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GEOGRAPHICAL REVIEW

Published by The American Geographical Society of
New York, January, 1973.
VOL. 63, NO. 1.

KARST : Important Karst Regions of the Northern Hemisphere. Edited by M. Herak and V.T. Stringfield. xiv and 551 pp; maps, diagrs., ills., bibliogrs., indexed. Elsevier Publishing Company, Amsterdam, London, and New York, 1972. $35.00 9¾ x 6½ inches.

KARST : By J.N. Jennings. xviii and 252 pp; maps, diagrs., ills., bibliogr., index. (Introduction to Systematic Geomorphology, Volume 7). The M.I.T. Press Cambridge, Mass., and London, 1971 $8.95 8¾ x 5½ inches.

The impetus behind both of these monumental publications was to bring together surveys of current karst research and to provide interested geomorphologists and hydrologists with fundamental data, sometimes accessible only in obscure foreign language publications. Both volumes have succeeded in varying degrees.

Around the turn of the century early theoretical concepts in the now classic Dinaric karst area of Yugoslavia used the idea of erosional relief cycles to explain karst evolution schematically. Early researchers recognized the important relationships between soluble and insoluble strata as well as the influence of the soil mantle, but they concentrated their efforts on the interpretation of surface landforms. Independently, explorers who studied the origin of caves were concerned with the nature of subsurface water circulation through fractures, fissures, and joints; they tended to deny the existence of the water table.

The synthesis of surficial karst evolution studies with the subsurface circulation relationships marked the second phase of karst research, beginning in the 1930's. Speleogenetic theories developed along two paths - cave development at random depth below the water table (deep phreatic theory), and development above the water table (vadose theory). The views now generally accepted recognize that either of these extremes, or even a compromise with postulated major development within the water table's zone of fluctuation (shallow phreatic theory), may be equally valid.

It is now accepted that surface landforms and subsurface groundwater circulation are intimately related in the evolution of karst. The landforms are fundamentally dependent on the inherent chemical and physical properties of the bedrock and its position in the stratigraphic sequence, on tectonic controls, and on climatic factors. The current trend in karst research is to interpret a karst landscape in terms of all these factors rather than of its relative position within a postulated classical erosional cycle. This current trend is recognized in both books.

In the Herak-Stringfield volume these factors form the organizational basis for each of the chapters, which are contributed by various authorities on the karst of thirteen Northern Hemisphere nations : Yugoslavia, Italy, France, Germany, Austria, Hungary, Czechoslovakia, Poland, Rumania, the Soviet Union, Great Britain, Jamaica, and the United States. Significant emphasis is given in each of the chapters to how research can increase the use of karst areas for human benefit, particularly in the areas of power-dam engineering, water supply, and land use. The Jennings volume is organized in a classical textbook style, with chapters on the karstification processes, types of karren, hydrology, surface landforms, cave genesis, cave deposits, the

Geographical Review Contd.

relations between climate and rates of karst denudation, the influence of geologic structure, and so on. In contrast, the Herak-Stringfield volume is organized by country and is less a textbook of principles than a synthesis of available field data, an approach that results in considerable repetition of basic ideas throughout the text. Both volumes provide excellent review chapters on the historical development of concepts of karst geomorphology and hydrology.

Adherence to the still important tradition of descriptive geomorphology based on interpretive genesis is the general theme of the Herak-Stringfield book. In my opinion the failure of the editors and authors to recognize the almost overwhelming trend toward more sophisticated quantitative considerations of the physics and chemistry of the karst-forming processes greatly detracts from this otherwise comprehensive review. Jennings' recognition of this trend and his use of it in the organization of the chapters makes his volume perhaps one of the best guides in English to contemporary thought on karst. Jennings provides introductory, but generally thorough, discussions of current research problems and trends of study of the geochemistry of karst waters, subsurface stream and flow dynamics, morphological analysis, and even isotope geochemistry in paleoclimate and age dating interpretations from cave deposits.

An organizational problem of the Herak-Stringfield volume is terminology. The criteria for classification of karst areas is inconsistent throughout the book and reflects each contributor's own experience. The editors have themselves succumbed to this fault by classifying the karst areas of the world into two broad categories : geosynclinal and epicontinental. Unfortunately, neither of these two terms appears anywhere in the more than 500 pages of text that precede their use in the concluding summary.

Both volumes are well illustrated, though a generalized location map of Northern Hemisphere karst areas for the Herak-Stringfield volume and a world map for the Jennings volume would have been welcome. Future editions of the Herak-Stringfield volume are planned, and they should include revisions of the outdated statistics on cave size and depth records (French and American especially.) Geographical coverage in the Herak-Stringfield volume is thorough for Europe but is heavily weighted toward the Old World part of the Northern Hemisphere and totally ignores Canada and Mexico. This reviewer would also welcome consideration of Asia, particularly the extensive karst terrains of North Vietnam and southern China, and of the North Pacific islands, Similarly, a selection from North Africa (Morocco, for example) would be enlightening and would better justify the title of the book. The Jennings volume rounds out the worldwide scope with substantial example from the South Pacific, reflecting the author's own experience.

The Jennings volume provides an understanding of karst geomorphology and processes, and a reading of it enables a person unfamiliar with karst beyond the superficial and often erroneous discussion in most geomorphology texts to benefit much more from the highly detailed, geologic-report style of the Herak-Stringfield volume. Together the books attempt to fill two gaps that have existed not only in the English-language literature but also in the world literature. Perhaps this gap can be fully closed in the future with the publication of a mathematically rigorous text on the chemistry and physical dynamics of the karst processes. - PAUL L. BROUGHTON.

AUSTRALIA SET TO CHISEL ITS MARK ON ANCIENT INDUSTRY.

Sydney Morning Herald,
27th December, 1972.

Next year should see Australia become one of the world's leading producers of dolomitic marble.

While marble will never vie in importance with the country's massive metal, natural gas and other minerals, the establishment of a marble industry here could be a prestigious event for Australia.

According to Italian experts, Australia has some of the world's best marble deposits. The Italians are the undoubted leaders in the field. Their penchant for working in marble has made Italy the premier centre for the export of finished products. Australia even has some very large deposits of types of marble comparable with that used centuries ago by Michelangelo from the quarries of Carrara.

The Australian marble industry is growing up mainly as the result of the formation of Kinetic Mining Ltd. in January, 1971.

The company has substantial marble deposits in the Wyloo area of the Pilbara in Western Australia.

CAVES ARE A DREAM COME TRUE.

Sun, March 27th, 1973.

The discovery of 20,000 year-old cave paintings in France was a schoolboy's dreams come true.

Jacques Marsal and three friends discovered the caves of Lascaux in September, 1940. They were hunting for hidden treasure in the woods above the central French town of Montignac. Jacques burrowed through a crevice and stumbled upon "the Sistine Chapel of prehistory." Ever since the caves have attracted scholars from all over the world.

More than 30 years later Jacques is the guide and curator for the caves. He lives in a little cottage nestled in the pine forests overlooking the Dordogne Valley. "This place is my life, I don't want to leave it," he says. "There were four of us that day, all aged about 15. Two were refugee children from Paris and we two were from the area. First of all we discovered a small hole and cut through it with a knife for an hour, and then clambered headfirst down a sort of chimney into the caves. We were scared certainly, but like all young boys we egged each other on. We only had a little oil lamp and couldn't see much. At first we were pretty excited because we had found a cave. You can imagine how we felt when I lifted the lamp and suddenly saw a wall covered with paintings."

During World War II, Jacques was deported to Germany, but returned to the region after the war.

Up to 1963 about 3,000 tourists a day queued to see the caves. Then a green moss, caused by a combination of bacteria and carbon dioxide, breathed out by visitors, was found to be destroying the paintings. After a research program the disease, known locally as "the green leprosy," was conquered.

Caves are a Dream Come True Contd.

It is overcome by dimming the lights creating a steady flow of air through the caves and keeping humidity at a constant level.

But the number of visitors also had to be cut to a maximum of 25 a week. Visitors are only allowed to stay in the caves for half an hour at a time. To compensate the unlucky ones a complete replica is being built nearby.

Jacques first takes the visitors into a hermetically sealed corridor at the entrance, then guides them in pitch darkness into the caves. After a brief pause, he flicks on the light and with a dramatic flourish of the hand says "Voila."
Three separate caves are covered in paintings and engravings. They show prehistoric hunting scenes with bison, bulls, horses and stags cavorting across every available inch of wall space.

The visitor, thanks to the excellent lighting and Jacques enthusiastic explanations has the feeling of being propelled back into the Stone Age.

L. Baker.

The Last Word on .....

LIBELLED BATS.

New Scientest.

Good news these days is hard to come by but it does seem from recent bulletins that our gentle British bats may at last be making progress towards recovery from their long and nasty attack of the Bram Stokers. Serious damage has been done to their public image down the years by Count Dracula, in bat-impersonation, flapping across our cinema screens to feast on lilywhite portions of extremely foolish virgins. Whereas, in fact, of the world's 1200 known varieties , only the Vampire bat of tropical America has a taste for animal blood and, even so, almost never bites humans. All 15 of our native British species are strict haema-teetotallers and its a wonder that the Central Board of British Battery never took the Count's creator to court for defamation of pipistrellean character.

Russian scientists, anxious to cut down the use of pesticides, are trying to increase their country's population of bats as predators on crop-destroying insects. They are setting up suitable places in forests for female bats to rear their offspring and similar methods are now being tried in Dorset as part of a nationwide campaign to save British bats from extinction. Our existing population of flitter-mice is rapidly running down because the insects they feed on are already lethally contaminated with pesticides. Their decline is also being fastened by people suffering from Count Dracula syndrome who do not realise that bats are harmless creatures and therefore destroy them in large numbers. Vicars are reported to be particularly concerned to have bat colonies removed from their church towers, but this may perhaps be due to the fear of unmannerly remarks about their having bats in their belfries.

Such late solicitude from Homosapiens is only reasonable because the bat has consistently aimed to be helpful to its non-flying fellow mammals. Ariel might have been earthbound without one ; Macbeth would have missed his horoscope if the witches had lacked wool of bat to add to tongue of dog and other dainties in their prognosticatory brew

The Last Word on ..... Libelled Bats Contd.

and Maud may never have been lured into the garden if the black bat night hadn't thoughtfully flown. The great appetities of our resident Chiroptera lead them to destroy myriads of fast-breeding pests, a voracious lead being given by Noctule, out great bat, which is estimated to eat up to half its own bodyweight of insects in a day. The Guano bats of Mexico and the US southwest provide the local human inhabitants with loads of one of the world's richest fertilizers and also scoop up such quantities of insects in the course of production that, in Texas alone, they are reckoned to devour 6600 tons of agricultural pests annually. The gentle bats put us on the track of echo-sounding, inspired the gargoyles which scare the devils away from cathedrals and, contrary to old wives' tale, are not addicted to tangling themselves in ladies' hair. So far as research can establish there is no authenticated record at any police station, hospital or hairdresser's shop of any lady coming in to report a live bat caught up in her coiffure. And if one ever does it'll likely be because she's got some particularly pestiferous insects shacked up in her back-combing.

Nita Treharne.

CAVES VENUE.

Penrith Press,
13th June, 1973.

World famous Jenolan Caves is the venue for the first Australasian conference on cave tourism, to be held in Jenolan Caves House from July 10th to July 13th.

Sponsored by Australian Speleological Federation, the conference will pursue topics involving administrators and staff of tourist caves, speleologists and tourist authorities generally.

R. Jarvis.

SYDNEY WATER BOARD JOURNAL for October, 1972 contains an article "Fred Says" by Phil Dorter on the Warragamba Catchment. It has seventeen first class photos, some in colour, including shots of the Chapel on Scotts Main Range, the Kowmang River, Yerranderie, etc.

K. Pickering.

ANYONE who is thinking of brushing up on their geology could contact Alan Fairweather, who has recently required a mammoth 1288 page Tome called "Principles of Physical Geology", by Arthur Holmes and published by Nelson.

It is extensively illustrated with photographs, maps and diagrams and is well indexed. The text is very readable and contains many pages to interest speleos.

K. Pickering.

X - RAYS TO SOLVE PYRAMID SECRETS.

Sun, 10th April,1973.

A team of Cairo University archaeologists have discovered the tomb of the priest who mummified the body of King Chefren.

Chefren is the pharaoh who was buried in one of the great Giza pyramids more than 4,000 years ago. The discovery is considered an important one as it may throw light on the whereabouts of the pharaoh's tomb, which has never been found. The archeologists unearthed the tomb of the priest, Ibis Raa, during excavations ona site west of the three huge Giza pyramids on Cairo's outskirts. They found a fine limestone statue of the priest inside the tomb along with a mural which is now being restored to see if its inscriptions provide new clues to the location of Chefren's burial place.

Cairo University officials said the priest supervised the mummification and burial of King Chefren who ruled from 2680 to 2563BC. The search for the royal tomb and treasure house, which are believed to be hidden somewhere in the vast second pyramid, has been going on for more than a century. During the past four years experts from the Laurence Institute of Radiation at the University of California at Berkeley, and from Cairo's Ein Shams University, have been methodically x-raying the massive six million ton structure in an attempt to discover the hidden chambers. First stage of the huge operation has been completed and one-fifth of the pyramid has been x-rayed. Special equipment is being used which measures cosmic particles from the sun's rays striking the pyramid's sloping walls. These particles, called muons, can penetrate earth or masonry, but are slowed down in the process. They speed up when they pass through a cavity or passage. Most chambers in Egyptian pyramids were ransacked long before archeologists located them.

Italian archeologist Giovanni Belzoni found one chamber in the Chefren pyramid in the early nineteenth century, but it was empty.

L. Baker.

MAPS GO METRIC.

The New South Wales Department of Lands has changed to metric units in the compilation and production of its topographic mapping at 1:25000 and 1:50000 scales.

A recent publication at 1:25000 shows the grid in unitsof 1000 metres and a contour interval of 20 metres. Spot heights are shown to the nearest metre, road destinations show distances inkilometres with imperial equivalents in brackets.

From M.C.B. Newsletter, V 1, No.6
April, 1972.

The New South Wales Registrar Generals Department has published a fourteen page booklet of metric conversion tables devoted entirely to land measurement. Available at 30 cents from the Government Printer.

K. Pickering.

HISTORICAL FEATURE

from Wanderings in New South Wales - The Journal of a Naturalist Vol.1

by

GEORGE BENNETT FLS

London, Richard Bentley, 1834.

Some caves have been lately found in the limestone rocks about this selection; and since the valuable discovery of fossil bones in those at Wellington Valley, by Major Mitchell and others, limestone caverns have become one of the colonial lions; these, therefore, were pointed out to me as objects of great curiosity; I found them however very small, and they did not repay the trouble of getting into them. They resembled the small caves often seen in the limestone quarries of Plymouth and Oreston, in Devonshire, from which some valuable fossils have been procured; stalactites of course abounded, but neither fossils nor any red calcareous earth, in which those remains have usually been found deposited. Among a quantity of dust were several loose bones, which had been at first described to me as fossils, but which were the breast bones of dogs, which no doubt had been placed there by the natives, for the tibiae of the emu (here called Bereban by the blacks) had a hole at the upper and anterior part; this perforation is made, as many of them afterwards told me, to enable them for readily, by admitting air, to suck out the rich marrow from the lower end, which was broken for that purpose. The extent of the cavern was from fifteen to twenty feet; the entrance so narrow, that the explorer could only enter feet foremost, nor was it suffieiently large in the interirr to enable him to stand erect. About sunset we returned to Yas, having a fine moonlight night for our journey.

1832 On 19th November I visited the farm of 'Gudarigby' the property of W.H. Dutton. Six miles further on reached 'Narrangullen' a fine flat. At the farm, close to the Murrumbidgee River and on the almost perpendicular side of a limestone hill, which rises in the midst of this wooded valley, the rocks partially scattered with herbage, shrubs and stunted casuarina-trees, is the entrance to a spacious cavern, there are others of smaller size sprinkled about different parts of the same mass of limestone, but this seems to be the most spacious; they were originally pointed out by the natives to the overseer of the farm, but were first explored by Mr. Dutton, and some friends.

The day after our arrival we visited the cave, taking materials to produce a light, by which we might explore these recesses with more facility. The approach to this cavern is through a thick jungle of grass, reeds, veronica, fern brake, (Pteris,) &c. : much caution is required, more particularly when on horseback, on account of the number of wombat burrows which abound about the spot. A slight ascent brought us to the spacious and lofty entrance into which the horses were easily led, and conveniently stabled; this may be truly said to form the waiting-hall for admission into the two ranges of chambers which branch off in different directions, as seen in the accompanying diagram of a supposed section.

Historical Feature Contd.

The entrance is probably about eighteen or twenty feet broad, and thirty or forty feet high, abounding in large stalactites, incrusting and pending from all parts of the interior, as well as separate masses like columns, supporting the roof. Having made a fire and lighted our torches, we entered the cavern to the right, (A in the diagram,) and ascending over some loose earth, entered a narrow vestibule, capable of admitting only one person at a time; it was encrusted above, and on all sides, by stalactites of various forms which presented a glittering appearance, as the light from the torches fell upon them. A number of a small species of bat, disturbed by our presence in their dark retreat, flew about, and we captured many of them : several of their skeletons pending from the rocks, indicated that it afforded them a mausoleum, as well as a retreat during life.

As we proceeded, the cavern became more lofty and expansive ; but although able, from the elevation, to walk erect, we were obliged to take care of occasional projections from the rocks on each side. As the light from the torches fell upon the white glittering fantastic forms of the stalactites which hung from the roofs and covered the sides, the effect was highly pleasing. We came at last to a descent of fine loose earth, in which some wombats had been burrowing, and much care was necessary to avoid falling into the gaping entrances. The descent having been effected, we found ourselves in the most lofty, beautiful, and spacious part of this extensive cavern; we termed it the "grand hall:" immense masses of stalactites, (to which fancied resemblance of forms had occasioned the names of the altar, organ-pipes, &c., to be given,) had a beautiful appearance : enormous pending stalactites adorned the lofty roof, and the whole scene had by torch-light an inconceivably grand and splendid effect. At several places the ground upon which we walked gave a hollow sound when struck, and masses of decomposed limestone were abundantly mingled with a fine black earth. Proceeding some distance further, we arrived at the termination. +

After our return from exploring the great cavern, we entered the smaller one; (B in the diagram;) its extent is limited, but the stalactites within were of great beauty and variety of forms; my attention was here attracted by the multitude of small bones mingled with dust, which lay near and about the entrance of the cavern; how they came in this situation merits enquiry, for here alone did I observe them; they appeared belonging to some animals of the Rodentia family, consisting of skulls and other portions of the skeleton, some, indeed nearly the whole, were in a perfect condition: near the spot I picked up a small mass of stalactite, which appeared to have been broken off from some portion of the cavern, but its exact position I could not discover, in which small bones, similar to those scattered about, were imbedded. The specimen I preserved and sent to England. ++

The atmosphere of the inner chamber of the large cavern is at times so close and confined as to produce sickness and violent head-ache, and cause many to faint who visit it, but we experienced no inconvenience, for although a hot wind blew outside from the north-east in strong and oppressive gusts, the inside of the cavern was cool and agreeable. The length of the cavern may, at a guess, be one hundred and twenty yards or even more; and the large entrance is about sixty yards distant from the Murrumbidgee river. The view,

Historical Feature Contd.

from the front of the cavern, of the exterior country was beautiful : swallows' nests, as well as the restless birds themselves, were numerous; and the "Currijong-tree" was also seen growing about the limestone ranges. The swamp oaks, or "Plow'y," of the aborigines grew here in abundance, indicating by their presence the course of the river.

The aborigines will not venture into the dark recesses of the cavern for fear of the "dibbil-dibbil," as they express it. In a small cave attached to this cavern a number of human bones had recently been found, which it was afterwards ascertained were those of a native female, and had been deposited here, (in accordance with a custom among the aborigines of placing the bodies of deceased friends and relations in caverns, hollow trunks of trees, &c.) about twenty years before.

++ The fossil bones found in the cave at Wellington Valley refer to eight species of animals, of the following genera :-

Dasyurus, or Thylacinus.
Hypsiprymnus, or Kangaroo Rat.
Phascolomys.....one species.
Kangaroo .....two, if not three species.
Elephant .....one species
Halmaturus.....two species.

Of these eight species, four belong to animals unknown to zoologists; viz

Two species of Halmaturus.
One species of Hypsiprymnus.
One species of Elephant.

Kangaroo - three species not easily ascertained.
Dasyurus is doubtful, no head having been found.

Edinburgh Journal.

S.M.S.C. T R I P R E P O R T S.

TERRY'S TASMANIAN TALES
or
"LIFE ON THE LIMESTONE ROCK"
PART 1

With the problems of settling in mostly overcome, your Southern correspondent allowed his thoughts to turn to caving. As he had some Sydney visitors to escort around the state, first on the agenda was a trip to the tourist cave at Hastings. This trip, and the events which followed, are described in the following trip reports.

Trip Report No. 1 - Newdegate Cave, Hastings - 14/4/73.

I joined the ranks of the tourists for the day to partake of the pleasures of a guided tour through the Newdegate Cave at Hastings. Although the Hastings area contains numerous caves, only Newdegate is open to tourists.

Situated 65 miles south of Hobart, it is reached by a pleasant drive through the Huon Valley, famous for its apple orchards - thousands of acres of them. The access road to the caves, nine miles from the Huon Highway, is unsealed and winds its way through thick forests into a glade of magnificent tree ferns, some of over twelve feet in height. In the midst of this glade is a thermal pool whose water is considerably warmer than the surrounding air.

There is little of the high powered commercialism of Jenolan in Tasmanian tourist caves. One simply leaves the car and walks through the ferns to the cave entrance, where the inspection fee is collected. When the appointed time for the inspection arrives, our trusty guide unlocks the gate, turns on the power and off we go into the wild black yonder.

Access to the cave is by way of a short, descending stairway onto a platform midway up one wall of the entrance chamber. It is a magnificent entrance. The roof is extremely well decorated and can boast some of the longest and whitest straws and stalactites I have seen. They are shown at their best by the lighting of the chamber which has been done in a very professional manner. One outstanding feature of the lighting throughout the cave is the concealing of both lights and cables so that the cave appears to have been untouched. Like most cave tours, only that portion of the cave which is fairly accessable was covered. Four chambers were seen, all containing excellent formations. The majority of the system is very active and most of the formations are wet. Parts of the cave have, in fact, been subject to severe flooding in recent years.. Newdegate Cave contains some two miles of passages which, naturally, were not covered during the tour. Our guide informed us that an underground river of unknown origin flowed through the lower levels of the cave although this was not seen on the tour. As the Souther Caving Society have been doing much in the way of exploration and surveying in the Hastings area, further information on said river will be sought from them. Temperature in the cave is a constant 9°C (48°F) and, as with all known Tasmanian caves, no bat life is present. Very few troglobites inhabit the cave and none were seen.

Of interest was a meeting with some members of the Southern Caving Society before entering the cave. I introduced myself, having cunningly deduced that they might possibly be speleos

Terry's Tasmanian Tales Trip Report No.1 Contd.

because they were standing around cars which sported "Southern Caving Society" badges and which contained bash-hats and the like. Quite a brilliant deduction on my part. My brief chat culminated in an invitation to attend their next meeting - in their own club room - and which is the subject of my next report.

Trip Report No.2 - S.C.S. Clubroom, Hobart - 18/4/73.

When it comes to caving the Taswegians have got it made. As well as living in the land of caves, the members of the Southern Caving Society can boast of having their own club room. Situated at the rear of 152 Davey Street in Hobart, only a couple of blocks from the city centre, it is a very convenient location.

I visited the clubroom for the first time during the week prior to Easter and was very impressed by what I saw. The club room is at the rear of an old home - now used as an office building and was originally an out house of same. With its bare sandstone walls and low heavily beamed ceiling it has a very convivial and cave-like atmosphere. This atmosphere is complimented by ropes, blackened billies and the like hanging on the walls. One wall is covered in fibre board making an ideal place to pin up maps, caving photographs and notices.

The club meets officially every second Wednesday night, and on alternate Wednesdays the members gather socially at the club room. On these occasions trips are planned, projects discussed and ideas exchanged. The club room is thus a focal point of the club's activities as well as being a storeroom for equipment. A large desk-cum-map cupboard is a key part of the set up.

I was treated to first class hospitality on this occasion and can certainly recommend it to interested speleos. As it is my intention to join S.C.S for the duration of my stay in Hobart, I have a feeling that during the coming year, the S.C.S. club room and I are going to see more of each other.

Trip Report No.3 - Mole Creek Area, N.W. Tasmania - Easter W'end,1973.

One of the projects under discussion during my first visit to S.C.S was the club's Easter trip to Mole Creek. As this area was only a few miles off the route of my planned Easter trip through North West Tasmania, my itinerary was quickly altered to include some caving.

Since the eighth Biennial Conference in Hobart, the Victorian Speleological Association has visited Mole Creek every Easter. This year nine V.S.A members as well as three C.S.S. speleos were at Mole Creek with S.C.S. Some members of the Tasmanian Caverneering Club, Northern Division, based at Launceston, also visited the area on a day to day basis. Your verbose author made up the entire New South Wales delegation.

Good Friday in Hobart was a classical example of the vilest early autumn weather that Tasmania can produce. Howling winds, sleet and snow were indicative of the weather throughout the State. Departure from Hobart was in a temperature of 6°C with no promise of any improvement during the day. I had hoped to travel from Hobart to Deloraine by way of the Lake Highway through the central highlands of the State. However, a diversion by way of the

Terry's Tasmanian Tales Trip Report No.3 Contd.

Launceston area was necessary as the Lake Highway was closed by snow! No wonder the average Taswegian hibernates from April to October - some dedicated speleos excepted.

Some weak patches of sunlight were traversed on the trip north, although for the majority of the journey the heavily laden Holden was buffetted by gusting winds and at times visibility was almost zero in blinding rain. Pushing on regardless, we reached the Wet Caves Campsite, about five miles from Mole Creek township, late in the afternoon. The interstate visitors were already established in camp, including the V.S.A. team in a large tent appropriately called "El Swarvo Castle". The dedicated wife of one V.S.A. member was cooking for most of the Victorians while the other wives had either stayed home or were touring Tasmania in a hire car leaving the men to get on with the serious business of caving. B.M.S.C wives please note!

The rain eased for just as long as it took to erect the tent. The cloud lifted for a few minutes to reveal a spectacular line of snow covered peaks to the south. These are the Great Western Tiers which rise to over 4700 feet and provide a catchment area for the streams which flow through the caves in this area.

After bedding down the younger members of the family I proceeded to the camp fire to swap lies and meet the members of the various clubs present. Unfortunately due to the lousy weather and the fact that many of those present had already had a hard days caving, there was an early drift away from the fire. A couple of the more hardy Victorians were still getting their ears bashed in the Corcoran tent well after 1 a.m. in best B.M.S.C. tradition. It amazes me to think of the things that speleos talk about in the scrub.

Saturday saw a slow start for most of the cavers with no improvement in the weather. I joined a party under the leadership of Mike Cole, S.C.S trip-leader for the weekend. Along with some Victorians and the Canberra bods I spent 6½ hours in Georgies Hall, an extremely pretty cave, although comparatively small by Tasmanian standards. The aim of the party was surveying and photography but I was more involved in simply looking over the cave. The survey team in fact was in the cave until 11 that night, completing a survey started by S.C.S some months previously. This cave is entered through a doline which also contains some magnificent tree ferns. The doline is half way up the side of a hill and because of the scrub, cannot be seen until one stands almost on the edge of it. S.C.S spent many days trying to locate the cave and the survey was intended to tie it in with other caves in the area.

On the Saturday night a couple of the V.S.A. members presented a programme of colour slides at the home of a local resident. I didn't attend and now regret not going. The relationships between the speleo club members and the local populace are excellent in the Mole Creek area. This, I suspect, is one reason why the V.S.A. members return every year as they can renew old acquaintances and enjoy excellent hospitality. Their dedication can be judged by their bringing a well equipped party complete with four wheel drive vehicles by sea from Melbourne.

Sunday morning brought a change in the weather. Although the rain had stopped and the skies had cleared, those Tasmanian winds were still howling. During the morning Mike Cole showed my two junior speleos and myself through another system near the campsite. Un-named though it is, it was worth seeing. This cave runs above and parallel to the present course of the creek and appears to be a former stream course. More information will be sought about it in conjunction with the rest of the Mole Creek area. During our tour the under ground sections of the creek were raging torrents but I believe that a few chambers on the lower level can be reached when the creek is lower.

Terry's Tasmanian Tales Trip Report No. 3 Contd.

We took advantage of Sunday afternoon's sunshine to drive around the township of Mole Creek and out to Marakiopa Cave, a popular tourist cave, seven miles west of the township. Due to lack of time no tour was undertaken, but a brief talk to one of the guides was very rewarding. This cave will be looked at later in the year.

On Sunday night, with howling winds and low temperatures it was again early to bed for all. At about 11 p.m. I had to take down the annex of the tent. The wind had reached gale force and had lifted my tent pegs out of the wet ground. We hurriedly transferred our gear to the car, braced the tent poles to the car and returned to bed. Have you ever lain in a tnet with a sewn in floor and felt yourself periodically lifted off the ground by the wind going underneath and then unceremoniously dropped back to the ground ? It's quite a sensation. After about an hour of this we noticed moonlight coming in through the top of the tent - the main seam was starting to give. Two sleeping children were transferred to the back of the car, tent dropped and a heap of rocks placed on top to anchor it. Then we retreated to the car which rocked half the night like a lifeboat in a typhoon. At daylight the scene was one of desolation. One laconic speleo was heard to mutter : "Not a bad night - only six tents gone." One V.S.A. member spent halft the morning looking for a missing air bed which was last seen heading west at a great rate of knots and a fair altitude. As far as I know he is still looking!

Although the morning was clear and calm, the damage to the tent was such that we called off the rest of our week long tour around Tasmania's west coast. As it is an area renowned for strong winds, and more winds were forecast, we reluctantly decided to head for home via the Lake Highway. The snow on it was gone - either washed out by the rain or blown out to sea in one lump. We packed up, bid our farewells and headed south. The journey home through the centre of Tasmania is tremendously scenic, climbing up the Great Western Tiers and along the Western side of Great Lake, a sixty square mile stretch of water nearly 3400 feet above sea level, a little higher than Katoomba. The road is unsealed for the first sixty miles and is a real horror stretch. The rattles in the Holden played a variety of tunes. However, I would recommend this road to anyone interested in mountain scenery. Make sure it is not in winter, though, when snowfalls are likely to close the roads for days at a time.

We reached Hobart late on Monday evening after a weekend I will remember for years to come. I gained a wide variety of experiences. These ranged from trepidation at trogging up while watching others climb into wet-suits and numerous layers of clothing under overalls and hearing tales of sump diving just to get into the caves, through to a great sense of satisfaction at having been able to meet and go caving with members of four other clubs in an area as varied and interesting as Mole Creek.

The weekend really served to whet my appetite for caving in Tasmania. I hope in the next few months to be able to pen a few more reports of caving in Tasmania, and attempt to explain some of the basic differences between the Tasmanian way of caving as compared with that of S.M.S.C. Those of you who have managed to stay with me so far will no doubt be interested in more news from the Limestone Rock so I'll endeavour to find time between trips to keep you informed. In the meantime do what I intend doing - read the official trip reports in the journals of the societies caving in Tasmania.

Terry Corcoran.

ABERCROMBIE

Date of Trip : February 17th and 18th, 1973.

Members Present : M. Treharne (L), U. Treharne, G.Fairweather, G.Knox (Superintendent), B. Marshall, I Bogg, K.Pickering, B.Richards.

At 8 a.m. Saturday morning we reported our arrival to the Superintendent, then Mike, Nita Gwen and George proceeded towards "Mother-in-Law's Breath." The purpose of this exercise, at the Superintendent's request, was to investigate the feasability of a connection between Trickett's Hole and the first switchbox in Cathederal Cavern.

Whilst walking upstream towards the Arch, our first observation was the profound difference in the countryside, abundant greenery after the drought-breaking rain. Burrangylong Creek was noted to be flowing again, the first time since October, 1972.

Upon entering the Arch, we noted that most decorations were again active, with evidence of soakage on the floors. The party entered M-I-L.B where the customary dust was still greatly in evidence. However, the Rimstone flow above the steel ladder was found to be filling up.

One member of the party was stationed at the top of M-I-L.B to act as a control to the remaining members who proceeded from the Cave to the Western surface of the Arch bluff, in the vicinity of Trickett's Hole. The Superintendent had informed the party that there had once been a unique and impressive feature, shown during Arch tours, known as "The Star of David." This beam of sunlight entered a hole in the side of the Arch roof, and shafted down through the vast Cavern to strike in the form of a star-like pattern on the floor. An earlier Caretaker had been forced to block the vent/the Arch roof following episodes of persons unknown throwing rocks through this vent onto the floor of the Arch. His method of blocking this vent had been noted on earlier investigations of the ceiling in M-I-L.B where a cement-filled hessian bag protrudes from the hole inside the Arch roof.

Following directions from the party member inside the Cave, via 2 way radio, the surface party located the area on the outside of the Arch which most likely contained the blocked hole, which was in the vicinity of Trickett's Hole. The party then located the end of the top chamber in M-I-L.B in relation to the outside of the Bluff, and were disappointed to learn that the choke in the bottom of Trickett's Hole, if cleared, would afford an entry directly above Cathederal Cavern track, just above the first switchbox, which was some 80 feet below.

Development of this area for inspections by visitors is therefore not considered feasible at this stage.

After a break for lunch, the party headed upstream to investigate an out-cropping which occurs some ¾ mile beyond the North end of the Arch. This was a surface trog only. This considerable mass of limestone yielded five possible cave entrances, varying from six to one hundred feet above creek level. Sunday morning saw our numbers augmented by the arrival of Ian, Ken, Barry and Brian. The party kitted up and headed towards "Boon's Hole" an area of collapse in the top of a ridge situated approximately one mile north of the Arch. This area was earmarked for further work during a surface trog during September 1972. On the way up to this area, the party observed the mass of limestone which was the subject of the Saturday afternoon trog, and it was decided to pursue investigation on the way back from "Boon's Hole." Upon arrival at our goal, we commenced clearing some of the piled up leaves and tree branches which partly obscured the entrance. The collapse was found to be in shale or other sedimentary rock and after considerable work,

Abercrombie Trip Report Contd.

a member of the party was able to make his way approximately 20 feet down from the entrance. It is thought that this possibility may go down towards the Limestone, which is approximately 150 feet below this level. However, considerable clearing of leaves and soil will be required.

One the way back to camp the outcropping previously mentioned was examined. Five caves were entered, but the usual problem of earth fill was encountered. Any further penetration of these sections would necessitate removal of copious quantities of soil.

The party spent Sunday afternoon photographing the immediate area of the Arch from the previously established survey control points to assist in the Geomorphological study, which is being undertaken. Upon completion of this exercise, the members spent some time discussing historical facts of the Abercrombie area with the Superintendent, in order to assist in formulating objectives of the next trip. The party reported out of the area at 7.15 p.m.

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WYBURDS LAKE CAVE.

Date of Trip : 25th and 26th March,1973.

Members Present : A. Fairweather (L), L. Baker, S. Thomas, P. Sammut, I.Bogg, R.Jole and R. Bloomfield.

The purpose of the trip was to further our knowledge of Wyburds Lake Cave and to do this two groups were used. One group led by the fearless Secretary ambled off to Wyburds main whilst the "three dusty ears" namely Paul, Bob and myself went below in the northern entrance. This entrance is located approximately 25 yards north of the main entrance at river level. Upon entry we took the right hand extension which has an inclined mud slope at the top of which is a keyhole. From this hole a ladder was lowered 20 feet to the floor of the next chamber. This chamber has a sinkhole in the floor of approximately 6 fee in diameter and mud filled, " a future dig, eh!" The hole at the western end of this chamber led to the main cave, near the Maze area. We then returned via the entry route and frolicked for a short time in the rock pile and made our exit at 17.30 hours.

Sunday dawned fine and mild and a return was made to the northern entrance for photography purposes then an early exit from the area and a quiet trip home via Kanangara Wallsand Hampton.

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WYANBENE.

Date of Trip : 19th and 20th May,1973.

Aim : To penetrate and see as much as possible and to go on to Frustration Lake. L. Baker (L)

As there were fifteen in the party, it was decided to break it into two groups. Myself leading the first party and Barry Richards leading the second. Mine, being the advance party, took in all the equipment and set up ladders where necessary. Finding no difficulty with the first section, we did a little splashing at the end of the water crawl. After this we proceeded to the Gun Barrel which we looked at for a while. On returning from the Gun Barrel we were met

Wyanbene Trip Report Contd.

by the second party. My party continued on to Caesars Hall, taking our time so as to allow the second party to go in to the Gun Barrel and then meet us in Caesars Hall. On the way to Caesars my party had fun on the mud slopes. From this point we continued on to Diahorrea Pot where we were met by the second party. At this point the leader of the second party, Barry Richards, stayed with us and the rest of his party plus two from mine returned to the surface.

After negotiating the free climb with Barry, then dropping the ladder for the others, we all went on to the lake, looking at the aragonite crystals on the way which were verynice. On the way out we found the rope would not slide, we then went back to the chamber between Gun Barrel and Caesars Hall, then we all started out for the entrance. On the way out we mettwo free lance cavers and after talking for a while we carried on to the last ladder pitch where we found that two of the party were absent. Stan and I waited there and the rest went out. Having waited for 30 minutes and not having heard from outside, we dicided to go out and get at least two members of the party that had gone out a few hours earlier. Whilst changing and having a hot coffee, two lights appeared at the cave entrance - a very good sight.

This was a long and eventful trip with lessons learnt everywhere.

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MAP DRAWING

The smell of pencil shavings and overheated erasers hung heavy in the air over Lapstone as the first meeting of the B.M.S.C (Blue Mountains Struggling Cartographers) got under way at the Fairweather residence on 26th May, 1973.

Those present were B. Marshall, A.and G Fairweather, L.Baker, J.Langejans, M and P. Sammut and M and U. Treharne.

The object of the occasion was to introduce interested persons to the basics of drawing cave maps. Items covered in the lesson were :

Equipment used, How to Interpret Survey Data,
Use of the 360° Protractor and Metric Scaling Rule and
how to Plot a Traverse in Plan.

A practical exercise in plotting a plan traverse from a hypothetical set of survey dataswas carried out at the end of the lesson, when it was discovered that the pupils had picked up in a couple of hours what their teacher had taken weeks to learn.

There is a set of notes available, which I hope are self explanatory, covering all items dealt with/in the lesson. Anyone interested may obtain a copy from the Fairweathers. Another meeting for the continuance of the course is to be organised as soon as possible.

A delightful repast of coffee and fresh bake scones was provided by Gwen after the lesson, thereby ensuring that all present finished the day replete with knowledge and good eats.

U. Treharne.

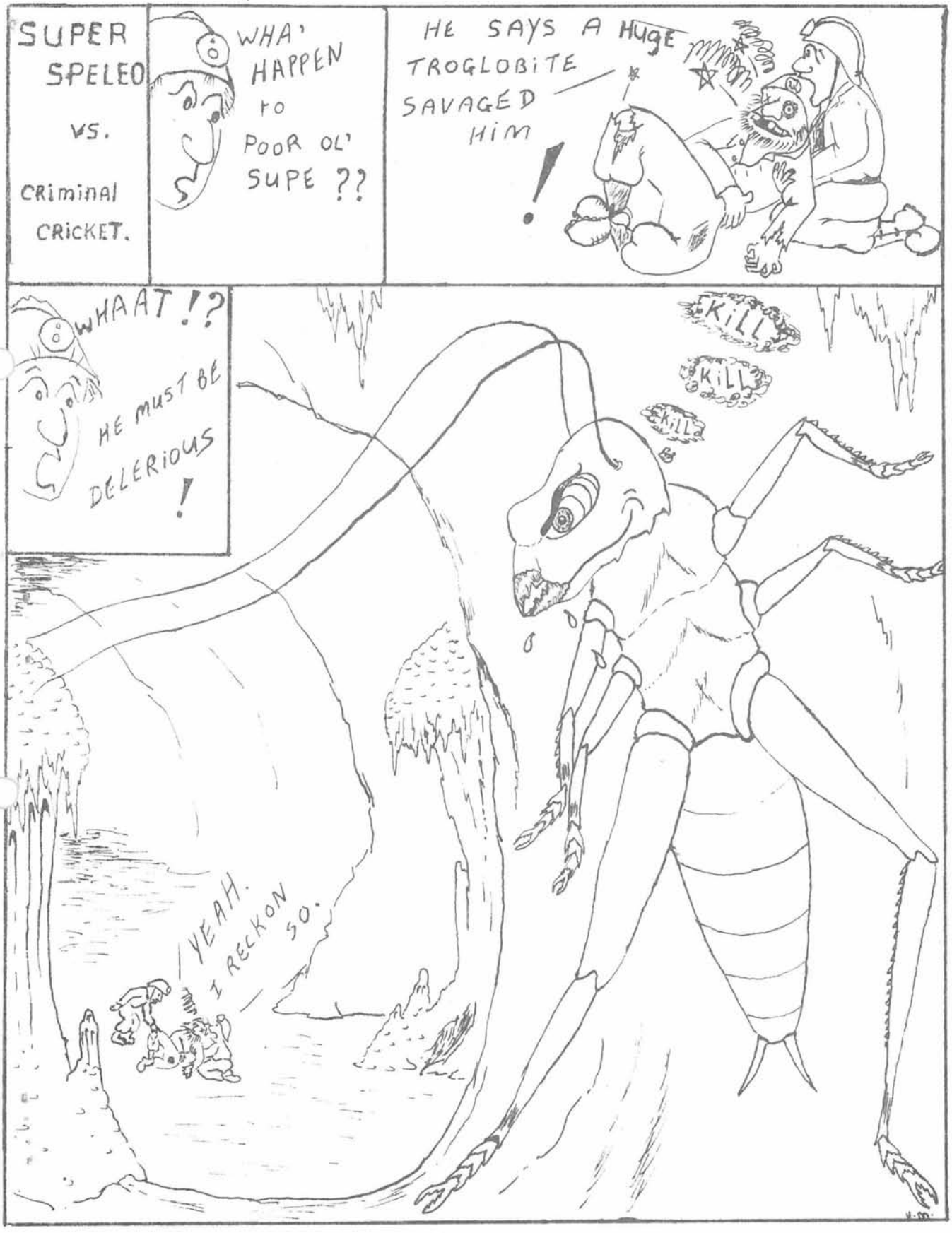
THE CLUB OFFICIAL.

If he is usually in the Club
- he haunts the place.
If he's not there when wanted
- he's never on the job.
If he talks on a subject
- he's always trying to run things.
If he reminds you of a Club rule you've broken
- he's always standing over the members.
If he is silent
- he has lost interest.
If he agrees with you
- he's a "yes" man and lacks originality.

If he doesn't agree with you
- he is ignorant.
If he takes a holiday
- he's been on one all the year anyway.
If he isn't well dressed
- he is not upholding the dignity of the club.
If he is well dressed
- he thinks he's a big shot.
If he's been on the Committee a long time
- he's in a rut.
If he's been on the Committee a short time
- he lacks experience.

If he tries to see both sides of a question
- he is two faced.
If he can't give you an immediate answer
- he is incompetent.
If he does give you an immediate answer
- he doesn't think things over.
If he appears aloof
- he should be trimmed down to size.
If he has a strong opinion
- he is bull headed.

(With acknowledgement to Blacktown Worker's Journal.)


SUPER SPELEO vs. CRiminal CRICKET.
WHA' HAPPEN to POOR OL' SUPE ??
HE SAYS A HUGE TROGLOBITE SAVAGED HIM !
WHAAT !?
HE MUST BE DELERIOUS !
KILL
KILL
KILL
YEAH. I RECKON SO.

OOLITE

Journal of

Blue Mountains Speleological Club

Vol. 5 No. 2

O O L I T E.

Journal of the Blue Mountains Speleological Club.

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VOLUME 5, NUMBER 2.

C O N T E N T S.

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Oolite. Vol.5 No.2.

A NOTE ON SURVEYING.

U. TREHARNE.

EQUIPMENT.

METRIC GRAPH PAPER:	The map is plotted and drawn on this.
ONION PAPER:	The completed map is traced onto this with black India Ink for the production of Dyeline copies.
PENCILS:	H or HB.
PENCIL SHARPENER or	
RAZOR BLADE:	To keep pencils really sharp.
SOFT ERASER.	
BLACK INDIA INK.	
BLOTTING PAPER.	
METAL EDGED RULER:	For use with pen and ink.
METRIC SCALING RULE.	
360° DEGREE PROTRACTOR.	

Having assembled this impressive array of gear, you now need only some survey data from which to draw your map. If you are blessed with a clear thinking and considerate surveyor, you will receive this data set out in a logical, routine format for easy interpretation. The other type, who starts out full of good intentions and winds up with reams of numbers, lines and vaguely obscene sketches need not worry you yet. (I still try to do my own drawing).

The data format which I try to stick to for line traverses is that shown below -

Fig. 1.

STATION	BEARING	INCLINATION	TAPE LENGTH.	PLAN LENGTH	REMARKS.
1 - 2	35°	-°°	3.65m.	2.88	1+ mark centre entrance. 2+ rock at bend in passage.
2 - 3					

Reading the columns from left to right, you are given the following information :-

Station (1-2) ; These are the numbers given to two survey stations. Say station 1 is at the mouth of a cave and station 2 is the furthest point that can be seen along a passage leading in from the entrance. A straight line between these two points is your traverse line of that passage.

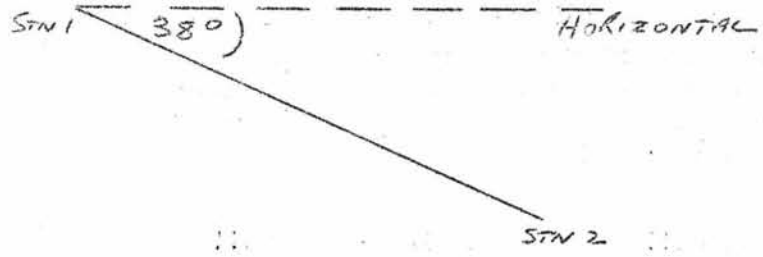
A Note on Surveying. cont.

BEARING (35^{o}). : A compass sighting taken from Stn.1 to Stn.2 shows that passage has a departure of 35^{o} away from North.

INCLINATION (-38^{o}) : A sighting taken from Stn.1 to Stn.2 using an inclinometer shows that there is a downward trend of the passage from Stn.1 to Stn.2.

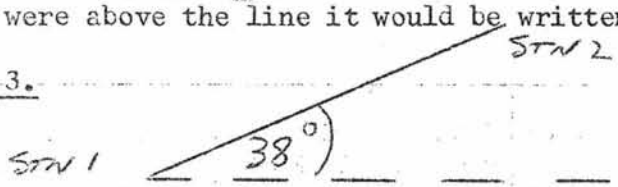
Envisage the passage in side view with a horizontal line throught Stn.1. The inclinometer is a type of protractor which measures the number of degrees by which Stn. 2 departs from this horizontal line.

Fig. 2.



As Stn.2 is below this line the measurement is written as -38^{o}. If Stn.2 were above the line it would be written as $+38^{o}$.

Fig. 3.

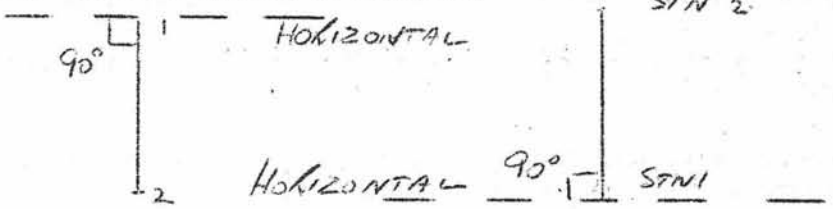


You will find that inclination measurements will range from + or -0^{o}, that is no variation from the horizontal line or a 'dead level' traverse.

Fig. 4.

To + or -90^{o}, that is, perpendicular to the horizontal line or a traverse of a vertical ascent or descent.

Fig. 5.

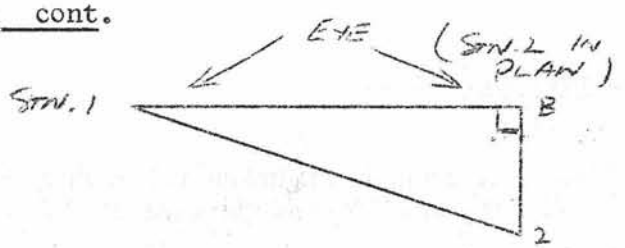


TAPE LENGTH (3.65 metres) : This is the true distance as measured between Stn.1 and Stn.2.

PLAN LENGTH (2.88 metres) ; HUH?? Why the difference?? Well, as you are to draw a PLAN of the cave you shall draw it as though you were looking down on it from a point above. This means that when a passage trends upwards (towards your point of view), or downwards (away from your point of view), an element of foreshortening is introduced.

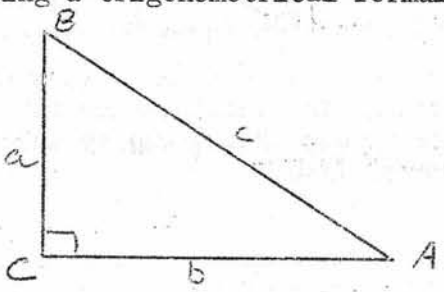
A Note of Surveying. cont.

Fig. 6



Looking down on our traverse, the distance is seen as (Stn 1 -B) which is shorter than (Stn1 - Stn.2). These plan lengths can be deduced from survey data by using a trigonometrical formula.

Fig. 7



b = Plan length.
b = C cos. A
or log C + log. cos A.

Plan lengths may also be worked out geometrically by drawing up some of the data. More about this later. Much of this mucking around can be eliminated if you can coerce your surveyor into correcting his own data.

N.B. 'Correcting' in this sense means converting tape lengths to plan lengths.

NOW!! GRAB A PENCIL AND PAPER!!

Fig. 8.

STATION	BEARING	INCLINATION	TAPE LENGTH	PLAN LENGTH	REMARKS.
1 - 2	45°	$\pm 0^{\circ}$	3.00m		+1 centre entrance +2 edge shaft.
2 - 3	0°	-90°	10.00m		+3 base shaft

Can you figure out what this traverse would look like in plan? Sketch it.
Can you say what the plan lengths of each leg of the traverse would be? Why?

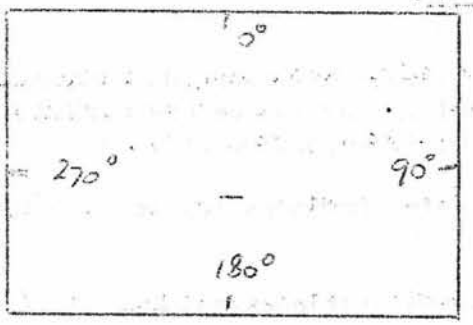
Now, before we go any further, let's look at the two main instruments we'll be using to plot a map.

THE 360° PROTRACTOR.

This is calibrated around the edge in one degree divisions, just like a compass dial, from 1° to 360°. The surveyor uses a compass to determine the bearings for his survey - you use the protractor to reproduce those bearings on paper.

A Note on Surveying. cont.

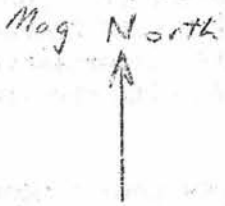
Fig. 9.



When using the protractor for this purpose, the 360° mark represents North, 90° represents East, 180° represents South and 270° represents West, when reading the outside, large figures in a clockwise direction.

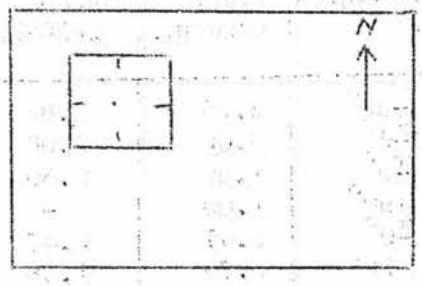
Before commencing any drawing, you must decide in which direction North will lie on your paper and illustrate it with a small symbol.

Fig. 10



You will notice that I stipulate "Magnetic" North, which is the North read by the compass. This varies with "True" North and if you can figure that one out, good for you, I can't so we'll forget about it here. From now on, whenever you use the protractor to plot a direction, you must ensure that its North-South axis is parrallel to the N-S line on the paper and that the N and S ends of the protractor are pointing respectively towards the N and S ends of the paper.

Fig.11.



To plot a direction from a given point, let's take the data in Fig1; Station 1-2 Bearing 35°

Mark your paper with direction of North as shown previously and make a small dot to represent Stn. 1. Place the protractor so that this dot is centred in the small hole in the middle and orient your protractor with the N and S of the paper. Reading clockwise locate the 35° marke and make another small dot at this point on the paper. A line drawn from Stn. 1 to pass through the second dot will represent the direction of 35°. This same procedure is used to locate any direction from any point.

A Note on Surveying. cont.

THE METRIC SCALING RULE.

This is a multi-edged rule, 30cm. long and each edge represents a different scale. The scales are marked on the rule as ratios, e.g. 1:100, 1:200, 1:300 etc.

The 1:100 scale represents distances reduce to 1/100 of their true length.

The 1:200 scale represents distances reduced to 1/200 of their true length.

Your choice of scale may be affected by a number of factors such as :

1) The size of the cave to be drawn and the amount of detail to be included.
11) You may have to fit the map onto a certain sized page, e.g. for easy reproduction in a publication.
111) You may have to conform with a predetermined scale if drawing additions onto a pre-existing map or if you are required to conform with the scale of other maps a certain area.

Now, you already have about you a sheet of paper showing Stn. 1. and a line with a bearing of 35°. The survey data shows that the plan lengtn from Stn. 1 to Stn 2. is 2.88 metres. Plot this distance on the line using the 1:100 scale. Make a small dot at the appropriate spot on the line. This dot represents Stn.2. Got that right?? Now let's try this one for size!

Fig. 12

STATION	BEARING	INCLINATION	TAPE LENGTH.	PLAN LENGTH.	REMARKS.
1 - 2	35°	-38°	3.65	2.88	
2 - 3	45°	$\pm 0^{\circ}$	3.00	3.00	
3 - 3A	10°	$\pm 0^{\circ}$	1.60	1.60	
3A - 3B	0°	$+90^{\circ}$	1.00	-	
3B - 3C	15°	$\pm 0^{\circ}$	0.47	0.47	
3 - 4	43°	-26°	1.76	1.58	
4 - 5					

All right! What's all this 3A - 3C business?????

Well, this means our tame surveyor had done two legs of his traverse and has placed his third station right outside the entrance to a side passage and then surveyed along this passage, (which thankfully is a dead end), calling the stations along the way 3A,3B and 3C.

He has then returned to station 3 and continued along the main passage.

xxxxxxxxxxxxxxxxxxxxxx

HISTORICAL FEATURE.

"Narrative of a Exploration in North Western Australia"
Herbert Basedow.
Reprinted from Transactions of Royal Geographical Society of Australia. S.A. Branch. 1916-1917.

SATURDAY, April 15th, 1916.

We left early to examine portion of the Napier Range lying to the north of the Station. Mr. Sherwin accompanied us. My friends were riding horses, and I a nuggety mule. We took a north westerly course. At six miles a peculiar Limestone boss was seen on our right which rested on the southern flank of a transverse depression in the Ranges. It has been so effected by atmospheric erosion that two holes allowed the skylight to enter from the opposite side. These looked like the loop holes of a bastion from which some cannon might have commanded the plains. Soon we lost the view of the outside world as we wrested a passage through the spear grass which stood quite fourteen feet in height. At eight miles a small, but picturesque, gorge was reached. Near the entrance stood an arch, eroded into the limestone wall on the left, the columns of which carried an entablature of weather-riven blocks, whose wrinkled surfaces bore testimony of long ages of exposure. A spring exists in this rocky gorge, not many chains from the mouth, and is known as Barnett Spring. The water is overhung by the dark green branches of trees and cork-screw palms. Gliding astutely over the surface of the latter we discerned several long, thin snakes which were green along the back. white underneath, and possessed a comparatively small head. We pelted one with stones to bring it down. When hit, it bounced into the air like a rocket, struck the ground with its tail, and shot across the bed in a half erect attitude, finally diving into the sheltering grass beyond. These green tree snakes belong to the genus Dendrophis, this particular species was probably D. calligaster.

When our animals had watered we retraced our steps and followed the brink of the range around in a N.N.E. direction. A short three-quarter mile brought us to the opening of a cave. Even from a distance numerous pink and white stalactites could be seen against the dark interior, and, when we entered the vestibule, pleasing was the sigh that met our enquiring eyes. Pendant Columns, Candles,and curtains of delicate semi-translucent colour covered the roof and floor. We could not help finding likenesses and similarities between the grotesque formations and other earthly objects; and the subdued illumination added to the weird effect. Several bats fluttered anxiously about the space, blessing those who had so unkindly disturbed the dreams of their diurnal repose. From the principal cave, we stood in, several passages opened out into dark subsidiary chambers. At one point a coolish upward draught directed the attention to a long, almost cylindrical tunnel which led like a ventilator from the ceiling to the top of the range; a speck of blue from the sky could be seen at the distant end which diffused a mellow beam upon the obscurity of this earthly shrine. An air of sanctity hung about the scene,

Historical Feature. cont.

and even our voices were reduced to respectful insignificance by the resonant echo which seemed to be vibrating from every column like the notes from the big pipes of a organ. How small man feels when the grandeur of a mystic unknown surrounds him. Were these haunts of spirits? Were the strange feelings that had come over us invoked by resentment which somehow made itself felt? Was the inquisition of a humble mortal from the world of light perhaps the cause of it all? Our eyes had accustomed themselves to the dimness. There, right in our face, stood the symbol of death - the long femoral bones of a dead man's skeleton, lying upon a table of rock, covered with a pure white cloth of fine grained calcite. It was, indeed like the cross upon an altar. Here, then was an aboriginal crypt. We thought. Could any place have been more befittingly chosen to respect the dead? Could any artificial vault have been more beautiful? Here heroes could rest without demur for God's own hand had carved the tomb and placed it in this cloistered spot.

We wended our steps towards the light of day and found our track through the thorny undergrowth to our beasts of burden. Jequirity (Arbrus precatorius) grew in abundance, and among its vetch-like leaves, the clusters of open ripe pods displayed the rows of jet and scarlet beans.

We had not proceeded far ere we reached another cave. The growth around the site was thick, and some tall spreading trees practically hid the entrance from the plain. The opening was hemispherical, and might well have been a natural stage depicting Fairyland. The arch in front was quite fifty feet high, and about 115 in length. From its centre a knotted group of stalactites like the keystone of a vault, or a regal coat of arms over the portal of a hall. Water was dripping from the points of the centre piece, and was attracting numerous gorgeously painted finches which were fluttering stationarily as they caught the drops, or were clinging to the stone in an inverted position as they sipped the fluid oozing from above. The ceiling was supported in the centre of a septum of columnar structures resembling Roman architecture. Light had free access to this cave and in consequence the effect exceeded that of the previous one. Stalactites adorned the surface wherever one looked. Some were massive, others slender and frail, and many simulative forms could be deciphered. It seemed as though Nature in a playful moment had tried to reproduce in stone replicas, often more or less caricaturised, of certain picked subjects of her glorious creation. Right in front was the model of a dinotherium head from the mossy whiskers of which moisture was bubbling like foam to the ground. In a secluded niche on the right sat a grinning Joss, by his side a diminutive sphinx; the environment in itself lent a fantasy which made the stone alive with form. To the left of the septum, the grotto contained a series of shallow circular basins, one above the other and each surrounded by a colour of pink calcareous sinter. The water which was trickling over the sides to find the lower levels, was replenished by the ringing drip from the pendant points above. Overhead the intersections of the precipitated bands of rock groined the roof which was delicately marbled in shades of green and blue; in places the organic staining was more intense, and lay as an

Historical Feature. cont.

inset of verde antique across the marmorean base. Some of the columns were garlanded with a leak green lichen - wreaths of welcome by an unseen hand. On either side subsidiary caves opened out into the heart of the range. Butterflies and iridescent blue insects flitted and buzzed about the space. But not the least attractive was the sloping floor, for it was laid with a carpet of green and blue. The green was rendered by the fronds of a small fern, the blue by the bloom of a plant whose perfume hung thick in the air.+

The rocky walls which stood on either side of the cave were honeycombed with pits and cavities, which all contained a number of heliform land-snails. The pits had no doubt been largely formed by the solvent action upon the limestone of the acid secretions of the mulluscs. Another species with spiral markings down the whorls favoured the trunks of the trees, while yet another whitish form preferred the tussocks of the porcupine grass on the plain, in which it clustered by the score.

Having disturbed several kangaroo (Macropus rufus) which were resting in the cool of the vaults, I resolved to assign to these caves the local name of the marsupial, viz Wangalinnya.

When we had completed the exploitation of the cave and its surroundings, the sun stood not far above the horizon. We took a roundabout course homeward to avoid the troublesome grass.

+ The fern was subsequently identified by Mr. Whitelegge as Adiantum capilus veneris, the other species by Mr. J.H. Maiden as Biblus linigora.

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HISTORY OF THE WOMBEYAN CAVES.

The Wombeyan Caves are situated in a pleasant valley in the Southern Highlands of New South Wales, on the boundary of Mittagong and Mulwaree Shires, 120 miles (183 km) south west of Sydney.

The limestone caves at Wombeyan were discovered and notified in 1828 by the famous explorer John Oxley, at the time the New South Wales Surveyor-General and by John Macarthur, a pioneer of the Australian wool industry.

The party led by Oxley and Macarthur was in search of grazing land for Macarthur. It left Berrima and travelled almost the same route as the road from Mittagong to Wombeyan takes today. On the fifth night out the party camped on the flat area adjacent to the Grand Arch and near the place where the kiosk is now situated. During the night their horses strayed to the Archway, where they were caught the next morning. This led to the discovery of the Archway. The party however, did not enter any of the caves. (The expedition terminated at Richlands Estate, which subsequently became a Macarthur property. Oxley died on May 25, 1828, not long after returning from this expedition.)

There is little record of the early history of the caves. In 1842 occurred the first recorded entry into the dark section of the caves, by a clergyman named Denning. It is thought that he entered the creek section of what is now known as the Fig Tree Cave.

The first caretaker was appointed by the Government in 1865. His name was Charles Chalker and it is largely due to this man's efforts that the caves were developed in the first place. (It is interesting to note that Chalker was appointed caretaker at Wombeyan two years before the Government appointed a "keeper of the caves" at Jenolan.)

Opening up of Caves.

In 1865 Chalker discovered and investigated three of the main caves at Wombeyan - The Wollondilly, Kooringa and Mulwaree Caves. The Mulwaree was one of the first of the upper level caves to be opened for public inspection. It was later closed, but was again re-opened for inspection in 1962. The Kooringa, another upper level cave, was opened in 1875 and the Wollondilly Cave in 1885. The Junction Cave was discovered in 1897 and opened to the public in 1906. The Fig Tree system, first entered by Rev. Denning in 1842 was surveyed by Oliver Trickett in 1891. It was opened for public inspection from the 1870's until 1928, when it was closed, to be reopened in September 1968.

The caves were originally shown to visitors by the use of candlelight and magnesium flares, the guide using a magnesium flare and each visitor being issued with a candle. The caves were first lit by electricity in 1928, this system serving until 1962/63, when the Department of Tourism rewired and modernised the lighting. The Caves at Wombeyan are considered to be the best illuminated in Australia. The Wollondilly, Junction and Kooringa Caves were the

History of the Wombeyan Caves. cont.

caves lit by electricity in 1928. It was decided not to illuminate the Fig Tree Cave at the time because of the difficulty of maintaining lights and paths in the creek section (now known as the Marble Way). The Fig Tree Cave was electrically lit for its reopening in 1968.

Access.

An access road to Wombeyan was put through from Taralga in 1895, and one from Mittagong in 1900. A problem besetting the road from Mittagong was the ford at the Wollondilly River (Goodman's Ford),which often became impassable after heavy rain. Although there were proposals as early as the 1920's for construction of a causeway or low level bridge at Goodman's Ford, it was not until December 1965 that a contract was let for a low level bridge. Officially opened on December 16, 1967 the bridge now enables all weather access to the caves.

Improvement work on the roads of access is continually being carried out by Mittagong and Mulwaree Shire Councils.

Accommodation.

In 1900 an accommodation house was built at the caves. It was burnt down in 1934 and has not been rebuilt. The present office building is on the site of the burnt down Caves House.

A new caravan park, officiallly opened on March 25, 1972 provided 21 sites with power, four sites without power and a modern amenities block.

The post office at Wombeyan Caves was built in 1939 and the Caretaker's cottage in 1947. In 1950 the area was given a water supply, and a ground beautification programme was begun the same year. In 1955 the cafeteria kiosk, known as the Kui Kiosk (kui is an Aboriginal word meaning"Welcome"), was opened.

Caretakers.

Comparatively few men have held the position of caretaker at Wombeyan Caves.

Charles Chalker retired from the position in 1884, and was succeeded by his youngest brother, Thomas Michael Chalker, who held the position for more than 40 years. Many of the original steps and the pathway were considerably improved in the period 1894-1905 by William Chalker and John Pollock. Thomas Chalker discovered the Junction Cave and several of the other caves such as the Guineacor and Bullio Caves. A shawl formation of exceptional beauty has been named Chalker's Blanket as a tribute to Thomas Chalker.

Thomas Chalker retired in 1925 and was succeeded by G. Brown, who remained until 1935. Guides on exchange from Jenolan then carried on until 1939, when L.Brown, son of the previous caretaker, was appointed. He remained until 1948, when the present caves Superintendent, Clyde Stiff, took duty. He has been very ably carrying on the work of his predecessors. He was largely responsible for the repopening of the Fig Tree Cave, and supervised work on the caravan park.

New South Wales Dept.of Tourism

GUBBA.

Cullenbenbong was a reedy creek which headed up between the great rock bastions of Minni Minni and Table Rock and emptied into Cox's River on the bend of Sandy Hook. Gubba lived up at the head of the creek and black men kept well away from it. Gubba was a debil debil that houded their tribe and they spoke his dread name in a whisper.

But Cullenbebong wasn't just a creek - the name extended to take in all the southern part of Kanimbla Valley, a fair sized area of small holdings, with pioneer homesteads dotted along the watercourses.

It was on the fringe of this wildly wonderful country, where mad rivers cut into the very roots of rock ribbed mountains whose tops reached up into the winter snows, mountains whose hearts were riddled with eerie caverns which wound down mile after mile in inky blackness, that the sound of Gubba was heard. Gubba was a fearsome night sound which three generations of bushmen well up in practical natural history could not identify. It was more than that; it had the quality of infecting all who heard it with that unreasonable terror associated with the Supernatural, and those were men who were hard to scare, men whose lives were wedded to the lonely bush, and who knew its night sounds as a child knows his alphabet, dauntless old settlers who had fought the bushfires and Myall blacks with unswerving courage. What was this sound which struck terror into their hearts as no wild coo-ee of the killing Myalls had ever done? Some thought that it was a bird or beast of the darkness which came from the caverns dowwn deep in the heart of the mountains and returned there before dawn; others thought it to be supernatural, but what it was we shall probably never know, for nearly thirty years have gone since it was last heard; Gubba has gone back where it belonged whether it be deep in the heart of a mountain or in the gloomy land of restless spirits. Perhaps the most convincing part of its material side was the terror of the animals; dogs never failed to show a complete panic and for days after remained cringing and afraid. Even the most staid horses invariably bolted - a procedure which always had the full approval of the rider.

The sound had been heard for more than two generations on an average of once in roughly two years, and always around settlements a short distance from the edge of the uninhabited country. The head of Cullenbenbong Creek or within a radius of three miles were the only places it was ever heard. When I was away it was heard by three trappers up in Cullenbenbong Creek; it seemed to be below a steep cut of the Creek and though it was almost as bright as day under a full moon, they could not force themselves to the edge of the bank; their big dogs rushed into the tent and whimpered under the bunks, afraid to bark.

On the following morning the trappers shifted camp. The next to hear it was Herb. He was going round his traps near Sour Flat caves when the thing started in the next gully over a low ridge. Herb describes it as a series of horrible coughing grunts, not unlike those of a lion, but far greater in volume. The sound ceased and Herb very dubiously started up the hill towards it, then in broke out afresh, this time with such terrific volume that the ground reverberated; that finished Herb.

from "Green Mountains and Cullenbenbong.

by BERNARD O'REILLY.

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B.M.S.C. TRIP REPORTS.

WALLI.

Date of trip. 7th and 8th April, 1973.

Members present. B. Richard, T. Matthews, B. Marshall, L. Baker
S. Thomas, G. Nelson, Steve ??, M. Sammutt,
R. Bloomfield and R. Thomas (L).

Arrived Walli 9.30am and spoke to property owner before moving onto camp site. After a bite to eat, ladders were set into position at WA17 Deep Hole and the descent began, taking 10 of us nearly an hour to complete. The object of the trip was chiefly to photograph and familiarize members with this interesting system.

We all soon became intrigued at the honeycomb effect, being without the usual pattern of either vertical or horizontal planes. Several times small groups became separated and spent ages trying to link up again. Some caverns were well endowed with decoration and many interesting helectites were noted.

The most disappointing feature of the trip was the amount of rubbish encountered, ranging from soft drink bottles, discarded batteries, cigarette boxes and the like. Members gathered up this as they caved and when put together back at the bottom of the ladder pitch, the rubbish filled an army pack especially lowered to haul it to the surface. Graham Nelson added variety to the climbing by absailing in and prussiking out.

Seven hours were spent in this cave.

Sunday morning - Nos. WA2, 5 and WA29 were explored as these systems with their links between make excellent caving. Decoration is plentiful and well worth a picture.

The link between Oolite and WA29 took some locating but as we knew it was there we kept searching.

Next the Stovepipe link was attempted with some becoming very stuck to say the least. Its obvious that many hours of pick and shovel work has certainly paid off as with these two links to prove it.

With most obvious entrances having been explored in caving areas, clubs must be prepared to do more digs in the future.

R. THOMAS.

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WYBURDS.

Date of trip. 25th and 26th March, 1973.

Members present. L. Baker, S. Thomas, P. Sammut, I. Bogg, B. Joel, R. Bloomfield and A. Fairweather (L).

After reporting to the Chief Guide at Caves House we proceeded out to Wyburds camp and found members from S.S.S. Club who had some friends along and were going abseiling and prussiking from nearby cliffs.

Ian and Robert arrived later in the morning and after an early lunch, headed up to Wyburds cave where Robert and Paul explored Serpentine Cave which was wet and muddy. We reached Wyburds at about 1.30pm. then split into two groups. Ian led his party into the main cave, and I led my group up to what we will call northern entrance which is about 25 yards north of the main cave but at river level. This particular cave is not on the map we have.

We took in with us the Brunton compass, Inclinometer, ropes and ladders. After taking the right hand extension we came to a large chamber. We took compass readings and Robert and Paul found a small opening at the western end. Robert went in first and up into a top section. Paul followed after him and went straight into the lower.

A. FAIRWEATHER.

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ASHFORD CAVES.

Members present. G. Nelson and Narrabri Senior Scouts.

The Ashford caves are situated in an outcrop of lwer Carboniferous limestone, 12 miles north west of Ashford and about 40 miles south of the Texas Caves in Queensland. The limestone outcrops for about 3 miles along the road from Ashford to the Great Falls on the Severn River. There is only one cave system known to the local residents and in our limited exploration we certainly found no others.

The cave is quite a well developed system with five entrances and over 1,000 feet of large passages. The roof is generally 10 feet high and several rooms up to 30 feet. The whole system has been extensively mined for bat guano and two of the entrances have had elaborate wooden rail systems installed through them. The cave of course has been completely destroyed as a natural system. There are however signs of what must have been extensive runs of flowstone and large broken stalactites are scattered here and there on the floor. Despite the mining and tourist activities a colony of bats still lives in the more difficult parts of the cave and are probably a more valuable asset to the local tobacco farmers than any guano they have obtained from the cave.

Ashford Caves. cont.

The mining apparently began as far back as the 1930's and at least five different companies have tried their luck since with varying degrees of sophistication. There is currently tales of another group moving in. The local council, eager to encourage tourists, has provided an excellent camping area at the cave and there is adequate water in the adjacent creek.

At least one has no fear of indiscriminant visitors damaging the caves (Mine).

G. NELSON.

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Wyanbene.

Date of trip. 29th and 30th September, 1973.

After a late start on Friday (due to a necessary rewire on Keith Stretton's Landrover for the connection of Noel Hand's trailer) seven of us headed off in three vehicles. But due to Sandra taking seriously ill by Campbelltown we had her taken to Camden Hospital.

By the time we had arrived at the Hospital, checked to make sure Sandra would be O.K. and left Richard as Sandra's guardian it was 11p.m..

After boiling the billy, coffee and biscuits in the Hospital, the depleted crew decided to spend the night off the road at the foot of Razorback.

After breakfast next morning we continued on to finally arrive at Wyanbene about midday Saturday.

Due to the confusion on the way down much of the equipment had been left in Richard's Toyota, including 2 helmets and lights and the battery charger, this meant we would have to limit our caving expliots for the weekend.

On Saturday night Bob and I carefully explored the cave from the grill entrance to the Keyhole (3 hours). During this trip we located two more entrances, a small colony of bats and the old tourist section. After exploring the tourist section we returned to camp for coffee and a snack before retiring for the night.

Sunday morning we were lucky enough to have out batteries recharged by the leader of a scout group visiting the caves, and in exchange we took two of their group on our long trip.

Wyanbene. Cont.

Noel, Veronica, Bob, myself and the two scouts reached the free climb past the Diarrhoea Pots, But due to weakening lights and a liberal coating of mud we returned. During this 6 hour trip we also named several parts for identification purposes on future trips. Some of these name are already in use and others are our own: Elephants Head, Large and Small Sharks Mouth, Prison Bars, Dinosaurs Foot, Wart Rock, Roosters Head and the Man that makes the stream.

G. McNAMARA.

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SEARCH AND RESCUE CALL OUT -

ABERCROMBIE.

Date : Saturday, 22nd September, 1973.

At about 3.45pm. we were informed that a 4 year old boy had gone missing from the southern extremity of the central camping area. Members of M.S.S. were recalled from a cave survey job and joined forces with staff, campers and day visitors to look for him. We did not think that a child would wander very far from the camping area into the more rugged terrain so we concentrated on searching along the creek from about half a mile south of the Arch to Bushrangers Stable on the northern side. We investigated features which we thought would be interesting to or pit falls for an adventurous boy, such as caves, mine excavations, wombat burrows and blackberry and nettle thickets. The tourist caves were checked in case the boy had gained access with an inspection party. By this time dusk was closing in and unsuccessful searchers returned to the camping area where police officers, Dennis Holland and Laurie McGrath organised those with adequate sources of light into small groups to search specified areas further afield. Ted Harmon and Steve Starkey (M.S.S.) and I were allocated the ridges south east of the camping area. We trogged this locality until we heard 3 rifle shots at about 7.30pm.. After brief discussion we headed back to camp, eventually picking up the recall advice from a loud hailer. The boy had been found 3 miles away from the caves by Wilf Boon, purely by accident as Wilf was looking for a lost cow, not a lost little boy.

On reflection, I wonder how long it would have taken us to extend the organised search into the area where the boy was found. I was quite amazed, as were many others, to learn that he had covered such a distance through some very rough country. I'm pretty sure that no one who was present during this trying episode will ever again underestimate the staying power and tenacity of a young child when he decides to 'go walkabout'.

U. TREHARNE.

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ABERCROMBIE S & R.

Following upon the S&R call out at Abercrombie, the following analysis has been made:-

1. Assistance was readily given by Police, day visitors, local residents and the Landrover Club of Sydney to the Staff and Speleologists who were combing the area. This was gratifying to see, but it was found that those with little or no local knowledge needed someone to explain the area to them (i.e. to direct the search.)

2. The search in the first instance was confined to the immediate area; searchers being of the opinion that a 4 year old boy "would not get too far." It was later learned that he did indeed get quite a distance, being finally located 3 miles north of the Caves in very severe Gorge country. We should not take size or age as a barrier to capability.

3. Search parties were frequently out of touch with each other, and with the Camping area (Operations Centre.). A communications system, if practicable, would have assisted tremendously. The recall of search parties was difficult owing to their not understanding Loud Hailer instructions, which were indecipherable. The recall of search parties should be established as 3 rifle shots or 3 horn blasts, as this sound carries quite well in Gorge country.

SUMMARY.

The S&R had a happy ending, which could well have been a tragedy. Time is of the essence in a S&R and immediate deployment of available manpower is a pre-requisite.

FOOTNOTE.

An article in the "Western Advocate" later in the week offered the Parents and Grandparents thanks to all those involved.

M. TREHARNE.

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BOY SAFE AFTER BUSH ORDEAL.

"Western Advocate"
Bathurst, Monday Sept.24th,1973.

A four year-old boy is now little the worse for his experience after being missing for about three hours in rugged bush country at the Abercrombie Caves camping reserve, 45 miles south of Bathurst. His finding has been described as a "thousand to one chance".

Police said that the youngster, Ian Borun, had disappeared from the camping reserve at 3.30 on Saturday afternoon. At the time he had been camping with his mother and grandparents. When his absence became known, a search party was organised by Const. D. Holland, of Trunkey and Const. L. McGrath of Tuena. Within an hour or two a

Boy safe after Bush Ordeal. cont.

large area had been combed for the youngster. About 6.30pm. Mr. Wilfred Boon, a property owner in the Trunkey Creek area, when searching for a missing cow, located the boy on the banks of Grove Creek. This was at a point about three miles from the reserve.

The youngster, in search of "skippies" and frogs was in a sodden condition, having fallen into the creek. Unaware of the circumstances of his disappearance, Mr. Boon took the boy to his home, where dry clothing was provided and police informed.

Members of the search party said yesterday that if the lad had not been located prior to sundown on Saturday his chances of survival would have been extremely doubtful.

Bitterly cold conditions and rain were experienced in the Trunkey Creek area during Saturday night and yesterday. The section of country where the search party was active comprises some of the roughest portions in the area, with precipitous hills, and rugged terrain. In addition, there are numerous mine shafts - relics of former years when intense activities were carried out.

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ABERCROMBIE CAVES - POEMS BY PUPILS OF PERTHVILLE DEMONSTRATION SCHOOL. 22ND NOVEMBER, 1973.

The Abercrombie Caves. Elizabeth Hutchings - Grade 6.

I'm going to Abercrombie Caves today,
To look through them and perhaps play.

I see a great big Arch and river,
I hope its not cold or else I'll shiver.

The rocks have the finest beauty ever,
The way they form is very clever.

The Road. Graeme Hollis - Grade 4.

Curves after curves
Corners after corners
Just like a snake sliding down the hill
Or just like the esses, but joined together.

The Caves. Susie Goddard - Grade 6.

I went to the caves
And this is what I saw,
The dripping of the water
And the columns from the floor.

The stalagmites were stretching
Upwards from the floor.
The stalactites were pointing
Downwards evermore.

Abercrombie Caves Poems. cont.

The Walk. Sue Burge. - Grade 4.

We went for a walk up the ladders,
We went for a walk down the steps,
We went for a walk past the river,
But I liked the swinging bridge best.

The Arch. Mark Burge.

Once I saw an Arch, sir
The biggest in the world.
At least the biggest natural one
Where Miner's smoke once curled.

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BATHURST'S AMAZING MARBLE MAN.

Adam, April, 1973.

In the late 1890s the citizens of Sydney were surprised to hear that the petrified body of a man estimated to be more than 1,000,000 years old had been found in a limestone cave near Bathurst.

The finder of the body, an Italian, had sold it to a Scotsman. The latter claimed he had bought it out of curiosity, but because of the great public interest which had been aroused he decided to turn it into a sideshow exhibit in the city.

There was a lot of discussion about the "marble-man", and a scientist who examined him declared that he was a cleverly-carved fake. But a Macquarie Street doctor was called in be the owner, and after examining a sawn-off finger he pronounced the "marble-Man" genuine.

The doctor said he had detected petrified bone and tissue structure under a microscope, proving that the figure had once been a living man. The doctor said he would stake his professional reputation on the validity of the figure.

When a reporter went to Bathurst to check the story, however, he found that the Italian who claimed to have found the body was a stone-mason. The reporter found the place in the dark cave where the "marble-man" came from, and found that "he" had been carved out of a block of marble.

The Scotsman who owned the figure was furious when he learned the figure was a fake. He had agreed to split the profits of the exhibition with Italian, but instead he donated the share to a Sydney hospital.

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ABERCROMBIE ABSTRACTS..

Compiled by Ken Pickering.

The following three abstracts serve to give some background to the history of Abercrombie Caves. The first gives an idea of the spread of settlement in the area and the genesis of the town of Rockley, the second gives some background material to the brief "Ribbon Boys" saga while the third, passed to me by George Knox, tells of the Arkell, McPhillamy and Smith families.

1. from "The History of Rockley, New South Wales" by Watson Steel, JRAHS, Volume 15, Page 32 et seq.

11. from "The Story of Bathurst" edited by Bernard Greaves, published by Angus and Robertson, 1961. Pages 26 and 27.

111. from "Early Bathurst District Families" a duplicated sheet, author unknown, but thought to be Reginald Smith. Apparently written in August, 1958.

1. FIRST SETTLEMENT IN THE CAMPBELL VALLEY.

Lieutenant William Cox, upon his "Hereford" estate at Bathurst, with his sons, George and Henry, in 1816-1817, and Lieutenant William Lawson, upon his one thousand acre grant at "Macquarie Plains," with his sons, John William and Nelson Lawson, founded the wool-growing industry west of the Blue Mountains.

Mr. Lawson and his relatives were the pioneer graziers on the east bank of the Campbell, from its conflux with the Fish River at "White Rock" to its source beyond Mount Lawson, along a frontage of approximately thirty miles.

He was immediately followed by Mr. Robert Redfern, and between 1820 and 1824 by Messrs. Street, Perrier and Pye. Originally the country was held under "Tickets of Occupation," or "promise" of a grant, or perhaps without any valid authority, but before the end of the year 1824 it was converted into "free grants" in favour of the first occupants. (Records, Department of Lands.) Between the years 1819 and 1829 Messrs. Lawson had, in addition to the "establishment" visited and mentioned by Dr. Throsby in May, 1819, on Portion 10, Parish of Langdale, at least three other sheep farms further up the river, on Portions 1 (where Oxley crossed on October 18, 1820) 2 and 6 Parish of Irene.

Abercrombie Abstracts. (1). cont.

The west (or left bank) of the Campbell from Bathurst to Mount Lawson was unoccupied, except by itinerant stockmen, until 1829, being reserved as a Government Stock Station, when early in that year Governor Darling revoked it and made it available by grants to permanent settlement. The first land granted on the west frontage was that of one thousand nine hundred and twenty acres under an Order of February 21, 1829, by Governor Darling to Captain Watson Augustus Steel, of the 89th and 34th Regiments, who had recently arrived in the colony.

The parishes along both sides of the river were not then named. In March, authority was given the grantee to occupy, and by June following the usual primitive premises, huts and stockyards had been erected; and he started to stock up with sheep and cattle. His family arrived shortly afterwards, and commenced residence. Except Mr. Arkell's family, three miles distant, no other family resided nearer than Bathurst, or as it was then called, "the Settlement." As it was the rule for grantees when taking possession of their grants to give some distinctive name to them to enable the authorities to locate and distinguish them, Captain Steel named this primary grant of one thousand nine hundred and twenty acres "Rockley", in honour of his birthplace, Rockley Manor, in the Parish of Ogbourne St. Andrew, in the county of Wiltshire.

CONDITIONS IN THE WEST, 1829-1840.

From 1824 to 1835 the country from Bathurst to Goulburn, on the south, and back beyond Carcoar, and along the Lachlan, in the west, was infested by gangs of bushrangers, absconders, and stock thieves, who raided the homesteads and robbed with impunity, while the blacks assisted them. Owing to these outbreaks, Captain Steel and Captain Sealy (who had in October 1829 selected his two thousand acre grant two miles to the north-west of Rockley) applied to Governor Darling for Military protection. This was considered impracticable, but they were advised to remove their families closer to Bathurst, where additional grants of three hundred and twenty acres each would be given them, and from there they could supervise and work their estates at Rockley. This they did, receiving lands three miles south of Bathurst, opposite the present villages of Orton Park and Perthville. But before they could erect substantial homes and remove their families to them, a serious insurrection occurred amongst the criminal population in July, August and September, 1830. In the latter month Messrs. Arkell, Steel, and others were raided and robbed by a gang of eleven armed men, who afterwards proceeded towards Bathurst and attacked the home of Lieutenant Evernden, Police Magistrate, at "Bartlett's Farm" (now Wimbledon), with the intention of shooting him. Finding him absent, and the overseer showing them some resistance, they shot him dead. It became necessary to obtain reinforcements of the 39th Regiment from Sydney to assist the local detachments of military and police, and to form local corps from amongst the residents. Lieutenant Lachlan Macalister, with his troopers from Taralga, had several shirmishes with the outlaws in the Abercrombie highlands. They were eventuallu all captured, and

Abercrombie Abstracts (1). cont.

ten were executed at Bathurst. (Bathurst Records). Extracts from a letter published in the Sydney Gazette of October 21, 1830, written from Bathurst by Mr. George Suttor (who had settled there in 1823) to Mr. E.B. Suttor at Baulkham Hills, gives an interesting account of this turbulent period. He wrote from his farm on the north bank of the Macquarie:-

Bruce Dale, October 7,1830.

> On Monday, the 27th of September, a meeting of the Magistrates and inhabitants took place at the Court House, Bathurst+ when twelve was the number offered, and at 5 o'clock in the afternoon an express arriving with information of Arkell's robbery. The volunteers pushed on at a smart pace, and a little before next morning reached Arkell's house on Campbell's River and ... pushed on again... They soon came up on their tracks and kept them until they saw the bushrangers encamped in a rocky glen near the Waragambe (sic.: Abercrombie?) River. This was on Tuesday afternoon about an hour before sunset. Major Macpherson, 39th Regiment, Lieutenant Delaney, and Lieutenant Brown mounted soldiers as another party of reinforcements. Their number is supposed to be at this time from 14 to 20, though at one time there were 134 together. Many of them were said to be pressed. Some call them the "ribbon boys."... Yesterday, we heard they were at the Lachlan River, and had committed serious depredations on the property of George Ranken, esq., and it is reported a rising has taken place at Mudjee, and here is talk of a general rising. None of our men have joined them, nor have we been molested on this side of the river.

The Sydney Gazette of the same date reports the despatch of troops as follows: "The military and police have been very active. Captain Walpole and his detachment made a rapid march from Sydney, and started next day in pursuit of the plunderers.

Unrest and Lawlessness occurred intermittently up to 1840 after which a period of peaceful progress ensued until the gold discovery in 1851, when it revived with equal violence.

THE GENESIS OF THE TOWN.

The most prominent and largest landowners and graziers in the Rockley district in 1844-1846 were Lieutenant Hanbury Clements (Summerhill), Thomas and J. Pye (Bunnamagoo), Lumsdaine Brothers (Tiger's Hut), William Bowman (Dunn's Plains), Robert Smith (Foster's Valley), Thomas Arkell (Charlton), Captain Steel (Rockley), William Lawsom and Sons ("Chrystal Mount (and Other), and Captain John Brown (Brownlea). Cattle replaced sheep on many holdings after the epidemic of catarrh and scab which prevailed amongst the flocks from 1835 to 1841. The increase in numbers,

prosperity, and needs of the Western settlers urged them from time to time to move the authorities to establish towns to meet their requirements.

When the Rockley grant of one thousand nine hundred and twenty acres was surveyed on January 7, 1833, by Mr. Assistant-Surveyor James Bryn Richards, he provided for a village reserve on its north-western edge by retaining a vacant block about nine hundred acres there. In 1850 a movement was made by the landowners and residents in the Upper Campbell watershed and the highlands towards the Abercrombie to open a town on this reserve fronting Pepper's Creek, between Captain Steel's property and Mr. William Bowman's at "Dunn's Plains".

11. from "THE STORY OF BATHURST".

Many convicts in Government service and more who were assigned as servants to settlers, following a natural urge for freedom had escaped from the custody of their masters and taken to the bush. Their means of livelihood was, of course, preying on the settlers and sticking up travellers on the mountain road. The troops at Bathurst and Wellington were too few to be able to range the whole countryside. In August 1825 Major Morisset, the Bathurst commandant, reported the existence of a "confederation among runaway convicts, called Bushrangers, for the purpose of robbery and murder". Governor Brisbane was urged to form a mounted corps to deal with them. It was Lieutenant-Colonel William Stewart, as Acting Govenor, who in December 1825 formed such a corps and dispatched it to Bathurst. They were known as Stewart's Police. The activities of this force were in great measure responsible for a period of comparative quiet during the next few years. However, an incident occurred towards the end of the 1829 which led to the formation of the dreaded Ribbon Gang and what was known as the Bathurst Rebellion of 1830.

At noon on 5th November 1829 Ralf Entwistle, a young English convict-servant, with no mark against him and due for his ticket-of-leave, was bathing with a companion near the ford of the Macquarie. Governor Darling and party passed close by on a visit of inspection to Bathurst. That afternoon Entwistle was hauled before the magistrate, Thomas Evernden, and sentenced to a flogging for doing such a dastardly thing before Darling and lady friends - who had not noticed the incident. He was then released with his ticket-of-leave cancelled. Brooding over this horrible injustice, Entwistle waited his chance and with a few others (their numbers subsequently increased to about eighty) embarked on a mad expedition of reprisal and robbery. An overseer on Evernden's station was murdered, also a police officer at King's Plains. At a meeting in Bathurst on 27th September, 1830 a volunteer force under W.H. Suttor was formed to assist Stewart's Police. It was not till further killings had accurred, including

Abercrombie Abstracts (111), cont.

Thomas Arkell resided at both Charlton and Mulgunnia, and died at Charlton on the 12th April, 1848 aged 75 years (his wife died on September 4th, 1820) they left two daughters, Lucy Ann, and Elizabeth, both Thomas Arkell and his wife were buried at Parramatta.

Robert Smith, previously mentioned herein, and a son named Samuel who married Elizabeth Arkell, lived for a time at Charlton, and later at Mulgunnia. There they reared a large family, their eldest son was Thomas Arkell Smith, who later became Police Magistrate and Mining Warden at Trunkey; George Sidney Smith, stock inspector at Bathurst, also was one of their family. He died at Bathurst while still in office there. Thomas Arkell Smith married Mary Elizabeth McPhillamy, a granddaughter of the original William McPhillamy. Thomas Arkell Smith lived at Mulgunnia until his death.

Thomas Arkell Smith was appointed Police Magistrate and Gold Commissioner at Trunkey on 1st August, 1871, and after the Mining Act became law in 1874 was appointed Mining Warden for the Bathurst District. He returned on September 11th, 1911. Both Thomas Arkell Smith and his wife were buried at the Church of England Cemetery at Bathurst. Mulgunnia is still owned and occupied by a member of the family of the original Thomas Arkell and Robert Smith; the present owner and occupier is Reginald Cecil McPhillamy Smith, being the 4th generation of them. Since the above was written, Reginald Cecil McPhillamy Smith was also died on 10th June, 1962. Mulgunnia is now occupied by Victor Ernest Smith, second son of Reginald Smith.

- from a duplicated sheet, Author Unknown, but thought to be Reginald Smith. Apparently written in August, 1958.

Notes - Conditions in the West, No.1.

Bathurst+ was always the official and administrative centre, and not Kelso, as some writers frequently assert. The Courts, Commandants, Quarters, Military and Police Barracks, Government Stores and Granary were situated on a reserve known as the "Ordnance Ground", between George and William Streets, and fronting the river. It is now occupied by the Police Department. On this ground Macquarie, on May 7,1815, raised the flagstaff and saluted the flag, and named the city. The goal and prisoners' barracks were on the site of Machattie Park, behind the present Court House and Post and Telegraph Offices, built in 1879-1880. (Vide Royal Australian Historical Society's Journal, Vol.IX., pp194-195, "Journey from Sydney to Bathurst 1822"; and family sources of the writer).

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Abercrombie Abstracts (11), cont.

those of more police officers, that the outlaws were apprehended. They were tried at Bathurst on 30th October by a Special Commission consisting of the Chief Justice, Sir Francis Forbes and a jury of military officers. Entwistle and five others were arraigned for murder, and four others for robbery. All were convicted that day, and sentenced to be hanged on the following Tuesday, 2nd November. As Entwistle was a Catholic, the Reverend John Therry was summoned from Sydney to attend him; the others were attended by the Reverend J. Keane of Kelso. This was the end of the Ribbon Gang. The case is of particular interest, first, because as a result a Catholic priest crossed the mountains for the first time and celebrated Mass in Bathurst, and second, because we have an example of the savage brutality with which convicts were sometimes treated. A glance at the dates of the trial and execution shows that Father Therry must have been sent for from Sydney even before the men were brought to trial.

Such was the end of the Bathurst Rebellion, but not of bushranging, which still continued, though never on such a scale as in 1830.

111. EARLY BATHURST DISTRICT FAMILIES.

In January 1804, the Reverend Marsden brought out three men from Ayr, Scotland, named Thomas Arkell, William McPhillamy and Robert Smith to attend his sheep.

Later, all three took up residence in the Bathurst District.

Arkell purchased considerable areas of land, viz. "Charlton", in what is now known as the Rockley district; and Mulgunnia, about 40 miles south of Bathurst, now Trunkey Creek District.

The deed of the latter show that Mulgunnia was surveyed in 1815, only about one year after Bathurst was proclaimed by Governor Lachlan Macquarie.

On both properties Arkell depastured sheep and engaged shepherds to attend to them. He built a large homestead at each property, that at Mulgunnia is still in occupation by descendants of his family. Mulgunnia house was built in 1822 and added to in 1842. Both homes are still in good condition.

Arkell purchased a number of swarms of bees from Nathaniel Payton of Parramatta and brought them to Charlton in a gig in 1842 took some bees in Mulgunnia. Years afterwards a swarm of bees was discovered in the Northern end of the Abercrombie Caves, and I believe that they are still there, August, 1958. This swarm is believed to have migrated from Mulgunnia, 8 miles away.

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C O N T E N T S

LIEUTENANT WILLIAM LAWSON - Australia's First Speleologist.

By Ken Pickering.

(Note: An abbreviated version of this article was delivered orally at the Ninth A.S.F Biennial Convention, Sydney, 1972).

I. Early Cave Discoveries.

There are several possible contenders for the title of "Australia's First Speleologist". The first discovery of limestone is credited to Surveyor Evans in 1815 (Belubela River). However his journal makes no mention of caves. Lane and Richards in "The Discovery, Exploration and Scientific Investigation of the Wellington Caves, New South Wales" give 1828 as the earliest date for documented discovery of caves of any size on the mainland of Australia, referring to the discovery of Wellington Caves by Charles Sturt and Hamilton Hume. At Bungonia the first recorded exploration of a cave was that of Cunningham on 27th April 1824, although as the article by G.L. & T.M. Whaite in "Bungonia Caves" makes clear, the early settlers could well have made undocumented visits before then. It is possible that early cave discoveries were also made in Tasmania and are waiting to be uncovered by researchers.

However, during 1972, documentary evidence of the actual exploration of a limestone cave of significant size on 8th November, 1821 was uncovered by me, and this date appears to make the author of the account, Lieutenant William Lawson, the first Australian cave explorer to leave a written record. Lawson was at the time, the Commandant of the new settlement at Bathurst and the exploration took place in the Limekilns Cave, sixteen miles north of Bathurst. The Limekilns Cave does not have the scientific interest of Wellington, or the scenic or political interest of Bungonia but it now has much historical interest as being the first limestone cave to have its discovery and exploration recorded, and recorded by a nationally famous explorer.

II Bathurst and Commmandant Lawson.

In recognition of his feat in crossing the Blue Mountains with Blaxland and Wentworth in 1813 William Lawson was given permission to occupy land between Bathurst and the Mountains . He crossed the Nepean River on 21st July 1815 with 100 head of cattle (reputedly the first livestock to cross the Mountains) for this purpose. His grant of 1000 acres on the Fish and Campbells Rivers was not actually finalised until 30th June 1823. On 31st July 1819, Lawson was appointed Civil and Military Commandant of the settlement of Bathurst, a post he held until 1824. This appointment followed an enquiry into allegations against Cox, the previous magistrate and Commandant and Lewis, the superintendant of the government station. Whilst at Bathurst, Lawson made several valuable explorations west and north west in search of a route to the Liverpool Plains, and it was on the second of these journeys that he recorded his cave explorations.

Bathurst in 1820 had a district population of 114 adults and 15 children. The settlement consisted of one thatched brick house for the Commandant, a thatched brick military barracks and houses for the storekeeper, the chief

constable and the superintendant of convicts. There was also a provision store and granary, a large shingled brick barn, a weatherboard barracks for the principal overseer of government stock and temporary log houses for the accommodation of fifty convicts, according to Greaves. Ten small farmers had been settled, each on fifty acres on the banks of the Macquarie since March 1818. One of these was John Blackman who was to accompany Lawson on his cave explorations.

III Discovery of the Cave

Lawson set out on his second exploration from Bathurst on 8th November 1821, accompanied by Blackman (who was also a Bathurst constable) four convicts and a native guide. In his diary now in the Mitchell Library, he records the trip this way ---

> "After waiting a week for a black native who promised to go with me, but did not come in - he belonged to a tribe that inhabit a country about 20 miles north of Bathurst - I set off on the 8th of November with a black native who belongs to a tribe that inhabits the country at the head of Cox's River. I found him very useful - with John Blackman the Constable and four prisoners with a determination to work a road to Liverpool Plains but found it altogether inpracticable to make a direct road. I understand the plains lay N.W about ninety miles.
>
> I took my course N.E, crossed Winbourn Dale Creek with several other fine runs of water and a good growing country.
>
> Sixteen miles I encamped at the Limestone Hills, here Government has a kiln built for burning of lime for the use of the settlement which proves to be the very best quality. Here is a curious cave through a solid rock of limestone. Its entrance is very narrow. At nine O'clock at night, I took four men with 3 candles and proceeded into it about 100 yards. At the end is a fine pool of clear water. In many places for several yards together I was obliged to creep on my hands and knees. The inside of the cave is very curious and well worth seeing. I got some fine specimens. Came out at one o'clock in the morning.
>
> On the 9th we left the Limestone Hills at five o'clock....."

Despite Lawson's collection of specimens the cave was apparently still attractive three years later in 1824 when a French visitor to Bathurst says of it ----"The way through it is covered with splendid thick stalactites of calcarous alabaster as white as sugar." The visitor, René Primevere Lesson gives an interesting insight into the economic importance of the discovery of limestone so close to Bathurst -

> "The English.....have discovered in the south west, far beyond Mount Molle the mineral substance that seems to be lacking in New Holland,

> limestone, the greatest need of which is experienced by the English for the construction of their buildings, since the coast does not produce sufficient shells to meet requirements. There was an urgent demand for this article, and it was not without the most lively satisfaction, that the discovery was soon made of the cavern lying sixteen miles north of Bathurst..... The lime derived from it is very adhesive and consequently rated highly, only it is very expensive."

From Lawson's diary reference to the government kiln the limestone in this area was already known and perhaps even the cave was already known before Lawson's visit. Discovery of the limestone deposits is ascribed by W.G.Mc Conachie to James Blackman Jnr (another one of the first ten farmers at Bathurst and the brother of John Blackman who accompanied Lawson) some time earlier in the year 1821. Whether either or both of the Blackmans already knew of the cave, the credit must be given to Lawson for recording a description of it. It is interesting to note that after a four hour trip by candle light, from 9 p.m. to 1 a.m. the party was on the way again at 5 a.m and travelled five miles before stopping for breakfast.

It seems quite likely that the "cave of consider - able dimensions.....recently discovered in the neighbourhood of Bathurst" mentioned in the Sydney Gazette of 6th October 1821 and assumed by Ward L. Havard to be the great Abercrombie Arch, was in fact the structurally insignificant, though economically strategic Lime Kilns Cave. If this is so the possibility of one of the Blackmans being actual discoverer is strong.

IV The Village of Limekilns.

Given Lawson's reference to the Government Limekiln, it needs little imagination to guess the derivation of the name of the locality. As already noted the locality is sixteen miles N. N.E of Bathurst on a road roughly parallel to the Sofala Road. Today there is little evidence of the postal mining village with a surrounding population of 270 referred to in Bailliere's New South Wales Gazetteer & Road Guide of 1866. This book describes the district as "agricultural pastoral and alluvial mining, chiefly the latter . Limekilns has a post office and one hotel, the Rising Sun". The Rising Sun was and still is owned by a family named Tobin, but is is now called Rosedale. The buildings have been inspected by the National Trust which says that a wattle and daub building was erected in 1851 and brick extensions were added in 1868. The building is still occupied, but not as a hotel.

The Tobins were early owners of the property on which the cave is located and say that they supplied lime for the building of the Bathurst Goal, about 1838, and for the Roman Catholic Church in Bathurst about 1851.

V. Cave Location and Description.

The Limekilns Cave has also been referred to as Ben Glen, Rosedale and Fernbrook. It is located on Diamond Creek a tributary of Cheshires Creek which flows via Winburndale Rivulet into the Macquarie River. The Macquarie is a major western river of New South Wales and rises in the Central Tablelands. The broad valley floor in which the cave is located is at an elevation of about 2700 feet, while the nearby limekilns range rises to about 3500 feet. Portion 48, Parish of Jesse, County of Roxburgh within which the cave is located is part of a private property now known as "Dulcis Vale" and used for sheep grazing. Prior permission to visit the cave must be sought from the property owner. The paddock surrounding the cave entrance has been an old orchard, a few trees still surviving, together with the ruins of a stone double chimney. Improvements to the cave entrance, mentioned in Trickett (see later) are still in evidence.

As mentioned in Carne & Jones, four distinct beds of limestone, all of Silurian age, occur in the vicinity of the cave. One of these beds forms a bold escarpment 200 feet high, but so far searches by BlueMountains Speleological Club have not located any caves here or in the cave limestone. The cave limestone is of quite low relief.

The cave was visited by Clunies Ross and is mentioned in passing in his article in Proceedings of the Royal Society of N.S.W. Vol XXVIII , 1894. In 1898 the cave was also visited by the inevitable Oliver Trickett in response to an application by one W.F.Hurley Esq., M.P. for the opening up and improving of a limestone cave near the Limekilns Post Office. Trickett mentioned in his report that the entrance had been improved by excavation and the erection of a gate, but that already much mutilation of formations had occurred. He recommended against the Government resuming the land or carrying out improvements, probably because "the formations are all dull coloured and of little beauty.....The cave is dirty and uninteresting throughout." And so it is now, despite the description of Monsieur Lesson, in its early days. Yet in a publication of the N.S.W.Mines Department in 1928 "The Mineral Industry of New South Wales" by E.C.Andrews, we find this ---"Other caves possesing many fine attractions also occur in the following localities.....Ben Glen". So are cave legends made.

The origin of the name Ben Glen, which was used by Carne & Jones, published in 1919, is obscure. Descendants of the Tobin family can only suggest that their great-grandfather had a son called "Ben..... The names Rosedale and Fern Brook obviously enough come from local properties.

VI Speleological Activity.

John Dunkley has provided me with a copy of the 1958 trip report on the cave by Cooranbong Speleological Association. It concludes, understandably that "the cave is of little interest". SUSS Journal I. 3 also carries

a report on Limekilns which "carefully estimates" the length of the cave as 500 yards,"so far". Gleniss Wellings has provided a copy of a trip report in Stop Press of June 1968 which contains a fairly reliable sketch map and estimates the length at 400 feet.

Blue Mountains Speleological Club visited the cave twice in 1972 and took a survey. Fall descriptions of the cave are given in trip reports in Oolite Vol. 4 Nos.1 and 2. Briefly, there is about 400 feet of passage which varies from 3 feet to 15 feet high and up to 15 feet in width. Many formations have been broken and those that remain are muddy. The cave appears to have formed along a bedding plane and at the far extremity it dips into the water table and is very muddy. Apart from the historical associations which prompted the research for this paper, there is little to kindle speleological interest.

VII William Lawson - Biographical Note.

Our first speleologist was born on 2nd June 1774 at Finchley, Middlesex, England of Scottish parents. He was trained as a surveyor. He bought a commission in the N.S.W.Corps for £300 and arrived in Sydney in November 1800 with the rank of Ensign. Like many army officers at the time, Lawson began to acquire agricultural interests, including a 500 acre grant at Prospect, where he built a 40 room mansion called "Veteran Hall".

Lawson's training as a surveyor was of particular value in the expedition which first crossed the Blue Mountains in 1813. From 1819 to 1824 Lawson was commandant of the settlement of Bathurst.

Lawson's properties included 6,000 acres at Mudgee, 25,000 acres on the Talbragar River, 6,000 acres near Bathurst, 3000 acres in Roxburgh, 1,500 acres near Springwood and 160,000 acres in various other leases, beside "Veteran Hall". In 1828 he owned 84,000 sheep, 14,750 cattle and 100 horses and was a noted importer of bloodstock.

Beside his journeys of explorations to the west and north west of Bathurst whilst commandant, he escorted a party of French Naturalists and Botanists over the ranges in 1819, and in September 1822 he made the first discovery of coal to the west of the mountains at Hartley Vale.

He was a generous supporter of the Presbyterian Church, taking an active part in the establishment of Scots Church, Sydney and Scots Church, Parramatta. He was a member of the first partly elected Legislative Council from 1843 to 1848.

A phyically strong man, hence the nickname "Old Ironbark", it is said that he frequently walked to Sydney from his home at Prospect in a day, returning in the same manner, the following day. He died on 16th June 1850 and was buried at St.Bartholomew's Church,Prospect. The "Veteran Hall" house was demolished in 1926 and the property is largely covered by the Prospect Reservoir.

Governor Brisbane is quoted as having said of him "He is one of the most extensive land and stock owners in the colony.....a reasonable and not illiberal man". All in all, a most acceptable person for the title of Australia's first Speleologist.

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PUBLIC CAVE INSPECTION

GRILL CAVE

BUNGONIA

25th & 26th August 1973.

During June 1973 B.M.S.C. was approached by S.S.S. seeking our co-operation in the organisation of the "Keep Bungonia Gorgeous" campaign weekend. As a result, B.M.S.C. accepted, organised and carried out the public inspection of the Grill Cave.

For posterity, this report outlines the organisational work carried out for the benefit of those engaged in the future in similar activities.

The aim of the weekend was the public inspection of the Grill Cave commencing on Saturday from 0900 then hourly until 1900 and from 0900 on Sunday until 1500 on the hour.

CAVE VISITOR SAFETY.

From the onset it was obvious that visitor safety would be paramount and accordingly after detailed cave inspection the following work was carried out.

I. The track to the cave was built up, levelled and widened to improve the "civilian" access.

2. Entrance cleared and made stable within limits.

3. The traditional path through the cave down to the horizontal ladder was cleared of loose material, built up where necessary and two assembly areas or stages built up and defined. In all cases the disturbance to the cave was minimal.

4. All the existing steel ladders were cleaned down removing the accumulation of mud and rocks.

5. All existing ladders had supplementary handrails fitted. These were constructed from 2" x 2" x 72" hardwood bolted to the side rail with steel cheek plates to allow a 36" - 48" handrail extension. The timber was then bound with masking tape to ensure a smooth hand contact.

6. The existing safety fence along the canyon traverse had two supplementary horizontal handrails bolted to strengthened uprights with the existing wire fastened to the temporary handrails.

7. An auxiliary suspended or elevated track was installed at the bottom of the long ladder using a 12" x 2" x 96" hardwood plank wedged and pinned to the bedrock.

8. Warning signs installed indicating low ceilings using a 2" wide reflective tape cross (+) on a 15" x 7" masonite board which was placed in prominent positions prior to the low ceiling.

9. All ladders, at the bottom, middle and top on both side rails had a 4" wide red reflective band wrapped around to indicate the width and centre of the ladder. The handrail on the canyon traverse had a continuous reflective tape spiral band, to prevent covering of the tape by displaced dirt or mud from tourists' hands.

10. Underground communications using field telephones were installed, these being connected to the surface at the visitor staging area. The first phone was installed between the first and second steel ladders. The second phone at the top of the canyon traverse and the third phone in the chamber at the bottom of the long ladder just prior to the horizontal ladder.

11. Emergency lighting in the form of candles (50/ container) were placed in six positions throughout the cave.
The basic aim was to make the cave safe within reasonable limits to ensure visitor comfort to enable the party to keep moving.

LIGHTING.

The cave was electrically lit using festoon lighting i.e. single clear globes approximately 4 feet apart using a single line suspended above the main traverse line of the cave. Details of the type of generator and power requirements can be supplied by members of the Illawarra and Lithgow extension of Sydney Speleo Societies.

VISITOR CONTROL AND BASIC TALK.

1. Every party was met at the ticket office and conducted down to the Inspection Assembly Area, ten minutes prior to the scheduled starting time. Prior to leaving the area around the ticket office a legal disclaimer was read (see attached). Before departing to the cave every tour visitor was given a single sheet handout outlining briefly the history and development with a map of the Grill Cave. During the walk to the cave staging area the party was given a brief resume of the cave of the cave history and the history of Bungonia to set the scene of "a step back into history" particularly as the Grill Cave no longer contains any of the "pretties" that visitors expect.

2. At the staging area the visitors were asked (told) to observe a number of requirements:-
(a) No smoking within the cave.
(b) No littering - bring rubbish out.
(c) Hands off electrical and phone leads.
(d) Samples of the cave are not permitted.
(e) Obey the guides.

Upon acceptance of the requirements they were introduced to their guides for the tour.

3. The initial spiel regarding cave formation and development was given in the entrance chamber with supplementary tour highlights being given during the tour, the accent being humorous and lighthearted emphasizing the step back into history. The cave and its environmental aspects and the needs for conservation were stressed during the tour. The tour terminated at the horizontal ladder, however for the visitors who did not wish to proceed beyond the canyon traverse provision was made for them to return.

4. During the weekend the party sizes varied from 3 to 70 with an average around 35/40 per party. For parties in excess of 20, 3 guides were used. This was found to be the most practical as the tours commenced every 45 minutes rather than every 60 minutes as previously determined. With a guiding staff of 9 it was found that tours lasting 50/60 minutes gave each tour guide a break in the routine and allowed for meals and refreshment breaks. Those familiar with the Grill Cave would realise that it is not conducive to large parties and with 3 guides the visitors in the party establish a greater guide - visitor relationship which makes the visit more enjoyable.

CONCLUSION.

With 3 guides to a maximum party size of 60, trips commencing every 45 minutes would be the limit for a guided tour down to the horizontal ladder without extensive and expensive track building within the cave.

Further extensions to the basic tour could be considered down to the "crystal palace" and returning out of the cave via the lower entrance. It could be possible to handle some 13/1400 visitors during a normal weekend. For on experience age was no barrier (visitors' ages ranged from 3 months to 76 years of age).

One point worth considering would be that of a refreshment come souvenir stall on the flat above the entrance, particularly in hot weather. This was a potential financial fundraising source that was missed.

TO BE READ TO EVERY PARTY BEFORE ENTERING CAVE

LEGAL DISCLAIMER

You will now be taken on a guided tour of the Grill Cave. The trip will involve many physical hazards and you are requested to observe all directions given by your guides. You embark on this trip entirely at your own risk and no responsibility is accepted by me or any other person for any injuries you may sustain. You must be quite clear that you have no recourse against anyone for any injuries you sustain - no matter from what cause. Anyone who is not prepared to take this risk is requested to leave the party now.

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BLUE MOUNTAINS SPELEOLOGICAL CLUB.

TREASURER'S REPORT FOR 1973

INCOME		
Balance brought forward 1973	$ 22. 07	
Subscriptions.	$ 138. 00	
Bank fees and interest	$ 2. 85	
Miscellaneous Income	$ 105. 70	
Trip fees	$ 25. 80	
Badges and tapes	$ 6. 60	$ 301. 02
EXPENDITURE.		
Miscellaneous expenses	$ 36. 14	
Secretarial expenses	$ 3. 78	
Equipment	$ 26. 38	
Oolite	$ 5. 00	$ 71. 30
		$ 229. 72

The year of 1973 was very successful, financially.

Included in the amount of $105.70 is the sum of $100.85 raised by the sale of Lucky Envelopes and the Trading Post.

Major expenditure was Capitation Fees to A.S.F. and the purchase of the Bracket for the Brunton Compass $18.00.

Gwen Fairweather.
HON. TREASURER.

TRIP REPORT

"BAT CAVE" Alice Springs 1.7.73

Ken Pickering.

While on a trip to Alice Springs the locals told me of a "Bat Cave" to the south of the town. Rather disbelieving, I followed the directions " a few hundred yards off the North-South road, on the south side of Roe Creek to the south of the town".

After a few minutes of bumping over the terrain in the Nissan, there it was - about five entrances via collapse dolines. The deepest entrance was about 15 feet down to a basically horizontal system which has been eroded out of a rock composed of old river gravel which has been re-cemented together with a crumbly type of limestone(?) Small nodules of limestone occur in the red sand at the surface.

The surface drainage at present enters one doline and drains away into the sandy floor. The caves of course are dry and dusty,given the prevailing climate. Even though the Todd River had been flowing on our visit due to unusual rainfall, the caves were still very dry and no decoration was seen.

For those interested in a longer than normal caving trip, these unusual caves are worth a visit and can be found at a red sandhill which rises about 25 feet above the surrounding plain through which flows Roe Creek. You can't miss it - its the only sandhill with caves.

LEADERSHIP-A RESPONSIBILITY

By Ian Bogg

OR

SO YOU WANT TO BE A LEADER

To lead a speleological expedition or trip is totally different from being led.

The leader has tremendous responsibilities during a trip - he has to ensure the safety and well being of the group that he is leading, keep the morale high and above all, ensure neither he himself, or members of the group, take unnecessary risks or wilfully or maliciously damage the environment in which we are actually seeking pleasure.

A leader must at all times take care to remain on the safe side of that "shadowy line" that separates the safe from the reckless. He must always bear in mind that were he to be injured, he not only endangers himself but exposes members of the group to needless risk in attempting a rescue or a leaderless exit from the cave. And yet a leader must possess the judgement to continue the exploration and not to be defeated by every slightly difficult ascent, descent, squeeze, traverse etc. This ultimately breeds frustration within the group and robs them of a chance to enjoy a good trip with little or no feeling of achievement either individually or as a group. The needs and aspirations of the individuals within the group must be balanced with the experience of the individuals to be successful.

What determines a good leader? This point is worthwhile examining.

As groups continue in existence, seperate roles will ultimately be established with members filling one or more of them. The most common is that of leader and complimentary to the leader is the follower, hence in accepting a member as a leader, the other members accept the role of followers. This is not always the easiest thing for individuals to do.

The key distinction of a leader is in his acceptance by the group - he is the person the group turns to, a person the members want to be leader. His function principally is to make it possible for the individuals within the group to achieve their objectives and private goals along with society or club goals. His success in fulfilling this role depends upon being followed which therefore is dependant upon his experience and personal ability in being able to identify, plan and achieve the attainment of these goals.

Leadership is often difficult because of two different and sometimes conflicting classes of needs or

requirements. One is the need to advance individuals and the club or society towards higher levels of attainment which requires ideas, plans, direction etc. The other is the need to satisfy a requirement or equilibrium in order to hold the group together whether it be harmony, mutual liking, membership standards, policies, conservation, ethics etc.

As society has illustrated many, many times, a leader is usually a person who best knows the needs and objectives of a club or society and more importantly apart from knowing them, he represents them. To this extent he tends to be the club's "ideal" a person with whom its members can identify. He usually demonstrates his ability to adapt or modify to meet the club's expectations about leadership.

A person in the leadership role has decided and distinct advantages when it comes to improving his knowledge. Much of this information flows to him more then anyone else in the club and in one way or another relates to the needs of the individual member. Time or seniority within a group or club often give an individual an opportunity to learn about the group and by knowing the history and asperations and ideas of that group enables him to clarify them with a firm perspective. It therefore can be said that, leaders are often old timers within the club.

It is needless to say that individuals in filling the role of leaders quite often achieve high status for doing so, although seniority is often a counter role and also a source of status. This may appear to be confusing until you recall the situation whereby status is acquired by an individual who has fulfilled or excelled in the principal leadership requirements, experiences and knowledge as determined by the group.

The leader can and frequently does influence the behaviour and activities of a club in a number of distinct ways -

1. They balance the needs and aspirations and objectives of each individual on a trip to ensure self satisfaction and a feeling of achievement for all.
2. They influence individuals' perception.
3. They fulfill the role of teacher i.e. education.
4. They survey and control group and individual behaviour.
5. They are promoters of re-education and the need for self improvement and support the club's standards, policies and objectives.

Nevertheless in gaining acceptance as a leader can be a tremendous and rewarding part of speleological activity. To look back at achievements which a few years earlier may have been considered impossible is in itself rewarding.

BLUE MOUNTAINS SPELEOLOGICAL CLUB - MEMBERSHIP LIST AS AT 11.5.73

Name		Address	Phone
APALAIS A	(PM)	13 Greenhaven Drive, Emu Heights 2750	51 95928 (B)
BOGG I	(FM)	29 Scott Street, Springwood 2777	51 2001
BAKER L	(FM)	Box 44 P.O.Engadine 2233	594179 (B)
CORCORAN T	(PM)	1 Carawa Street, Morington Hobart 7000	237686 (B)
DEANE G	(PM)	115 Great Western Highway, Valley Heights 2777	51 1129
FAIRWEATHER A	(FM)	25 Byrns Street, Lapstone 2773	6228111 (B)
FAIRWEATHER G	(FM)	" " " "	20577 (B)
JARVIS B	(FM)	Lot 105 Mathew Parade, Blaxland 2774	
JARVIS R	(PM)	" " "	
JOLE R.	(FM)	11 Singles Ridge Road, Springwood 2777	511869
KECK K	(FM)	114 Burdett Street, Wahroonga 2076	481037
KNOX G	(HM)	C/- Abercrombie Caves, Trunkey Creek 2741	Aberc'e 1
LANGEJANS J	(PM)	Mackellar Street, Emu Plains 2750	215967
McNAMARA G	(PM)	20 Roosevelt St.Sefton	6448503
MABIN R	(PM)	815 Punchbowl Rd,Punchbowl	7096346
MARSHALL B	(FM)	199 Hawkesbury Road, Winmalee 2777	51 2836
MATHEWS J	(PM)	28 Panorama Crescent, Blaxland 2774	
MATHEWS T	(FM)	" " " "	213992 (B)
MUMBY P	(PM)	1/37A Old Illawarra Road, Menai 2232	
MUMBY C	(PM)	" " " "	
NELSON DR.G	(HM)	Box 147 P.O.Narrabri 2390	N'Bri 1440
OCKENDEN E	(PM)	29 Spurwood Road,Warrimoo	
PICKERING K	(FM)	11 Brooklands Road, Glenbrook 2773	391346
RICHARDS B	(FM)	32 Panorama Crescent, Blaxland 2774	392015

Name	Address	Phone
SAMMUT M (PM)	34 Graham Road,Narwee 2209	5341175
SAMMUT P (PM)	Lot 3 Stahls Rd,Oakville	6271602
THOMAS L (AM)	43 Rogers Street,Kingswood 2750	
THOMAS R (FM)	22 Olivet St.,Glenbrook 2773	391595
THOMAS S (FM)	Box 22 P.O.Kingsford 2032	6610616 (B)
TREHARNE M (FM)	1/8 McDonald St,Lakemba 2195	500155 (B)
TREHARNE U (FM)	" " " "	20234 (B)
VAN LOON S (PM)	815 Punchbowl Road, Punchbowl	7096346

Legend

AM - Associate Member PM - Prospective member.

FM - Full Member HM - Honourary Member.

B - Business No. only - others listed are private nos.

1/8 - Flat number/street building alloted number.

BLUE MOUNTAINS SPELEOLOGICAL CLUB

WYANBENE

Date of Trip: 29th and 30th September, 1973.

REPORT:

After a late start on Friday (due to a necessary rewire on Keith Stretton's Landrover for the connection of Noel Hand's Trailer) seven of us headed off in three vehicles. But due to Sandra taking seriously ill by Campbelltown, we had her taken to Camden Hospital. By the time we had arrived at the Hospital, checked to make sure Sandra would be OK., and left Richard as Sandra's guardian it was 11 p.m.

After boiling the billy and having coffee and biscuits in the hospital, the depleted crew decided to spend the night off the road at the foot of Razorback.

After breakfast next morning we continued on to arrive at Wyanbene about midday Saturday.

Due to the confusion on the way down much of the equipment had been left in Richard's Toyota, including two helmets and lights and the battery charger. This meant we would have to limit our caving exploits for the weekend.

On Saturday night myself and Bob carefully explored the cave from the grill entrance to the Keyhole (3 hours). During this trip we located two more entrances, a small colony of bats, and the old tourist section. After exploring the tourist section we returned to camp for coffee and a snack before retiring for the night.

Sunday morning we were lucky enough to have our batteries recharged by the leader of a scout group visiting the caves, and in exchange we took two of their group on our long trip.

Noel, Veronica, Bob, myself and the two scouts reached the free climb past the Diarrhoea pots, but due to weakening lights and a liberal coating of mud we returned. During this six hour trip we also named several parts for identification purposes on future trips. Some of these names are already in use and others are our own. Elephant's head; Large and Small shark's mouth; Prison Bars; Dinosaurs Foot; Wart Rock; Rooster's Head; and the Man that makes the Stream.

GARY MCNAMARA

BLUE MOUNTAINS SPELEOLOGICAL CLUB

WYANBENE

Date of Trip: 19th and 20th May 1973.

Members present: Garry McNamara, Sandra Hand, Richard Mabin, Johanna Langejans, Monica Sammut, Bob Joel, Stan Thomas, Keith Ford, Dave ?, Ron Bloomfield, Bob Jarvis, Greg Hall, Ted Matthews, Barry Richard, Terry Goggin and Lionel Baker (L).

The aim of the trip was to see as much as possible and go on to Frustration Lake. As there were 15 in the party, it was decided to break it into two groups.

I led the first party and Barry Richard led the second. Mine, being the advance party, took in all the equipment and set up ladders where neccssary. Finding no difficulty with the first section, we did a little splashing at the end of the water crawl. After this we proceeded to the Gunbarrel which we looked at for a while. On returning from the Gunbarrel we were met by the second party. My party continued on to Caesar's Hall, taking our time so as to allow the second party to go into the Gunbarrel and then meet us in Caesar's Hall.

On the way to Caesar's my party had fun on the mud slopes. From this point we continued on to Diarrhea Pot where we were met by the second party. At this point the leader of the second party, Barry Richard, stayed with us and the rest of his party plus two from mine returned to the surface. Negotiating the free climb with Gary, then dropping the ladder for the others, we all went onto the Lake, looking at the Aragonite crystals which were very nice, on the way.

On the way out we found the rope would not slide. We then went back to the chamber between Gunbarrel and Caesar's Hall and then we all started out for the entrance.

On the way out we met two freelance cavers and after talking for a while we carried on to the last ladder pitch where we found that two of the party were absent. Stan and I waited there and the rest went out. Having waited for 30 minutes and not having heard from outside, we decided to go out and get at least two members of the party that had gone out a few hours earlier.

While changing and having a hot coffee, two lights appeared at the cave entrance - a very good sight.

This was a long and eventful trip with lessons learned everywhere.

LIONEL BAKER.