

BULLETIN OF THE SYDNEY UNIVERSITY SPELEOLOGICAL SOCIETY



SUSS



FOUNDED 1948

Box 35, The Union,
University of Sydney,
N.S.W. 2006.

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ANNUAL GENERAL MEETING

- 1974

Thursday April 4 at 7 pm.

This meeting will be held in the Badham Room, Sydney University (Old Union Building). Reports of committee members will be presented and an election of office bearers for 1974 will be held.

MAY GENERAL MEETING

Thursday May 2 at 7pm

This meeting will be held in the Badham Room, Sydney University. University of New South Wales Speleological Society will be visiting us and Ian Wood will give an illustrated talk. The subject is a darkly kept secret.

.....Price 20c

MARCH 30-31	JENOLAN	B. Welch (Bruce)	991013
APRIL 4	General Meeting.	7 pm Badham Room.	ANNUAL GENERAL MEETING.
APRIL 6-7	WOMBEYAN	Dennis Ward	9092400
APRIL 10-15	EASTER		
	Yarrangobilly	Jim Seabrook	Arrange at meeting
	Wyanbene	Tony Austin	Arrange at meeting
	Cooleman Plains	Ian "Spike" Milligan	6601508
APRIL 20-21	JENOLAN	Bruce Welch	991013
MAY 2	General Meeting.	7 pm Badham Room.	Talk by Ian Wood.
MAY 11-12	COLONG	Bruce Welch	991013
MAY 18-19	Wombeyan	Dennis Ward	9092400
MAY SOMETIME	JENOLAN Wyburds Lake Cave.	Exploration and surveying.	
		Jim Seabrook	Arrange at meeting.
JUNE 6	GENERAL MEETING		
JUNE SOMETIME	JENOLAN More Wyburds		
		Jim Seabrook	Arrange at meeting.
JULY 4	GENERAL MEETING		
JUNE=JULY=AUGUST SOMETIME			
	BARBARA DEW MEMORIAL LECTURE		
	SUSS ANNUAL DINNER		

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A trip fee of 30¢ applies for all trips.

Regulations limit the numbers on trips to Jenolan, Yarrangobilly, Wombeyan and Cooleman Plains. It is essential that application for these trips be made early. Preference will be given to full and associate members over prospective members.

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Sub-trip Report - JENOLAN Monday 28JAN74

- P.Toomer.

After a Sunday evening at the smoke concert, and the consequent late night, we awoke early at 10am (?). It was decided that a day of surface trogging was in order and so after a leisurely breakfast (2 hrs) all except Rik left for Jenolan (Rik had to write the trip report?). After obtaining permission to park behind Caves House, we set off to the Blue (?) Lake to take some water flow measurements. Yes, the touri were stirred by the sight of five people paddling around in the lake with tapes, rules and stopwatches.

After these measurements were taken, we set off down stream, measured the flow across the dam and then set off to the power station to admire John Norris' freshly cleaned swimming pool. After some more stream flow measurements (to check our values for over the weir) we decided to sample the swimming pool. Greg walked in until he disappeared. Bruce similarly clad - shorts and boots - soon followed and Philip was poised for a skinny dip when a crowd of touri arrived. Thus he too followed Greg and Bruce's example of dress. Wayne and Kevin watched. After some freezing frivolity we returned to the cars and went to Mammoth Flat. The gate was open. We then headed up to Mammoth and removed the ladders and placed them in the creek to wash.

The next stop was Bow Cave where we again measured water flow and then set about diverting the whole creek back into Bow as Mammoth was getting a very thorough wash. After dropping the level of the creek downstream of Bow by 250mm we returned to the cars and then to Hampton, saying farewell to the Guides en route. After cleaning the house we set off for Sydney at 1930.

Appendix

DATA COLLECTED 26-28JAN74

- +1. Jenolan River sinking near path/creek junction upstream of Devils Coach House.
- +2. Report of water flowing through DCH for 3 days.
- +3. River level in Imperial near maximum recorded.
- +4. Playing Fields sink hole full on all three days and no change in level apparent; level seems similar to that of water in creek (Jenolan R).

+5. Table of stream flow measurements

		Velocity ft/sec	X-sect sq ft	Flow cusec
Upstream Bow Cave	26JAN74	2	15	30
Upstream Bow Cave	28JAN74	1.1	9.7	10.7
Into Bow Cave	26JAN74	2.5	7	17.5
Downstream Bow Cave	26JAN74	1.5	8	12
Bottom of Fort y Foot	26JAN74	4	5	20
Home Sweet Home	26JAN74	-	-	0.25
At "6' drop"	26JAN74	3.6	6	22
Sand passage	26JAN74	0.9	3	2.7
Camp Creek	28JAN74	2	0.8	1.6
River Styx	28JAN74	1.2	1.8	14
River Styx	28JAN74	3.4	3.5	14
Weir - Blue Lake	28JAN74	2	14	28

Note 1. Considering the accuracy of the measurements of cross sectional area in irregular channels, the above results correlate quite well. However a measurement downstream of the swimming pool is anomolous at 70 cusecs!! (Velocity 4 ft/sec, cross sectional area 17.5 sq ft.)

Note 2. Imperial measurements are used as the metric (S.I.) unit for flow rate is not yet stipulated and also to facilitate easy comparison with previous measurements.

(One may assume that the S.I. basic unit of flow would be $m^3 sec^{-1}$ or cumec and the practical unit to be litres $_{sec}^{-1}$...Ed)

CHUDLEIGH CAVES

The English writer Anthony Trollope visited Australia in the early 1870's. This passage was taken from "Australia and New Zealand" published in London and Melbourne (as a serial in "The Australian") in FEB1873 and reprinted in "Trollope's Australia" Pp 165-7, ed. H.Daw pub. Thomas Nelson 1966.

"I had gone to Deloraine in company with the governor and others on purpose to visit the Chudleigh caves.

"The Chudleigh caves are one of the wonders of Tasmania - and, indeed, they are very wonderful. We went there in true gubernatorial style, with four horses - for it must be understood that throughout the colonies, when it is known that the governor is coming, things are done as they should be. Ours was a private little party, consisting of four, but we had four horses, and went to the caves magnificently. We had a very pleasant day, more than ordinarily so; but the Chudleigh caves should not be visited by any one lightly, and I think I may take upon myself to say that they should not be visited by ladies at all. On this occasion we were all males.

"With our four horses we were driven some sixteen miles, till at last we were in the middle of thick bush without any vestige of a road. The road had become less like a road by degrees, and the fields less like fields. Where Timber had been cleared away, wholly or in part, very heavy crops of oats were growing. The farmers are afraid to trust themselves to wheat because of the rust, and can hardly live by growing oats, so great is the cost both of labour and carriage, and so low the price of the grain. On our journey an old man attached himself to us, who seemed to have the caves under his peculiar care, and who assured us that he had shown all the governors over them. He came out upon us from a public-house, of which he was the proprietor, and promising us that we should have the benefit of his services, followed us on a wonderful rat-tailed mare, with which he jumped over every obstruction along the road, and made himself very busy, assuring the governor that no governor could see the caves aright without him, and taking command of the whole party with an air of authority which always carries success with it. I think his name was Pickett. We soon found that we were creatures in Mr. Pickett's hand.

"We descended from the carriage, Mr. Pickett so ordering, but the order was

Not given till it was impossible for any carriage to proceed farther. We then walked about a mile through the scrub, descending at last into a hole which was the mouth of the cave. Stalactite caves are not uncommon in the world. Those at Cheddar in Somersetshire are very well known, and are very pretty - much prettier than the caves in Tasmania, as the stones drop into rarer shapes and are brighter and more picturesque. But the caves at Cheddar are nothing to the Chudleigh caves in bigness, blackness, water, dirt, and the enforced necessity in crawling, creeping, wading, and knocking one's head about at every turn. Mr. Pickett lighted the candles, told us that we should have to walk about five miles underground, gave us to understand that the water would never be more than up to our middles, that one could do it all in four hours, and that we were about to grope our way through the greatest wonder of the world. Then he led the way gallantly, splashing down into the mud, and inviting his Excellency to take heart and fear nothing. His Excellency took heart and went on. Whether he feared anything, I cannot say. I did - when I had broken my head for the third time, and especially when I had crawled through a crevice in which I nearly stuck, and as to which I felt almost certain that I should never be able to force my way back again. We were then more than a mile from the aperture, and innumerable black rivers, little Styxes dark deceitful Acherons, cold as death, ran between us and the upper air. Pickett was instant with us to go on to the end. We had not seen half the wonders of the place - which by-the-bye were invisible by reason of the outer darkness. But we were cold to the marrow of our bones, wet through, covered with mud, and assured that, if we did go on, the journey must be made partly with our hands : knees, and partly after the fashion of serpents. At last we rebelled and insisted on being allowed to return. So we waded our way back again. I think that I will never visit another land cave. We had, however, brought fresh clothes. And when we had made a forest toilet, and demolished our chickens and sherry, we were able to smoke the pipe of peace in happiness and contentment under Mr. Pickett's auspices. Mr. Pickett told us, as we took our leave of him, that he should not enter the caves again till another governor should come to see them "

And where, pray tell, are Chudleigh Caves? ..Ed

THE DRÄGER MULTI GAS DETECTOR MODEL 21/31

-R.Tunney.

Caves often contain high concentrations of CO_2 . As a matter of safety it is necessary for cavers to know when this gas is present and how much there is. There are four basic ways of doing this:

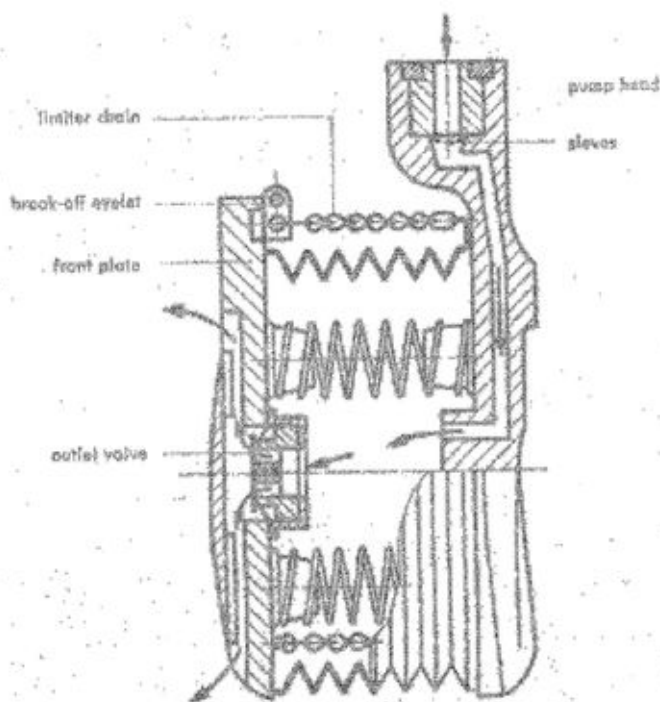
- 1 Physiological
- 2 Candle or carbide lamp flame
- 3 Quick, on the spot measurement
- 4 Analysis carried out on samples removed from the cave

For safety reasons method 3 is the only suitable way.

The Dräger Multi Gas Detector is a simple, effective and reasonably accurate device for measuring CO_2 in a cave. The complete unit comes in a metal case containing bellows pump, carrying bag, tools and spares. There is space in the case for packets of detector tubes. Different detector tubes are required for different gases or combinations of gases.

PUMP

The pump is a hand operated bellows which draws in 100cc of air with each stroke. The pump is held in the right hand. The bellows are compressed and then allowed to expand without hindrance. A chain limits the expansion.



Sectional drawing of the bellows pump.

DETECTOR TUBES

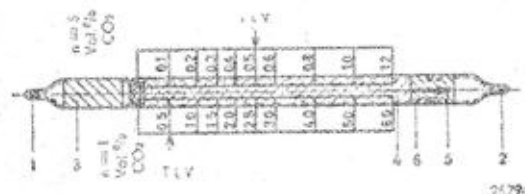
There are five different tubes available for CO_2 measurements. These cover the ranges 0.01 - 0.3%; 0.1 - 1.2% and 0.5 - 6%; 0.5 - 10%; 1 - 20%; and 5 - 60%. The tube "Carbon Dioxide 0.5%/a" (0.5 - 10%) is the most suitable for cave conditions. Less than 0.5% CO_2 doesn't matter, and at more than 10% CO_2 you are probably dead without breathing equipment. The tubes come in packets of ten for \$6.10.

The tubes consist of a sealed glass tube. For use the two sealed tips are broken off in an eyelet on the pump. The open tube is inserted into the pump with the arrow on the tube pointing towards the pump.

The tube is filled with a white powder, consisting of hydrazine (N_2H_4) and Crystal Violet deposited on silica gel. As air containing CO_2 is drawn through the tube the CO_2 reacts with the hydrazine to form carbonic acid monohydrazide. The crystal violet acts as a redox indicator and turns purple.



The distance the violet colour moves up the tube is proportional to the concentration of CO_2 in the sample. The tube is calibrated in Parts per Million and Percent. If a negative result is obtained the tube may be used again with reduced accuracy caused by the normal CO_2 in the atmosphere.



DRÄGER tube carbon dioxide

- | | |
|---|--|
| 1 & 2 Fused tips | (numerical values in Vol. % CO_2) |
| 3 Recording surface | |
| 4 Indicating layer (white) with measuring scale | 5 Arrow (should point towards pump during testing) |
| | 6 Cover film |

References: BEILSTEIN "Handbuch der organischen Chemie" 4th Ed. Vol3, p98.

"Operating Instructions 2341e Multi Gas Detector Model 21/31."

"Concentration Determination with Dräger Tubes 2340e."

"Detector Tube Handbook." Kurt Lechnitz

these three published by Drägerwerk, Lübeck.

FOR FREE LOAN

A DrägerGas detector is available for all trips going to areas where CO₂ may be encountered. Conditions of use are:

1. Unit to be looked after and kept clean.
2. Any damage caused to be kept clean.
3. Tubes to be paid for - 61c each.

This unit is available from Rik Tunney.

FOR SALE

A limited number of Oldham Weat type W batteries. 11.5 aH. Sep71. These batteries have been used by a mines rescue group and have thus been well looked after.

Cost \$4. See Rik Tunney.

WANTED

Trip reports and articles for the newsletter. Preferably typed onto a stencil (available free from the society). Leave a 1cm margin on top and both sides. Send direct to Rik Tunney PO Box 176 Fairy Meadow 2519.

SMH Tue 12MAR74

BODIES RECOVERED Adelaide Mon -

The bodies of three Sydney scuba divers missing since May 28 have been found in a sink-hole about 16 miles south of Mount Gambier.

They were Miss Christine May Millott 19, of Beverly Hills, Mr John Henry Bockerman 20, of North Parramatta, and Mr Gordon John Roberts 28, of Cabramatta.

The body of Mr Stephen Millott 22, Christine's brother, was recovered in January in the second of three police searches in the extensive underground network.

The remaining three bodies were spotted by Melbourne divers on Saturday. Police said two bodies were at 195 ft deep and the third at 210 ft.

"Picturesque NSW

An illustrated guide for Settler and Tourist."

- T.A.Coghlan N.S.W. Govt Printer 1903.

"Perhaps the most widely known object of interest to visitors to New South Wales are the limestone caves at Jenolan. The fantastic formations of these caves, their fascinating recesses and grottos, filled with crystals of dazzling brightness, with sparkling stalactites and glistening pendants, render them more beautiful and attractive than those in any other part of the world.

"The Caves are in a limestone belt, which varies in thickness from 200 to 400 yards, and through this formation the creeks have worked their way by subterranean channels, thus carving out through countless ages fantastic tunnels and chambers. The caves which are usually shown to the tourist are situated in a saddle between the two hills from whose summits descend the Mount Victoria and Tarana Roads. The Mount Victoria Road approaches the Caves House (which stands in the bottom of a little basin among the smooth-sloped hills and rough walls of limestone) through the Grand Arch, an irregular tunnel, about 200 feet broad and seventy feet high, which penetrates a portion of the limestone belt. Within the Arch a steep flight of steps leads to the entrance of the Imperial Caves, where a thousand natural marvels glitter in the electric rays. Here are lovely stalactites and stalagmites in endless variety - marble pillars, icicles, miniature cities, statues, frozen cascades, shawls, caskets of jewels, and curtains of delicate lace. Some of the formations are snowy white; others are grey, deep red, yellow, or the colour of ripe apricots. Through a dim tunnel, below the general level of the floor, the underground river flows from mystery to mystery. In the Lucas Cave, which is entered near the summit of the hill above the Grand Arch, the most impressive object is the "Cathedral", with its dome 300 feet in height. The decorative formations are fewer than in the Imperial Cave, but one is awed by the magnitude of the chambers and the appearance of gloom and chaos about the deep recesses and the tumbled rocks - "rude fragments of an earlier world". A similar sense of vastness is imparted by the Nettle and Arch Caves, with their colossal and monstrous shapes. The Devil's Coach-house possesses features which make it one of the chief attractions of Jenolan, and it has not the drawbacks of clamminess and gloom. It is thus faithfully described by Mr. Brereton, in his lazy narrative "Landlopers":- "The Devil's Coach-house is a huge cavern or arch, through which in floodtime runs a creek, violently struggling, tossing tawny arms, and fighting its passage over and between the boulders which block its course. The light penetrates the larger entrance of the chamber, and at certain hours there is a spillover of sunshine from a pear-shaped hole in the roof. The said roof is 275 feet from the floor. In the walls are innumerable ledges, crevices and caves, the playgrounds of rock wallabies, and from the roof hang stalactites of pink and green calcite. The wonderful blending of colours in this magnificent hall can only be appreciated after loving study; but the grandeur of its proportions should strike even the most flippant dumb." Then there is the Carlotta Arch, and, further on, the Elder Cave with its maze of tortuous passages.

"In the Right Imperial Cave is the Chamber known as the "Crystal City", where tiny ramparts and walls of crystal will be found enclosing a fairy city to all appearances alive with a mighty population of armed citizens. The Jubilee Cave, decorated throughout with pure white stalactites, here and there relieved by those of amber tint, and the Aladdin Cave, embellished with clear crystals,

brighter than the sparkling stars, are exquisitely beautiful, and once seen linger in one's memory.

"How far the caves extend, further exploration alone can reveal; but the limestone belt has been traced for thirty miles, and probably stretches underground as far as the quarries at Marulan on the Southern Line."

Four photos- "Road through Grand Archway Jenolan Caves"
"Sculptor's Studio, Jenolan Caves"
"The Willows, Jenolan Caves"
"Crystal City, Jenolan Caves"

Illawarra Mercury Wed 13MAR74

DIVERS FAIL

Fatigue and depth yesterday beat a bid by S.A. police divers to recover three skindivers who drowned in a sink-hole near Mt Gambier last May. Two divers got within four and a half metres (15ft) of two of the bodies, which were lying together on a ledge about 61 metres (200ft) down, but were forced to surface when overcome by tiredness. The third boy was sighted by torch light about six metres (20ft) below the others.

JOHN DUNKLEY's new address is:

Flat 13 Garra Place GARRAN ACT 2605

Phone STD062-810664

Next time you are driving through at 2 am stop in and say hullo.

ERRATUM

SUSS Vol 13 No 11 P 141 (Yes that is this issue.)

Conditions of loaning of Dräger should read:

" 2. Any damage caused to be repaired or paid for."

APOLOGIES

In the February issue of SUSS we published a map of Exit Cave and a page of speleological society badges. Unfortunately we failed to acknowledge the source which was the front cover of ASF NEWSLETTER.

In addition the map of Grinning Monster Lake which accompanied an article on Mammoth Cave came from "The Exploration and Speleogeography of Mammoth Cave Jenolan Caves" by J.Dunkley and E.Anderson.

The society (editor) wishes to apologise for this oversight.

Trip Report: BUNGONIA 2-4/ 2 / 1974.

Party: Leader Tony Austin (SUSS)
Cathy Lawlor(SUSS); Steve Warrell(SUSS); Geoff Turner(SUSS); Jan Turner(SUSS)
Duncan Coles; Jenny Coles; Robert Matthews; Sally Weekes; Bronwyn Geary.

The aim of the trip was to introduce Jan and Geoff to Bungonia and Rob and Sal to caving. The party left Sydney at about 5 O'clock Saturday morning and regrouped at Marulan some two hours later. It was at this point that I discovered that I had a puncture and was forced to go into Goulburn while the rest of the party continued onto the caves. The weather was overcast with intermittent light rain so everyone was keen to start caving right away. It was generally agreed that a horizontal cave would be best to start the trip and the cave chosen was B35 - Hollands Hole. This was to be followed by a more interesting (ie - vertical) cave - namely B84 - College Cave.

B35 - HOLLANDS HOLE:

The trip through the first part of this cave was quite uneventful - we went straight into the Root Chamber and all admired the pretties (that is what is left of them!). At the top of the chimney into this chamber is a tin can containing a visitor's survey put there by the Moss Vale Field Geology Club (?). This was filled in as requested. We then moved down to the Hip Hugger squeeze but as certain members of the party were rather loath to attempt it we went no further. The largest member of the party was able to get through with difficulty and I am sure enlarged the hole in so doing. The cave was quite wet and many members of the party reported having headaches, some quite severe, so it appears that the CO₂ may have been high in the vicinity of the squeeze. Less than two hours was spent in the cave.

B84 - COLLEGE CAVE:

This cave is a good one for beginners in that it contains elements of all the techniques required in caving ie climbing, laddering, squeezing walking and crawling. The beginners(not to mention most of the oldies) found the initial climb and traverse rather challenging and the climb that followed did little to lift spirits until some bright spark found the easier route. The 15' pitch, which we laddered, provided the necessary comic relief. The air in the main chamber was showing the first signs of increased carbon dioxide though at no time was it sufficiently high to be uncomfortable. A few things of interest were noted in the main passage just after the main chamber. The formation on the roof was covered with flood debris indicating that the cave must flood to a very high level. As the formation was not much damaged it can only be assumed that the water builds up slowly and takes a fair while to flow away - not a good sign for the dig at the bottom!

Bob, Sal and I went to the end of the cave where we found the air to be moderately bad. In the dig our progress was halted by a large family of frogs - about ten in all. The return trip was uneventful with the usual well worn knees from the chimney. We were in the cave for nearly 3 hours.

B44 - GRILL CAVE.

After lunch the party wandered over to the Grill - no trip to Bungonia being complete without a visit. We did the usual round trip - not going much below the Crystal Palace. The air was quite good and the cave was observed to be quite wet.

Sunday was spent on a very enjoyable walk down the Efflux track to the Creek and from there to the junction with the Shoalhaven. After a most welcome swim we came out via the Mt. Ayre track.

We stopped to have a look at the Efflux on the way down. Part of the trench has collapsed again though the entrance is still open. The water was its usual green, cold self - the siphon flowing a little faster than usual. The large Cedar tree near the cave was observed to be looking quite healthy and the note reporting the state of its health duly noted.

Where the track from the Efflux meets the creek we found no flowing water but heard the sound of water emerging quite loudly from a crack in the cliff next to the creek bed. It is thought that this is Bungonia Creek flowing underground at this point (James - pers. comm.). On the whole the creek was found to be at quite a low level though the Shoalhaven was quite high and flowing very rapidly. The walk out took its toll of the less fit members of the party. The round trip was about 7 hours.

After recovering from the walk the party set off for Sydney and a good sleep.

Tony Austin.

Trip Report: BUNGONIA 9 - 10/2/74
Party: Tony Austin(SUSS), Duncan and Jenny Colos.

The main aim of this trip was to return to Marulan to pick up Duncan's Jaguar which had met with an unfortunate incident the previous weekend. As we had come so far all ready it was decided to continue to the reserve and continue work on our current project - the re-opening of B15. We spent the largest portion of Saturday digging and by the time we decided that a swim was in order we had made quite a lot of progress. More digging was done on the Sunday as well as more swimming and a bit of real live caving just to keep the hand in. By the time we left for Sydney on Sunday afternoon the dig was well on its way - the passage we are following is quite large with a big air space. It is at present full of coarse silt with a few small rocks. The passage length was about two 'me's' which isn't a bad start to what could prove to be a most rewarding venture.

It was not to be the usual uneventful trip home - Duncan threw a tread at reasonably high speed which rapidly shredded one of his tyres. Needless to say the spare was under all the caving gear - could it be anywhere else?

Trip Report : BUNGONIA 19 - 20/1/74

Party: Tony Austin(SUSS , Cathy Lawlor(SUSS), Bronwyn Geary.

As this was Bronwyn's first trip to Bungonia we spent Saturday morning doing the Grill and the one and only B50. The afternoon was spent doing the preliminary clearing and planning for the dig we are starting at B15. This cave has quite a long history - being originally reported open by Trickett at the turn of the century. The cave was dug open by a team in late 1964 - though only after much hard work. Within 12 months the cave had silted closed again though not before revealing that it could become the long sort after connection to the B4-5 Extension. The cave has remained closed since 1965.

Ian Carpenter Equipment Pool

This is the name given to the SUSS gear. Ian Carpenter was a member of SUSS. To pay for new equipment and the upkeep of present equipment, the Ian Carpenter Equipment Fund has been formed. This will be financed directly from trip fees. The fee will be 30¢ per person and will be rigidly enforced.

NEW MEMBERS

At the March committee meeting the following persons were admitted to full or associate membership:

M.J.Walker D.Phil., M.A., B.M., B.Ch. Full member

Michael has done much caving in Britain and Europe and has recently joined the staff of the uni.

Glenda Mackay - Girl Caver? Full Member.

Glenda has been a prospective for so long that it appeared she was a fixture. She is to be found in the Geology department blowing a flute.

Keith Oliver Associate Member.

Keith is a well known member of Highland Caving Group.

Tony Austin's new address -

Flat 4 47/51 Frederick St Ashfield.

THIS IS THE END OF VOLUME
THIRTEEN.

This issue collated and stapled by 1st Beaton Park Venturer Unit.