



A HISTORY OF ISS “60 years in the making”

by Dave Dicker (with updates by Bob Kershaw)



The Wyanbene Balloon Expedition in the early 1970's

Club members are L to R: Sid Roach (SRGWA), Bill Bevan, Michael Harraway, Kevin Hanrahan and Chris Edwards

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INTRODUCTION

When our Editor of the Newsletter asked me to write a brief history of ISS, I envisaged an article a few pages long. However, as the idea grew, I realised that the story couldn't be told in just a few pages. Nevertheless, my input has turned out to be much less than I expected, as many specific aspects of ISS history have already been written up in trip reports. These have been included and referenced appropriately.

It is not the aim of this article to trace the history of caving in New South Wales, or to trace the wider history of the Illawarra area. However, to appreciate the background, and understand the history of ISS, it is essential to touch on both subjects.

Australian Iron and Steel (AIS) commenced setting up operations at Port Kembla in the late 1920's - probably not in a very propitious economic climate - but they survived. The result was that the Illawarra changed from a sleepy coastal town (with a few collieries) to a bustling city with a large cosmopolitan population. The Second World War further boosted the importance and output of the Illawarra, and the immediate post war years further boosted the population. By the law of averages, there must have been a significant number of people living in the Illawarra who were potentially interested in caving. The Tasmanian Caverneering Club was formed in 1946, and the Sydney University Speleo Society in 1948, so the stage was set.

IN THE BEGINNING

The following article, written by Lloyd Robinson, appeared in the Third Annual Report, April 1966, and ISS Newsletter Vol 1, No 10, 1973.

"In 1944 / 1945 a small group of young men became interested in exploring limestone in the surrounding districts (Illawarra), as a result of an article on cave explorations in Europe and publicity given, led to the formation of the first caving club in Australia - namely TCC in Tasmania. After the end of the Second World War in Europe, French speleologists became very active and much worldwide publicity was given to their activities. No doubt at odd times prior to 1944, people from this area visited non-tourist caves, but this was the first time anything on an organised basis had been attempted, even if only elementary by today's standards.

Bungonia Caves, being the easiest to reach from Wollongong received the attention of the group. Transport was a problem as no one in the group could afford a vehicle. The first few years saw as many trips as petrol rationing permitted - carried out on motorbikes. The large number of caves at Bungonia kept the group busy for some years without the need of ladders. However the first pitch in Drum Cave always held a fascination for some members and rarely a trip was made without it being visited, usually last thing before returning home. Members on the first trip saw the early means of descending stated in 1947 when information on the construction of cable ladders was requested from France. During the same year, a light was lowered down the pitch to observe it and to attempt photographs. A number of fifty-foot lengths of ladder were constructed and the Drum Cave was descended in 1949.

With the descent of Drum Cave, interest in Bungonia slackened, and the group looked further afield and undertook trips to Colong, Tuglow and Wyanbene Caves. Also, other activities such as canoeing, shooting, hiking were taken up.

Speleology in Australia in the early 1950's had become quite popular with a number of clubs operating. The local group decided to form an unofficial club called "The Wollongong Speleological Society". They had no office bearers, fees or regular meetings. During 1955 / 1956 two members purchased a Landrover and made an extensive inland trip through Queensland, Central Australia and South Australia. They spent considerable time at Camooweal Caves with the now defunct Mt Isa Speleological Society. It is only in recent times (1970's) that this area has been given attention by Speleologists.

By 1956, there were three groups operating in the Illawarra District and making fairly frequent visits to non-tourist caves. Late in 1956, the three groups held a combined meeting and joined forces in the one club called "The Wollongong Speleological and Expeditionary Society." Three office bearers were elected (one from each group), a constitution was drawn up, membership fees fixed, regular monthly meetings programmed and organised caving trips planned.

Some of the more notable achievements of WS & ES included a cable ladder descent of the Big Hole, and many exploratory trips around Bendethera and Wyanbene and an expedition to the Nullarbor and Western Australia. The WA trip

resulted in the exploration and development for tourism of the now well-known Augusta Jewel Cave.

An application was made to become affiliated with the ASF but no member was in a position to attend the ASF Committee meeting to present a case and the Society had to rely on a proxy. The application failed: the ASF meeting objected to the "Expeditionary" in the name of the society.

After the failure to gain affiliation with the ASF, the WS&ES started to peter out. Some of the active leaders, including the president left the district. This caused the remaining members to lose interest and trips and meetings became infrequent until towards the end of 1960, the closure clause in the constitution became effective and a final meeting was held to wind up the affairs of the club.



Figure 1
The above shows Terry Braddock in Grill cave in September 1969 testing flash equipment.

On looking back, very little in the way of scientific or exploration was achieved locally. One such discovery at Bungonia by three members of WS&ES rates a mention: the Bottle Cave. This cave has an entrance that could easily be mistaken for a wombat burrow situated in a flat grassy plain with no doline. Six feet inside, there is a fifty-five foot pitch which on descending, one has the impression of descending a large bottle. Further in there is a twenty-five foot pitch with a good digging prospect. Unfortunately, the cave has been lost ever since. One major difference to today's club is that WS&ES was always in the limelight with a member working at a local newspaper, the club was never short of publicity.

After the final meeting of WS&ES, the keener members of the defunct society made periodic trips to Bendethera; some became members of the Sydney Speleological Society and attended their meetings and trips. As time went on, these trips became more frequent until Jim Goold convened a meeting on the 13th of February 1963 to set the "Illawarra Speleological Society" under way.

The basic idea of re-forming a caving club in Wollongong arose from an incident in Bendethera when Lloyd Robinson and Jim Goold attempted to drive a Landrover in from the east. The vehicle unfortunately took a shortcut down the mountain and came to rest on its side (Ref "Chronology of Bendethera," this article). The rescue exercise was carried out under difficult conditions, but with so much enthusiasm, it was decided that a caving club in Wollongong may be viable.

Minutes of the Inaugural Meeting of the Illawarra Speleological Society

The meeting was declared open at 7.30 by Mr J. Goold, the convenor at his residence, 11 Nolan St, Berkely on the 13th February 1963.

Mr Lloyd Robinson was called on to give a brief outline of the history of speleology in the Illawarra.

There was then an election of officers and the following persons were elected to office:

| | |
|-------------------------|--------------|
| President | Mr J. Goold |
| Vice Pres and Treasurer | Mr D. Mathew |
| Secretary | Mr W. Wilton |

It was resolved that the Society be called "The Illawarra Speleological Society" and that all persons present at this meeting, and those who attended the May foundation meeting, be foundation members.

The list of members from this meeting includes: Lloyd Robinson, Bill Wilton & Wolfgang Stengal.



Figure 2

The Photograph above shows Dorothy Robinson in the entrance to Clietmore Cave in December 1964 taken by Lloyd Robinson

Lloyd and Wolfgang were the two members elected to the management committee to discuss things such as transport to trips.

The constitution was then drawn up.

The meeting closed at 9.30 pm and two movies were shown much to the appreciation of the people present.

The purpose of the February meeting was to "test the water". The next scheduled meeting was to be in May. In the meantime, successful trips were run to Colong, Ettrema (2), Barren Grounds and Bungonia. The foundation meeting was held in

May. It will be noted that currently, our AGM is held in April. This was changed after ISS became affiliated with the ASF, to give the Treasurer enough time to collect ISS membership fees and to send the ASF capitation fees by June.

Note:

Of the foundation members of ISS, Bill Wilton, Lloyd Robinson with wife Dorothy are all life members of the Club, and Wolfgang Stengal visits the meetings occasionally.

THE DIPROTODON

The Diprotodon wasn't an ISS invention; however, Lloyd Robinson refined the design to make it a useful means of illuminating large cave chambers for photographic purposes. Lloyd writes:

"The original Diprotodon was built as an addition to a cumbersome fire extinguisher by Captain Maitland Thompson to provide a continuous lighting source to enable photos to be taken with the slow speed films of the day in the large Nullarbor cave caverns.

During December 1966, ISS attended the ASF conference in Mirboo, Victoria. It was here that Allan Hill of CEGSA demonstrated his compact Diprotodon for cave photography lighting. Unlike the Thompson unit which used powdered magnesium as a fuel, Allan's unit used granulated magnesium. Allan named his unit "Diprotodon Hillii"

A Hillii version was constructed and tested. Its first cave trial was in the tourist section of Wyanbene Cave. As soon as it was ignited, a spark burst the balloon - as a result the unit was dropped.

In January, 1968, ISS ran a combined caving trip with WASG to the South West of WA. The Diprotodon was used in the large cavern in Brides Cave. The resultant photos were overexposed and the movies a failure; the Diprotodon was smoky with an amount of unused fuel on the floor. The fluctuating light from the Diprotodon made the reading of an exposure meter difficult; the automatic aperture on the movie camera could not keep in step with the fluctuating light.

Without altering the basic design, the airflow was altered to eliminate the fluctuations, and the mantle was modified to achieve a complete burn of the fuel and less smoke.

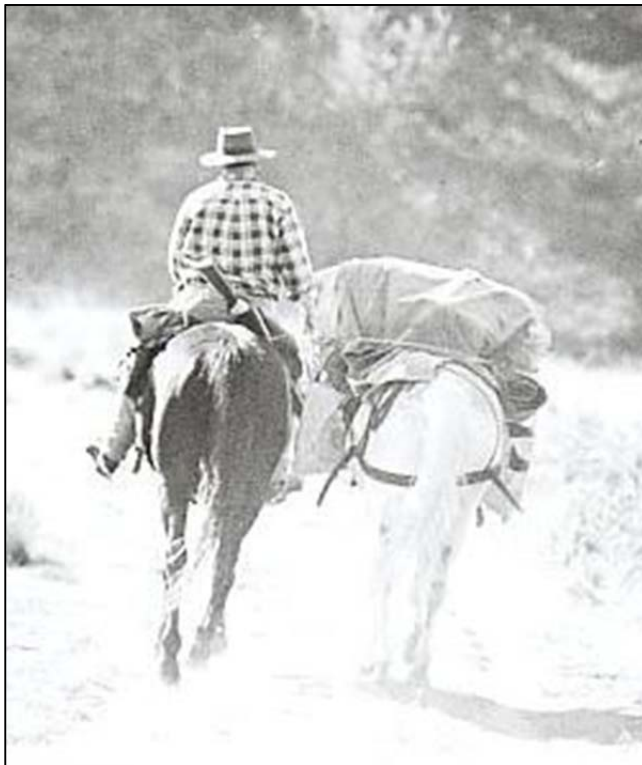
BENDETHERA

The caving area "adopted" by ISS was Bendethera. This was due to the fact that ISS members were closely involved in the post war rediscovery of the caves. The following article, written by Bill Wilton, appeared in the ISS Newsletter Vol 2, No 2.

"During the period 1957 - 1960, considerable time and effort was spent in the Deua Valley, searching for the elusive Bendethera caves. The main searchers for the

caves were the former Wollongong group calling themselves the "The Wollongong Speleological & Expeditionary Group". This group consisted of a mixed bag, consisting of cavers, bushwalkers & shooters. Naturally they were not accepted into the ASF.

When this group collapsed, due to waning interest, two of their members persisted, to search for the Bendethera Caves. The two people, J. Goold & L. Robinson, enlisted the aid of Nita & Vernon Davis, two locals, to try and locate the lost caves. The party set out from "Woola", Davis's property south of Araluen, and headed along the Deua Valley to Bendethera homestead on the 2nd of October, 1960. The party spent a week in Bendethera, finding the caves, and ending the mystery.



Owing to the location of the cave, not much interest was shown in the cave for another 7 months. On the 22nd of May 1961, Goold in the company of D. Begg and again the Davis', walked into Bendethera caves again, this time from Kahn Yunis on foot. During this trip the South Coast was hit by an earthquake (epicentre was off Jervis Bay). Goold & Begg had just emerged from the cave (0740 hrs). On returning to the cave investigation revealed no damage.

On the 13th October, 1962 (unlucky) Goold & Robinson attempted to drive a 4 wheel drive vehicle into Bendethera from the eastern side, this trip turned to disaster when the vehicle turned onto its side, luckily no one was injured, but the walk out to

civilisation nearly proved too much for one of the party. The vehicle was recovered the following weekend.

During May of 1963, Illawarra Speleological Society was formed and the first official expedition was planned and the venue was Bendethera. On the 8th of June, 1963 a party of seven walked into Bendethera from Kahn Yunis and spent a week of exploration and caving. On this trip the Windlass and Figtree caves were found. The main object of this trip was after finding and exploring Main Cave was to find Trickett's Water Cave. The efflux under water cave was found and this was believed the Water Cave we were looking for. A dig was started on this efflux.

The access barrier was broken, in March, 1964 Eurobodalla Shire Council dozed a road into the Bendethera homestead and up Con Creek to Flagpole Flat. The main reason for the road was for the shire and the local Moruya Lions Club to assess the tourist potential of the cave. (In retrospect, what a disaster).

On the 13th March, 1964 R. Richardson & T. Braddock drove to the Caves in two Landrovers, at that time what an experience it was to be able to drive to the caves without carrying heavy rucksacks in from Kahn Yunis.

Easter 1964 saw ISS at Bendethera in strength to conquer the 210 ft Windlass Pit. Prior to the trip a bushfire had gone through the Flagpole flat area, clearing the area, this led to the discovery of Trickett's Water Cave. On the 26 th of June 1964 ISS deposited Fluorescein in the Water Cave, however no traces appeared in Con Creek before departure the next day. September 1964 the Pepeboke Holes on the Krawaree Trail described by Trickett were explored, however we could not find the one Trickett claimed to be very deep. On the same trip R. Knabe with snorkel gear failed to find any extension in the Water Cave. After one dive, the sediment clouded the water and visibility became zero. Also on this trip it was noted that a bushfire had removed the vegetation covering the efflux (BD-2) allowing scree to slide over the entrance.



Figure 3
The Photograph above is on the steep 42 degree slope exiting Bendethera in April 1965.

found by good management, but by luck. We mistakenly went up a creek in heavy fog and stumbled onto Gin Cave.

During Easter 1965, the Gin Cave area received attention, a few small holes were found, but nothing answering to the description of Gin Cave was found. In May 1965, attempts to find the Gin Cave from the western side again proved unsuccessful due to the fact we went down the wrong ridge - it turned out to be the Krawaree Trail. (All the ridges looked alike when comparing them to aerial photos). In June another trip was unsuccessful when a Landrover was bogged in the Upper Shoalhaven swamp for four hours. On 8 hour day weekend in 1965 the Gin Cave was found, it was not

1966 & 1967, not much activity occurred in Bendethera during these years. Easter 1968 saw work on the Efflux (BD-2) start in earnest. About 2 tons of rock was removed and we cleared about 10 ft of passage. In June 1968 a road went through to the Efflux and more equipment could be taken in to work on the excavation. In October 1968 a portable generator and an electric drill were first used in the dig.

In January 1969 a big bushfire and the Robinsons hit Bendethera, both affecting the area. The old homestead was razed to the ground and access was being affected. Easter in 1969 saw the tagging of cave entrances and the discovery of 6 new caves.



Figure 4
The photograph above shows Wolfgang Stengal in the entrance of the BD2 Efflux on 13th December 1970.

Photo by Lloyd Robinson.

ISS was historically linked to Bendethera, it was decided to focus on Bendethera as our first venue.

From 1969, ISS activities in Bendethera waned, mainly due to the volatility of the current owner; it was a lottery whether we were greeted with a bottle of rum or a shotgun! Another reason for the decline in activity was a renewed interest in Wyanbene (see the Wyanbene section of this article), and the beginning of the Kimberley Expeditions.

In 1979, Bendethera was acquired by the National Parks and Wildlife Service to include in the Deua National Park.

In 1987, ISS was “put on hold” due to potential litigation problems. The post box was retained as was associate membership with the ASF. Trips run from 1987 were run as “a group of individual people interested in caving”. These trips were mainly to the Kimberley.

In 1993, John Poulton investigated the possibility of taking out insurance and becoming an incorporated body. At the end of 1993, ISS meeting began to be held again. A committee was elected and eventually, ISS applied for and gained full membership to the ASF. As

Many technical advances had been made since 1969, one of the most significant being the advent of the GPS, especially after selective acquisition was turned off. Bendethera has always been difficult terrain in which to locate cave entrances accurately, due to the steep nature of the area, and more particularly due to the dense wattle scrub that covers the limestone areas. Many known caves have been GPS'd and surveyed since 1994.

Significant work carried out in this period included:

- The rediscovery of Gin Cave and many more caves on the Gin outcrop
- The “pushing” of BD6 to discover much more passage. BD6 is a very wet cave and is significant in the hydrology of Bendethera
- The re-discovery of most of the caves on the Krawarree saddle (except BD26!)
- A field guide to Bendethera was published in the ISS Newsletter in 2002
- ISS, and Canberra Speleological Society has had input into the management plan for the Deua National Park

ISS has also installed a visitors' book in Main Cave (BD1) This monitors visitation to Main Cave, however, not all visitors to Main Cave sign the book, and not all visitors to Bendethera visit Main Cave.

Bendethera has become a multi-use part of the Deua National Park. Weekends will see four wheel drivers, trail bike riders, bushwalkers and horse riders in residence (and one or two cavers!).

SOUTH WEST, WESTERN AUSTRALIA

Another highlight of this era was the expedition type trips which were run - mainly to Western Australia. The following article was written by Lloyd Robinson, the information being gleaned from his personal archives.

6th Feb to 5th March, 1965

Terry Braddock, Bob Richardson, Don Matthews and John Knowles formed the team that undertook the first long distance expedition of ISS, visiting and exploring the caves of the Nullarbor Plain on Nullarbor and Koonalda Stations in South Australia. Joe Jennings had provided them with details of dolines to locate and explore on Nullarbor Station. They also went into Mullamullang Cave in Western Australia. In all, a trying trip with successive days over 40 C. The Flying Doctor Service in Ceduna loaned the party a Traegar two-way radio to maintain contact on a daily basis.



Figure 5
Nick Lewis (on the left), Harley Atkins (on the right in Strongs Cave in W.A.) and Lloyd Robinson (photographer)

Discovered a small significant cavern. "Goldie" the cave dog badly injured as the result of a fall into the Easter Cave doline / solution pipe; had to be put down. Returned via Albany.

23rd Sept to 15th Oct 1966

Nick Lewis (on the left), Harley Atkins (on the right in Strongs Cave in W.A.) and Lloyd Robinson (photographer) made a visit to the South West caves of Western Australia, driving over in a Short Wheel Base (SWB) landrover via Perth. They had the loan of Spackman's holiday cottage in Augusta; over did it on the first day's caving which wrecked the next two days. Visited many caves to familiarise the party with the area for future trips.

26th to 31st December, 1966

Lloyd Robinson attended the ASF conference at Mirboo, Victoria. It was here that Allan Hill of Cave Exploration Group of South Australia, demonstrated his compact "Diprotodon Hillii" as a means of lighting for cave still and movie photography; it impressed Robinson.

5th to 28th January, 1968

Wolfgang Stengal, Harley Atkins and Lloyd Robinson made a visit to the South West caves of Western Australia, driving over in a SWB landrover with a pause in Albany for Robinson to renew his W.A. explosives licence. On this occasion, the party stayed at the Augusta Hotel where with all meals provided and times to be observed, resulted in many more caving hours than on the previous trip. The party carried over a hammer drill and long lengths of power cable. The cable was strung through the forest from the Augusta Jewel Cave's power plant to AU12 cave, where a tunnelling operation was undertaken on a promising lead; work ceased when the lead swung towards the nearby Moondyne Cave. 500 watt flood lamps were used to see Moondyne Cave under lighting for the first time. Atkins tried colour movies using a 500 watt daylight flood lamp. It is thought the party used for the first time for ISS, a "Diprotodon Hillii" in a cave; the resultant photos were burnt out and the unit smoky. At times members of Western Australia Speleological Group (WASG) assisted with the ISS project. On returning via Albany, the party climbed Bluff Knoll, the highest peak of the Sterling Ranges. High temperatures were encountered on the Nullarbor crossing, 118°F official at Nundroo.

16th January to 8th February 1970

Wolfgang Stengal and Lloyd Robinson made a visit to the South West caves of W.A. driving across in a SWB landrover via the shortest way possible, both ways.

Peter and Julie Henley of WASG joined the ISS group for part of the time; all stayed in the Augusta Hotel. A large slice of caving time was taken up in positioning caves limits on the surface, frequently in heavy undergrowth, using a radio direction finder that the Sydney Speleological Society had loaned them. Stengal and Robinson hired Dr Williams to fly over the caving areas at low altitude - very low. (Augusta then not in Department of Civil Aviation control)



Wolfgang Stengal (on the right in the photograph by Lloyd) and Lloyd Robinson found themselves the only members of a well-advertised ISS trip by air to Tasmania in December 1971.



The tent to the left is in Exit Cave December 1971 and was used by Stengal, Robinson and Skinner to keep the moisture out of their sleeping quarters when they spent 3 days in the cave.

In December 1971, ISS ran a trip to Tasmania. A visit was made to Exit Cave with the Diprotodon given a trial run. Later ISS made a trip into Kubla Khan Cave and decided that the Khan cavern was ideal for Diprotodon lighted photos. A couple of days later, CQSS members joined ISS to go as far as the Khan cavern. On full choke, the Diprotodon was used twice to light up the cavern, and photos were taken of the two large formations with good results.

Duplicate slides were sent to Tasmania. They were surprised at the size of the Khan formations as they had only viewed them by carbide lamps. These photos have been reproduced many times.

The last practical use of D. Hillii was when the movie of Kubla Khan was taken. Hillii provided the lighting of the Khan cavern with close to 50 cavers in tow to see the event. Now it is a museum piece with the advent of fast film and fast speed digital photography - plus lack of fuel. However the 50 odd cavers have witnessed an event that is unlikely to be repeated in the near future.

1st to 28th December, 1972

Wolfgang Stengal and Lloyd Robinson flew to Perth and then drove to Augusta by hire car. Ralph Saxton fired up his SWB landrover to drive to Augusta with Roland Knabe and Gordon Sykes. Peter Henley, Sid and Lin Roach of the WASG joined in; the Spackmans made their holiday cottage available where everyone stayed. The expedition took full advantage of Sykes' expertise as an underground coalmine surveyor and the surveying equipment he had. There was a diversion; a WASG cave diver had just dived in Easter Cave and discovered the Gondolin Tendency. With a little care it could be entered without scuba gear through four duck dives. The ISS party went in at various times and assisted the W.A. Newspaper Ltd's photographer and journos with their cover of the find. Using the SSS radio direction finder, surveying above and below ground continued day after day! In the high undergrowth areas, surveying was carried out at night to avoid the heat and March flies. Sykes felt the single members on the trip were not partaking of life to the fullest. To this end he sought likely girls from the tourist hordes leaving the Jewel Cave when surveying nearby. He quickly had success and met a group for lunch at the hotel restaurant to outline his plans. From the cavers his efforts received a mixed reception. Saxton

later married a lass from the Sykes selection. After the others had departed, Stengal and Robinson caved with Cliff Spackman and Jim McMannus, and also took in another low-level plane flight with the good doctor. (This trip is recorded; refer ISS Newsletter Vol 1, No 10.)

Footnote: Due to increasing tourism and increasing urban development in the lower South West has resulted in greater controls and restrictions being placed on many activities including caving. ISS has not run any further expeditions to the W.A. South West.

As well as Bendethera and the South West, ISS visited many little - known caving areas in the 1960's, areas such as Narrengullen, Ettrema and Jones Creek. They also visited Colong and Wyanbene. In the late 1960's, a group led by Rick Kelly found their way up the Wyanbene water crawl and eventually into the Gunbarrell Aven. It is believed that this may have been the first time anyone had actually entered the Aven. Many subsequent exploratory trips were run into Wyanbene.

WYANBENE

From the early 1970's a more active and practical interest was shown in the Gunbarrell Aven. In June 1973, the first stage of the exercise was carried out - the height was measured. This was achieved by attaching a helium filled balloon to fine 40 denier polyester thread. The height was measured at 365 feet (112 metres). All was well until a candle was attached just below the balloon. The candle burnt



through the thread and it came down pretty quick. The balloon was recovered on a later trip.

Then there was a period of brainstorming to design a lightweight camera and electronic control gear to send up on the balloon to photograph the upper reaches of the Gunbarrell. Eventually, a balsa wood camera was built, having a single element lens (base of bottle type) but without a shutter (known as the Mk1 camera).

In the meantime, the project of locating the position of the Gunbarrell on the surface was carried out. In March 1975, a trip was run with this object in mind. We had borrowed Peter Wellings' RDF equipment. The arrangement was that we formed two groups, one to enter the cave with the transmitter, and the other to be on the surface with the loop. The underground group was to turn on the transmitter for 5 minutes every 15 minutes, starting at 2.30pm. The

underground group didn't start transmitting until 3.00pm, by which time the above ground group were too far away from the "guessed" location. The exercise was a failure.

On the next attempt, a week later, Peter Wellings came along to operate the loop. We also used a set of loaned "Michie" phones for communication. The position was pinpointed and the amount of rock above the aven calculated - a maximum of 6 metres!

In June 1975, the Mk1 camera was given a trial. The exercise ran smoothly, however two interesting facts were noted:

1. The balloon seemed to lose a certain amount of gas during the exercise. This was later explained - Helium is very inert (it doesn't like to combine with anything else) so it exists as a simple atom (not a molecule) that is able to permeate through the plastic balloon.
2. At approximately 180 feet (55 metres) above the floor, there was quite a strong cross wind.

The results of the exercise were satisfactory, but not quite portfolio standard.



Figure 6
The Photograph above, taken by Lloyd Robinson, at a makeshift camp at Braidwood to hide from the torrential rain en route to Wyanbene shows David Mathews hiding on water pipes in May 1976.

The next improvement was to build a balsa wood camera with a better lens. This lens was salvaged from a 1940's vintage camera, and incorporated a solenoid-operated shutter. The electronics was modified to give a variable time delay instead of a fixed 3.5 minutes. This set-up had its maiden flight in May 1976, and the results were greatly improved.

As a side issue to Wyanbene, a permit was obtained at the request of the Jenolan Chief Guide, John Cully, to photograph the top of an aven in Mammoth Cave, Jenolan. The results indicated that there may have been a passage from the top, but it was blocked off with formation.

In late 1976, the decision was made to use hydrogen instead of helium. In the event, this had a few advantages: it has twice as much lifting power, it was cheaper to obtain, and as hydrogen forms a molecule consisting of two atoms, the problem of gas loss was solved. However, it is potentially rather dangerous.

The first trip using hydrogen was held in December 1976, and we had a visitor along, Sid Roach from Speleological Research Group of Western Australia. The gear was carried into the Gunbarrel, with the red hydrogen cylinder treated with due reverence. The balloons were filled and they promptly laid themselves on the ground and refused to lift. No amount of cursing or cajolery made any difference. The result was total embarrassment for ISS. The gas was later tested by CIG, and was reported as 92% pure!!



Figure 7
The Photograph above,, taken by Lloyd Robinson, shows the balloon in final outside trials in June 1977 with Bill Bevan on the left, John Kemister in the middle and Dave Dicker on the Right.

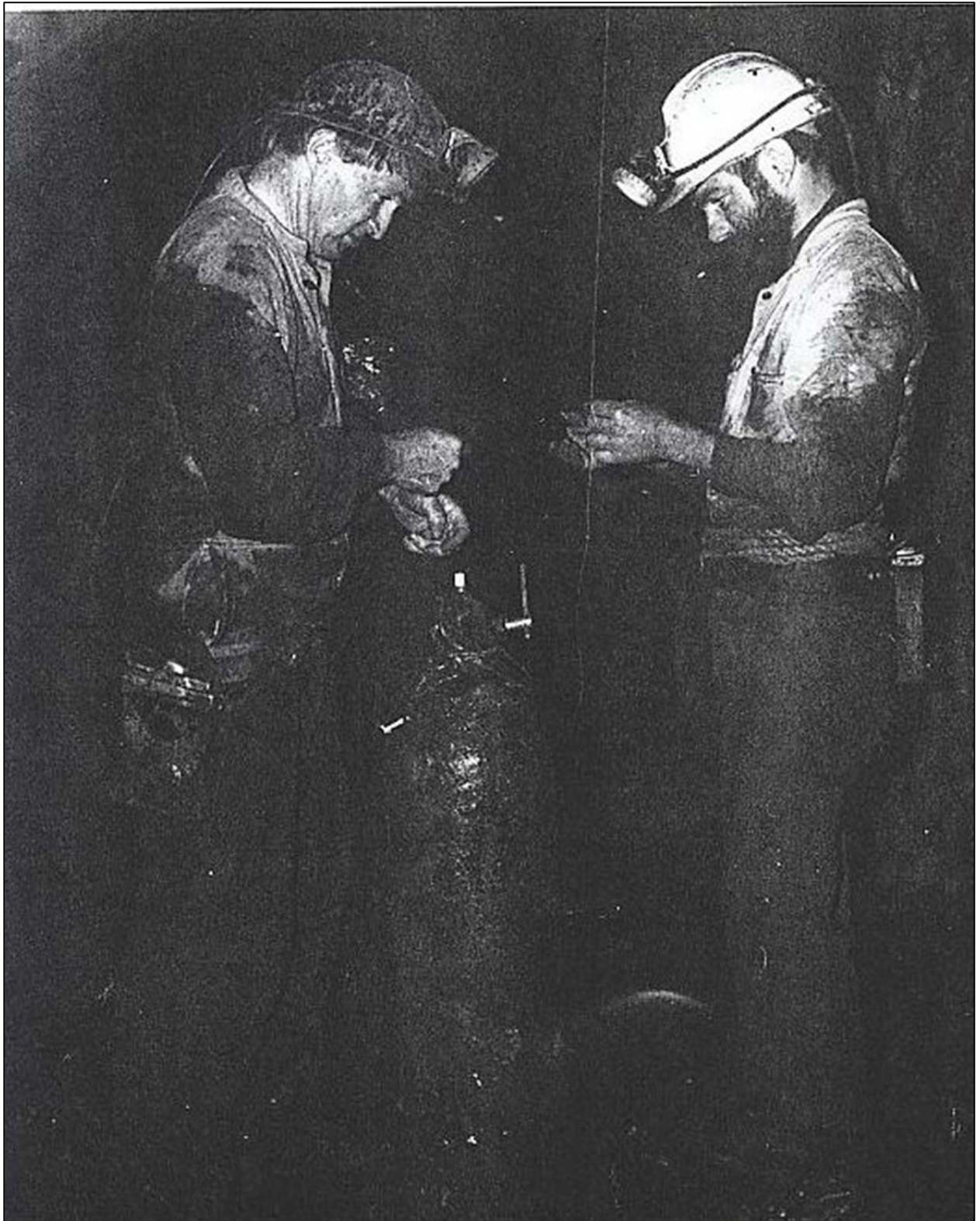


Figure 8 Lloyd and Dave filling the balloon from the hydrogen balloon

1977 saw several trips to Wyanbene. Our equipment and techniques were improving. The main factor affecting the results was the weather conditions in the Gunbarrel on the day of the exercise.

The last chapter of the balloon exercise was carried out in April 1978. Allan Warrild, the renowned rock climber / caver, was attempting to climb the Gunbarrel. He was some 50 metres up. We ran a combined trip with the aim of getting photos of the climbers. Conditions were very poor, with heavy mist and a fair bit of rain. Some fair results were obtained, and an interesting factor was the presence of fine tree roots on the balloons when they were finally retrieved.

The above section of the history belies the difficulties of carrying out the exercise. There was always a mountain of gear to carry in, much of it delicate or explosive. Over the span of the trips, the concept of gear-passing was honed to a very fine art. Provided that there were 4-5 people along, we could get all the gear into the Gunbarrel in about 1.5 hours. Novices on the trip were given the special task of getting the tripod, in its canvas bag, into the Gunbarrel in a dry condition. The bag generally arrived dry, but the novice arrived very wet. Cavers of longer standing were occasionally conned. There was one winter's evening when one elder member decided that the top of the Gunbarrel (above ground) could do with looking at with the view of finding out whether any condensation was emerging from the ground. After some half hour, three cavers were trudging up the track. The elder caver was still sitting next to the campfire, feeling very relaxed. Good one Lloyd!



Figure 9

The photo above shows Morris Kelly in the blue jumper and Gwen Blain to the right drying overalls after a trip into Wyanbene Cave in March 1967.

THE KIMBERLEY

Slightly overlapping the "Wyanbene Balloon Exercise", came the Kimberley Trips. These were never ISS-only trips although there was always a strong contingent of ISS members along. The first trip was scheduled for August, 1977. August was picked as it was well into the dry season, and it was thought that there would be little risk of rain. In the event, temperatures were higher than earlier in the dry, and many water holes were drying up. The trip was organised in conjunction with the Blue Mountains Speleo Club, and due to the fact that little speleo work had been carried out in the area, the organising took well over two years.



The members of the first Kimberley Trip.

Left to Right back row:

*Dave Dicker, Terry Braddock, John Redpath, Barry Richards, Mrs Richards, ? Fox
Wendy Braddock, Carol Redpath, Roy Munster, Dorothy Robinson, ? Fox,
Lloyd Robinson*

Men crouching are Peter Morris on left and Peter Cully on the right.

Our meeting place was Geikie Gorge, near Fitzroy Crossing, and most people turned up within the deadline. We were lucky to meet up with a character called Roy Munster at Fitzroy Crossing. Roy had lived in the area for about two years, and had interested himself in the caves.

We had a brief look at some of the caves around Geikie Gorge (under the eagle eye of the ranger), then under Roy's guidance, went out to our first area of interest, Cave Springs in the Lawford Range. At the time, Cave Springs was on Christmas Creek

Station (or maybe GoGo). The Emanuel Range was also given a cursory look over, but Mimbi Cave was certainly the star, and was a cave to impress poor starved eastern cavers. The group then moved north west to the Napier Range and investigated the area between Napier Station and Old Napier Downs Cave. The group then broke up at the Barker River and individually found their way home.

No surveying was carried out on this trip - it was purely a "reconnaissance" and observation trip. It must be noted that without Roy Munster's help, we would have been at least four weeks behind. He showed us many of the caves known to the locals, and some that few people would know of. I'm also sure that we showed him a few that he hadn't seen before.

The 1977 Kimberley Trip was written up and published in the ISS Newsletter, Vol 2, No1, and generated a fair amount of interest amongst cavers. The second trip was mooted for May, 1979, and attracted interest from the Sydney Speleo Society, the Orange Speleo society, and ISS. We were now armed with some pre-knowledge of the area, so we could plan, to some extent, what our activities would be. Additionally, Dave Lowry of the WA Department of Mineral Resources had provided us with some marked up copies of air photos, and general observations on interesting areas to look at.

The 1979 trip saw the beginning of our involvement in cave surveying in the Kimberley. Dave Lowry had already produced a part survey of Mimbi Cave. This survey was done "on the run" and proved remarkably accurate. Altogether, some 5 - 6 Km of cave (and grike) was surveyed between the group. This illustrates the advantage of a big party - there were generally at least two groups surveying at any time. Pluto's Way, a cave found in 1977 in the Emanuel Range, was also surveyed. Towards the end of our stay in the Cave Springs area, the "Illawarra Cave" was discovered in the Laidlaw Range.

From Cave Springs, the group headed north-west along the Napier Range and spent a few days looking for caves north west of the Barker River. The result was the re-discovery of Barnett Springs Cave.



Figure 10
The photograph below shows Gordon Sykes at a wet camp at Cave Springs, Kimberly in June 1979.

Wolf Stengal was always the stirrer of the 1979 trip. In retaliation, some members of the group appropriated his helmet, and firmly attached a steer's lower jawbone. He was presented with "The Royal Order of the Donkey Jaw". To celebrate, Wolf did a rain dance! Well, it certainly rained. The Fitzroy River came up six metres overnight, and the group had to return home by way of Perth. Coincidentally, several wives fell pregnant around then, so it must have been a pretty potent dance. Since then rain dancing (or any other

form of dancing) has been strictly forbidden!



Figure 11
Dorothy Robinson and Wolf Stengal in his “hat”

for the first time. The entrance to this cave was sighted by Roy Munster and Simon Jolly during the previous wet season, but due to the large volume of water emerging, they could not enter the cave. Whalemouth Cave is unusual in that it is formed in quartzite - a very hard and chemically resistant rock. It was a boon to have Joe along to explain the mechanics of its formation. Some time was spent at Cave Springs then the Oscar Range received a brief look at. Again the group returned via the Gibb River Road.

The observation was made on many Kimberley trips - "I wonder what this place looks like in the wet season". Visiting the area in the wet may have been disappointing - we may have been isolated in the centres of population, or we may not have any rain at all. The idea of a camera, located in a strategic location in Mimbi Cave was discussed and "brainstormed" over a long period, resulting in a unit being installed in 1993, and retrieved in 1996. (Ref ISS Newsletters Vol 3, Nos 6 et al). It seems that ISS can build any sort of machine - provided it has a camera attached!

The 1980 trip was held in June, statistically the best month to be there. Much time was spent in Mimbi Cave surveying, and the cave was extended to 8.5 km of cave and grike. The elusive "Lost Section", briefly entered in 1977, was looked for without success. Another side issue of this trip was the gathering of moths from the Northern Territory and Kimberley areas.

From Cave Springs, the group headed northwest to the Barnett Springs Cave where a number of photographic exercises were carried out. The group came home via the Gibb River Road and Kununurra.

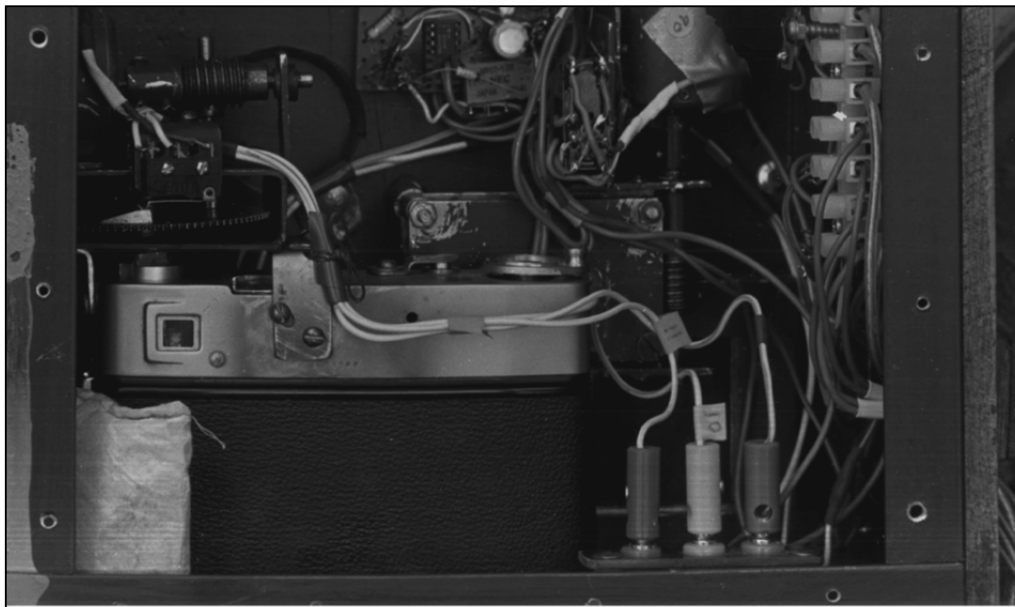
The 1982 Expedition was significant for two reasons, for the first time we had a scientist along - the late Dr Joe Jennings, and Whalemouth Cave near Turkey Creek was entered

The Kimberley trips between 1984 and 1995 expanded our explorations and surveys in the Cave Springs area. The Mimbi Cave survey is now 13.5 km of passage and grike. Investigation in the Laidlaw Range has resulted in the discovery and surveying of several new and extensive caves. Active interest in the Kimberley, however, has waned, mainly due to access problems, but partly due to the fact that we have been visiting the area over a period of 20 years or so.

REMOTE LOCATION SITE CAMERA

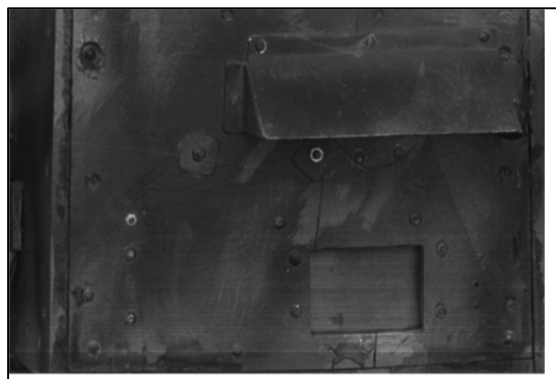
While caving in the Kimberley, notice was made of flood debris caught up on the walls of the main stream passage in Mimbi Cave. The debris was up to 5 meters from floor level and consisted of everything from grass to large logs. We often wondered what the cave would look like during a wet season such as deposited the debris. A visit during the wet t season may not have produced any rain, or may have produced too much, thus preventing access to the cave.

Over a lengthy period, Lloyd Robinson and the author designed and built a camera unit which would, hopefully, give us an idea of conditions in the cave during the wet season. The unit consisted of a rangefinder camera which had been highly modified to suit our purpose, two motor / gearbox assemblies - one to open a sliding door in the housing, and one to transport the film to the next frame. Timing and sequencing was done electronically, and the triggering switches consisted of magnet / reed switches. The whole project was carried out on a shoestring as we didn't know whether the unit would stand the humid conditions leading up to the wet season, or the very wet conditions during the wet season - it wasn't worth investing a lot of money in something that had a high possibility of not working!



The unit was rigorously tested at home and was found to be totally reliable. In 1993, the unit was installed in Mimbi Cave and a test photo was taken to ensure that the unit was still working. The project was now in the lap of the gods and the Kimberley wet season!

In the event, the camera wasn't retrieved until 1995 - it had spent two wet seasons in the cave. On retrieval, the unit was inspected and cleaned up. Amazingly it was still operational, so a fresh film was installed, new batteries, and new float switches, and the project was running again!



On developing the film, we found that we had images from both wet seasons. The 93 / 94 wet season only triggered the lower switches, but the 94 / 95 season triggered the higher switches.

Results from the 95 / 96 wet season were disappointing, as someone had spotted the unit and turned the flash away from the scene. However, the unit had still functioned even though we didn't get any images.



Figure 12
Lloyd Robinson working on an updated version of the remote camera for the Bullita Region

in a flood prone section of cave and was partly immersed, thus giving the camera its final coup de grace - the rest of the mechanism still worked!

If nothing else, the project proved that simple, low cost solutions often work well in adverse conditions such as Kimberley wet seasons.

The unit was finally retrieved from Mimbi Cave in 1996, and was found to be still serviceable! This was beyond all our wildest expectations. We would have been happy if the camera had functioned over one Kimberley wet season. It was again cleaned up and tested and installed in a cave in the Northern Territory. Unfortunately, it was installed

THE NULLARBOR

Other than brief visits in the mid 1960's, ISS visitation to the Nullarbor started in 1999. This first trip was about two years in the planning, with consultation taking place with many Nullarbor experts. One of the main aims was to familiarise ourselves with some of the known caves and to gain experience with some of the conditions peculiar to the Nullarbor. We were lucky to have Max Hall with us as he was a keen caver, based at Balladonia.

Standing L to R: Tony Pezzutto, Lloyd Robinson, Gerrard Collins, Hank Copus, Anthony Pezzutto, Clive Causer, Dave Dicker, Karen, John Redpath, Paul Devine, Andrew Scobie, Max Hall
Front: Bob Kershaw, Alison Scobie, Adam Peters



Known caves such as Weebubbie and Abrakurrie were descended and photographed. Features such as Kutowalla and Winbirra dolines were looked at. In the early part of the trip, a number of new caves were discovered, explored and surveyed, notably, Sarib and Lonesome Caves. We re-grouped at Thampana Cave. From Thampana Cave, various forays were made without startling discoveries.

The group continued on to Liar's Lair, and Devil's Lair, and Steg Cave, all known caves which were entered and photographed.

One thing stood out on this trip - the importance of the GPS for navigation on the featureless Nullarbor Plains.

The group returned to the eastern states at various times and by various routes.

ISS had learned from Kimberley experiences that it was not a good idea to run major expeditions on consecutive years. The attendance on the second trips tended to be a bit light! So, the second visit to the Nullarbor was set for April, 2001

On the 2001 trip, a lesson was learned during the trip out, that it is unwise to overload a vehicle, and expect it to perform as if it was unloaded, as overheating and related problems can occur.

The first week of the 2001 trip was spent in the Madura area, investigating Mullamalang Cave and other nearby caves. Some tagging and surveying was done as well as much photography.

The group then travelled west onto the Roe Plains where many features were tagged, and some surveyed.

On Monday the 23rd of April, the group started to break up, for the return trip to the eastern states.

The 2003 trip was also run in April. Max Hall had organised a permit for the group to cave in South Australia. Consequently, this trip was spent in South Australia discovering, exploring, GPS'ing and surveying caves on this side of the border.

JUDBARRA - GREGORY NATIONAL PARK

From 1995 to 2012 Lloyd and Dorothy Robinson attended the annual surveying trip to this area. Other members of the club – Bob attended from 1997 to 2017, Jenny and Gary attended in 2007, and more information on the area can be read in the Helictite Journal (Volume 41, 2012 Published May 2012 by A.S.F. Inc, edited by Ken G Grimes. --<http://helictite.caves.org.au/contents4.html>)

NINGBING RANGES

One of the planned aims of the 1982 ISS Kimberley trip was to visit the Ningbing Ranges, north of Kununurra. In the event, we were sidetracked to Whalemouth Cave



in the Turkey Creek area. In 2005, our President, Gerrard Collins and his partner, Jodi Sellick were in Kununurra, and met up with John Cugley - a local caver, who showed them some caves in the Ningbing Ranges. On their return, Gerrard and Jodi fired up the interest of ISS members enough to propose a trip to the Ningbings in 2007.

Based at Station Creek, the caving in the Ningbings is four stars, plenty of clean water to drink and swim in, lots of

shade, plenty of firewood for cooking and campfires, and the karst is only a stone throw away. (This area has now been returned to the Traditional Owners, who with

DEC are preparing a management plan of the area and camping here is not allowed).

The main area of interest to ISS was about 2 km away from Station Creek, and no time was lost in starting the serious business of finding caves. Over the next few days, a number of caves were found, tagged and surveyed.

On about the seventh day of the trip, a small entrance was found which led to the most significant find of the trip. This cave was designated 6KNI 116 and was named Shiitake Cave after a culinary experience of the discoverer that didn't work out as planned!

This cave was significant in terms of extent and formation. One of the earliest concerns became track marking rather than surveying, as there was a real risk of damaging fragile formation. Over the next few days, the cave was surveyed and joined with 6KNI 112, to bring the total survey length to 1.5 Km

The group broke up and in true ISS tradition, made their way home by various routes, with a strong wish to return. As with all expedition type trips, many questions were answered, but many more were asked!

Further visits to the Ningbings were scheduled from 2009 to 2023, but with restrictions due to COVID-19 in 2020. Some members came over from the Bullita area in the NT and some flew up from the eastern states in 2009. Our area of interest was much the same as in 2007, with the intention of extending known caves and finding new ones. Significant finds on this trips were 6KNI 118, 119 & 120. These caves have good decoration and they were surveyed and photographed. Another series of entrances were also found - 6KNI 123 and 124. They were explored until snakes were encountered. The cave was significant and was named Twin Snakes Cave. In 2011 a few ISS members visited Whalemouth Cave and then headed to Judbarra NP for a week there.

As on previous trips, the group took a "day off". On this occasion we drove to Cape Dommet on the Cambridge Gulf. This day reminded me of why I love the Kimberleys so much, and I vowed that I would return some day as a tourist - this I did in 2011.

The Ningbing Karst covers a huge area. ISS has only looked at a small section of it - this small section still has potential. During 2021 and 2022 LiDAR imagery was used in the north and south of the area to locate more new caves and assist in the relocation of missing caves tagged in the 1990's. These areas are now located in GIS providing a window to the rest of the Ningbings which are still largely unknown.

ODDS & ENDS

I'm sure that there are some aspects of ISS activity that I haven't mentioned in this article, hopefully, they are minor. One thing that comes to mind is our installation of strain gauges in various caves. These devices monitor rock movement in areas that seem unstable.

Except for our "on hold" period in the late 1980's to early 1990's, ISS has had a stable membership of about 25 - 30. Much of this stability is due to the fact that ISS has always been family orientated - we don't necessarily lose members to marriage and the advent of kids. It's surprising how youngsters adapt to the rough and tumble of caving life!

I originally came along on some ISS trips to see what it was all about. That was in 1973, I've been here ever since!

ACKNOWLEDGEMENTS

Thanks, Lloyd for all the information you have supplied for this article, and thank you for being a mentor to me. You have talked me into going to places that I wouldn't have gone otherwise, shown me how to take cave photos and shown me how to deal with hardships and mishaps. I've still got a strong memory of putting on icy overalls and boots to go back into Wyanbene for a few more photos (and retrieve my caving gear!).

Thanks to the late Bill Wilton who ensured that ISS was run as a family group. Our continued existence is largely due to his insistence that this principle be followed. I thank him also for his early notes on Bendethera

Thanks, Bob for your organisation and enthusiasm, both on the expeditions and trips that you have organised, and in keeping ISS activities alive by way of the Newsletter. You're a bloke after my own heart so I believe too that it is important to record what we do - otherwise, it's lost and we are wasting our time.

Thanks especially to John Kemister, you're the bloke who started the whole thing for me in 1973. Good on you, Mate. And we're still doing a few crazy things!

Thanks too, to all past and present members of ISS and other caving clubs. It's an honour and a privilege to go caving with you. You are my family of choice!

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