had torn her dive suit.

When all were back at the sump Rod stated "I went through something there". Don thought this was stating the obvious but Rod went on to say "I have been claustrophobic since I was a child".

Rod freed the stalactite from between his cylinders and gave it to Lois as a souvenir.



On Sunday 10 October 1954 the dive was led by Russell Kippax followed by Dave Roots. Dave had brought along a 150ft length of 1inch cotton old climbing rope that he would place through the sump. This would help the other divers and aid in the recovery of the telephone line. Dave dived in jeans and a woollen jumper with a canvas abseiling jacket over the top. Other divers included Owen Llewellyn, Michael Calluau and Keith White.

After all the divers returned to the base platform, Russell Kippax had the job of removing the telephone cable from the sump. This involved lying on the bottom and winding the cable

back onto the drum of the "AFLOLAUN". This was a long and tedious job. At one point, Russell became aware he was becoming jammed between roof and floor amongst several columns and stalactites. This must have been the same place previously "discovered" by Rod McNeill.

During a normal caving weekend on the 13/14 November 1954 at Jenolan it has been reported that Dave Roots and Harry Rowlands freedived the upstream imperial sump. To the Authors knowledge this incredible feat has never been repeated.

Forty years later Rod McNeill rang Don Linklater to tell of his genuine sadness upon hearing the news of Lois's passing away. Don's daughters arranged a reunion. Unbeknown to Rod, Don's daughter Sandy took the stalactite along and returned it to him saying it was now with its rightful owner.

I would like to thank all the people who contributed to this article.

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