

AUSTRALIAN CAVER

THE AUSTRALIAN
SPELEOLOGICAL QUARTERLY

No. 110

1986



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All articles, reports, tests, photos and reviews are welcomed for publication.

These may be sent to:-

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NEWSLETTER

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DEADLINE FOR COPY

All articles should be submitted to the editor by the end of

FEBRUARY
MAY
AUGUST
NOVEMBER

If you find writing a chore, why not phone the editor directly???

COVER PHOTOGRAPH

Wombeyan Caves - North of Arch
Watercolour by Conrad Martens,
1872. Courtesy Mitchell Library

The opinions expressed in this journal are not necessarily those of the A.S.F. Inc. or the Editor.

EARLY CAVE SKETCHES

Guy McKanna

To celebrate this early issue of "Australian Caver" we have gathered together a portfolio of some of the earliest representations of Australian caves. A history, by E.A.Lane of the discovery of Australian caves is reprinted in this issue by courtesy of the Australian Museum. LANE has mentioned some earlier sketches by Augustus Earle, c.1826, that were not able to be readily located.

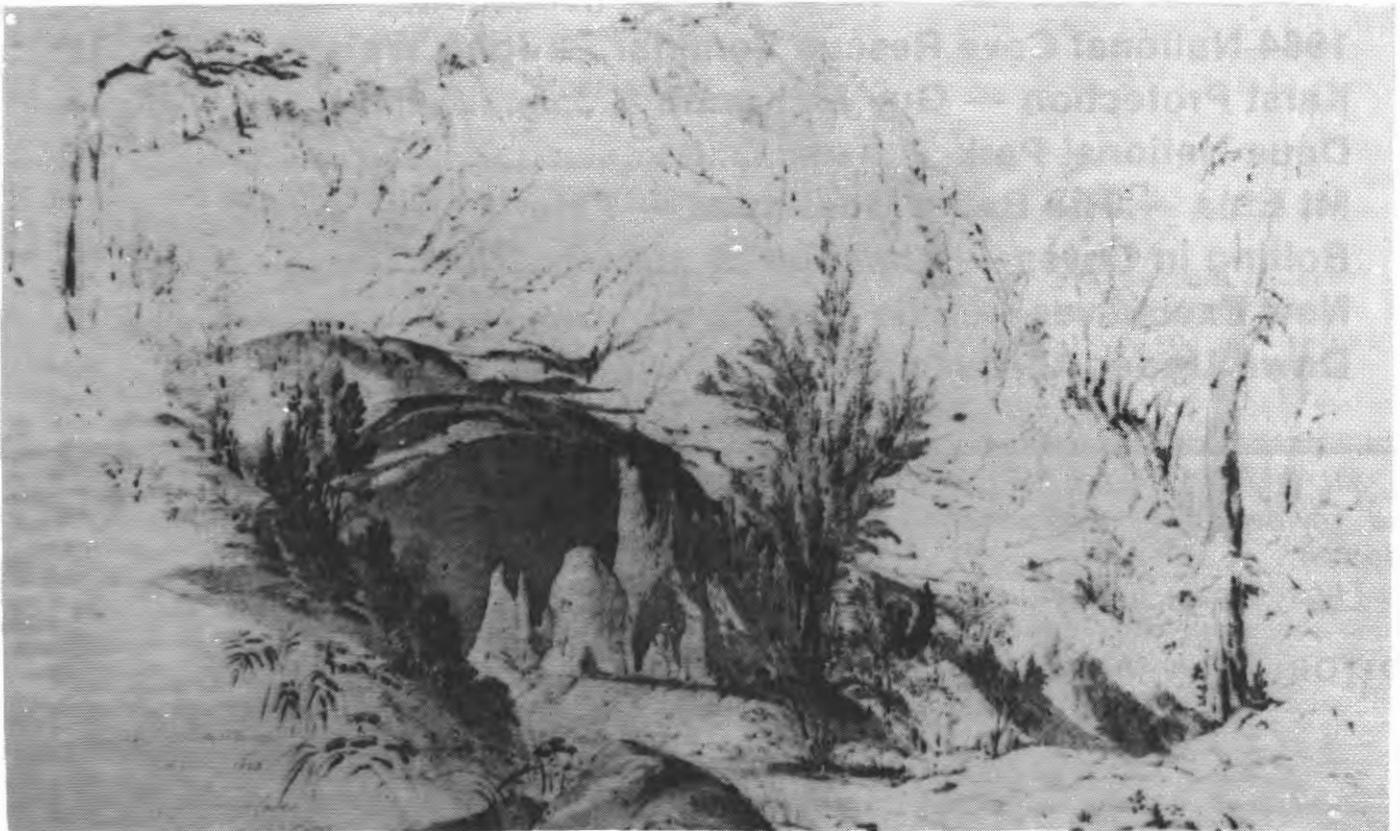
The sketches by P.G. King and Conrad Martens appear to be some of the oldest surviving renderings of caves by Europeans in this country. They are over 150 years old and show

the cave localities as they were at that time providing a basis for comparison with development, natural and human, of these features.

It is interesting to note that the "Tallendum Cave at Cavan Caves near Yass" is what P.G. King called, and what we now refer to, as Wee Jasper.

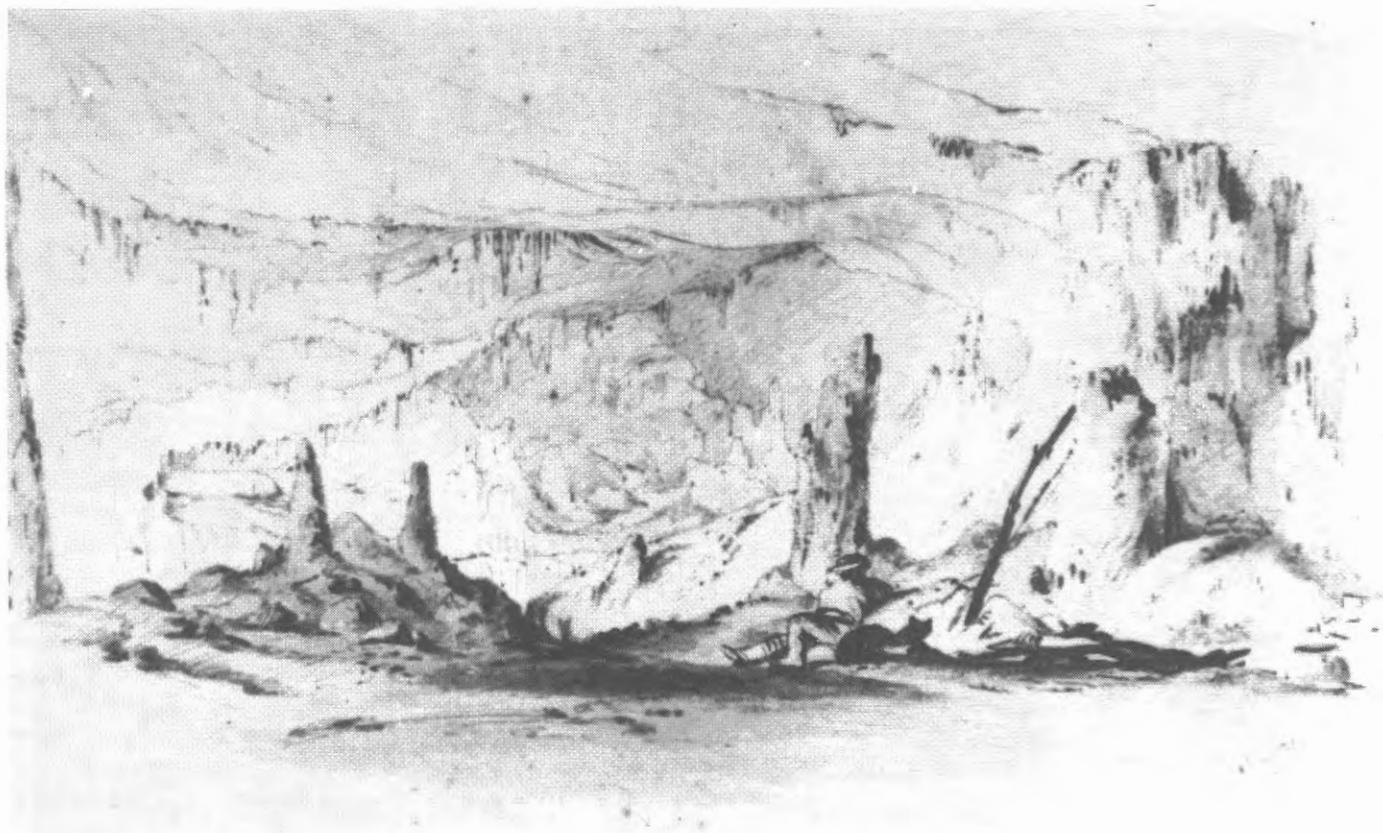
Conrad Martens calls Abercrombie Arch and Caves - Burrangalong. Was the area near Wee Jasper - Burrinjuck (now flooded) corrupted from this?

I would like to thank the Mitchell Library, Sydney and Dixon Galleries, Sydney for their permission to reproduce the sketches in this issue.



Pencil Sketch by Conrad Martens, May 1843 Courtesy Dixon Galleries.
Burrangalong Cavern - View of South Side of (Abercrombie) Arch.

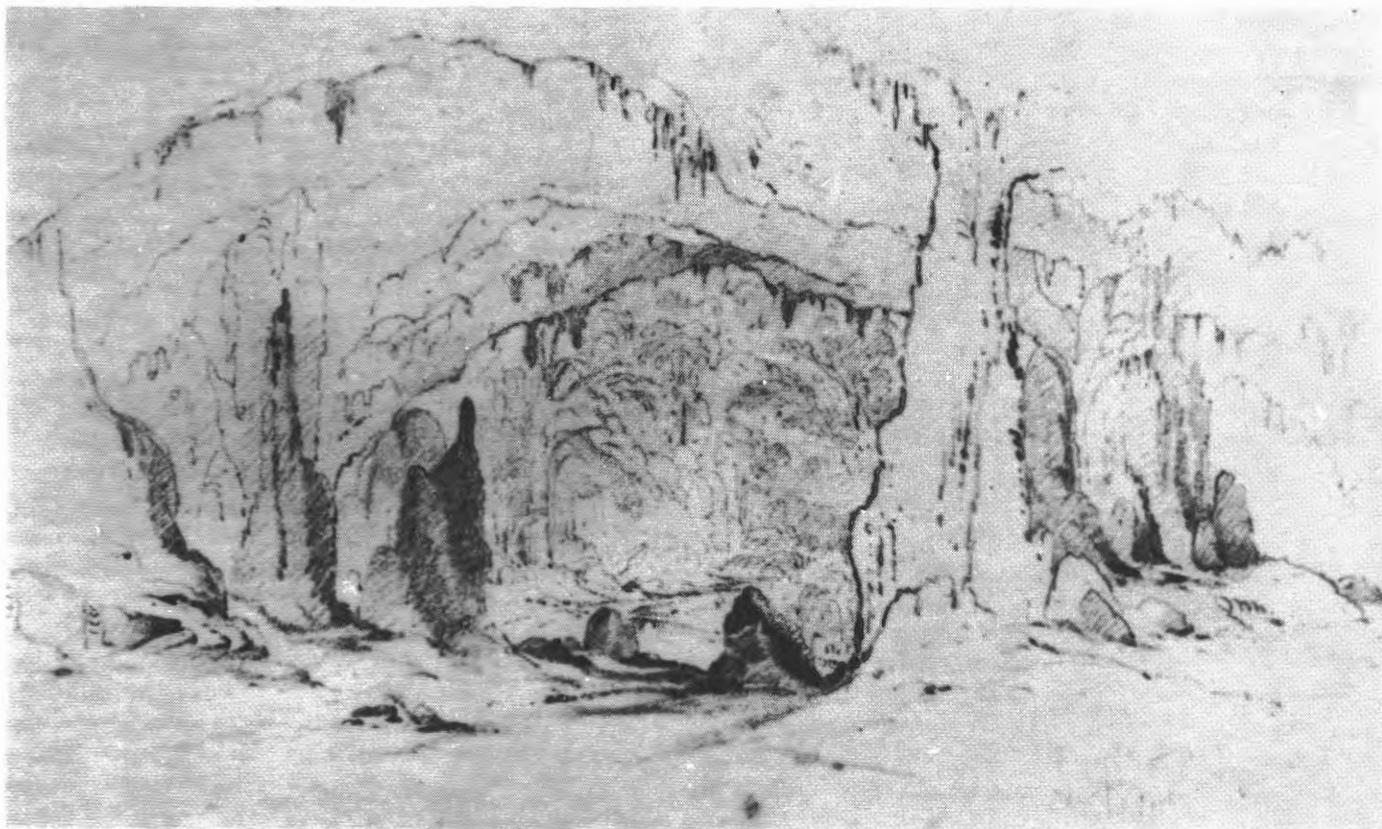
Pencil Sketch by Conrad Martens, May 1843 Courtesy Dixon Galleries.



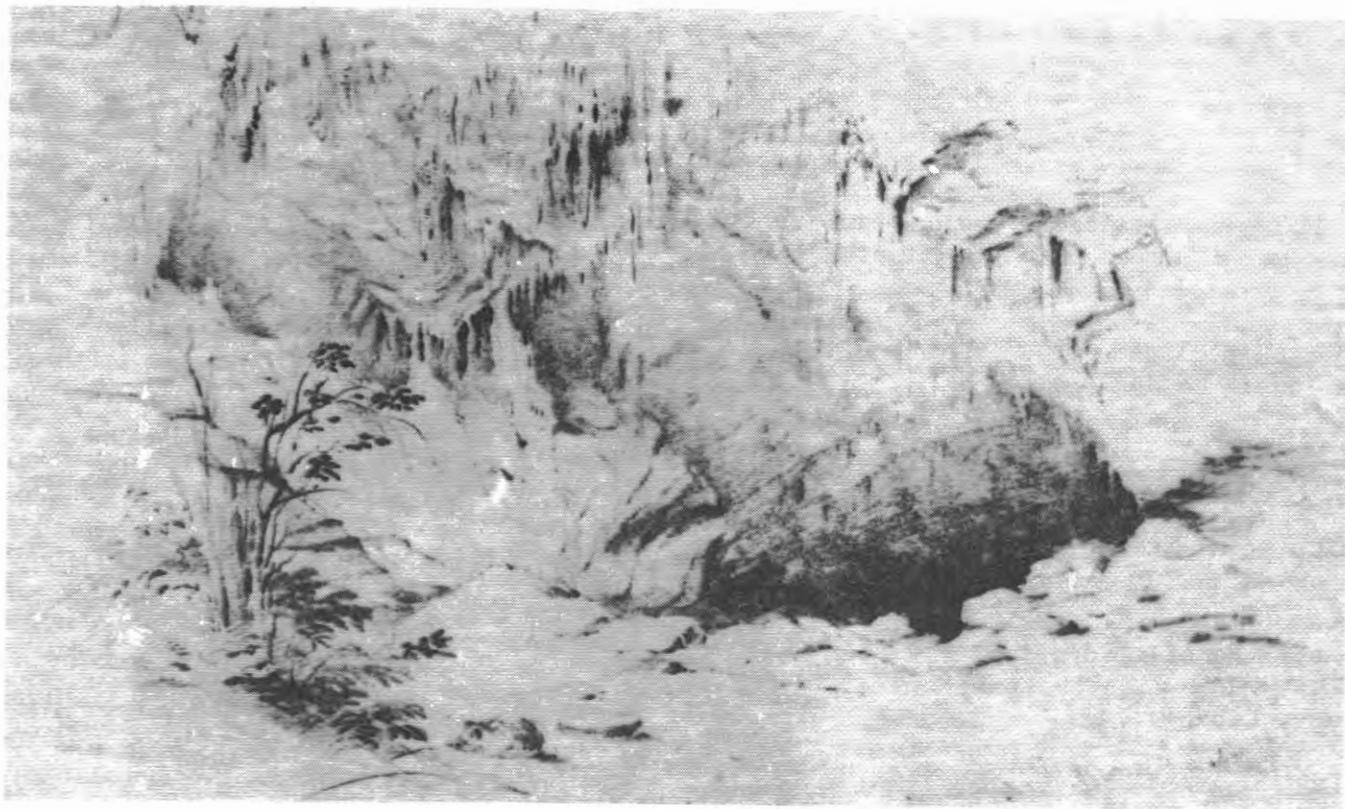
Above
 Burrangalong Cavern on the
 Abercrombie River. Pencil
 Sketch by Conrad Martens,
 21st May, 1843. Courtesy
 Dixson Library.



Right
 Arched Entrance to Tallendum
 Cave - Cavan Caves, near
 Yass. Pencil drawing by
 P.G. King, 1837. Courtesy
 Dixson Library.



Burrangalong Cavern.
Pencil Sketch by Conrad Martens, 23rd May, 1843
Courtesy Dixson Library.



Burrangalong Cavern.
Pencil Sketch by Conrad Martens, 18th May, 1843
Courtesy Dixson Library.

LIME, LIMESTONE and the FIRST CAVES

by E.A. Lane

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The foundations of Sydney, and of Australia, began on January 26, 1788 when the first party of soldiers and convicts under Governor Arthur Phillip landed at Sydney Cove to establish a penal settlement.

Within a few months of its establishment, Sydney's buildings were being constructed of brick, suitable clay having been found close to the new town. However, the shortage of lime for mortar was desperate. Only by the slow and laborious process of collecting shells around the shore and burning them could a little lime be produced.

In October 1804, Governor Phillip King despatched an expedition under the Lieutenant-Governor, Colonel William Paterson, to establish a settlement at Port Dalrymple, near the mouth of the River Tamar in the north of Van Dieman's Land (Tasmania).

In his first report to Governor King at the end of December 1804, Paterson told of the discovery, among other building materials, of abundant quantities of limestone in the area-- "a boon hitherto denied the Territory". This first discovery of limestone in Australia was most important as lime could now be produced in Tasmania and shipped to Sydney. However, limestone had still to be discovered on the mainland, and a generation of explorers to come made a point of reporting all such occurrences.

The records tell us of the first limestone discoveries in Australia, but what were the first cave areas reported? Which was the first cave actually discovered? Despite considerable documentation, the evidence allows substantial room for speculation. The lines of exploration relevant to our investigation lie south and west of Sydney.

On March 3, 1818, a party of explorers led by the surgeon and explorer Charles Throsby and surveyor James Meehan, set out from Liverpool, near Sydney, in the hope of discovering

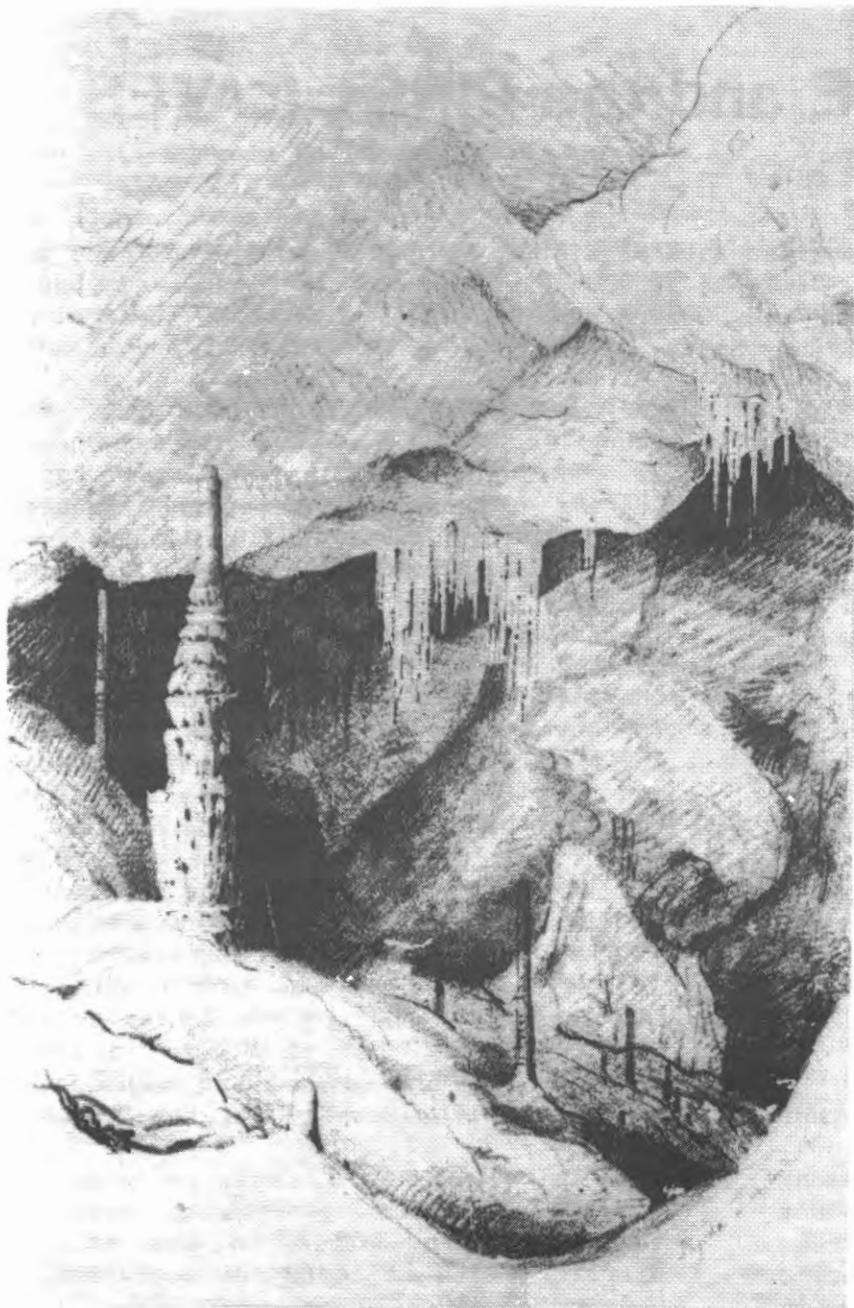
an overland route to Jervis Bay. The young explorer, Hamilton Hume, not yet 21 years old, accompanied the party at the request of Governor Lachlan Macquarie because of his previous journeys of exploration to the Berrima district and beyond. On March 25, finding themselves confronted with the gorges of the Shoalhaven River near Marulan, the expedition divided into two parties. Throsby went downstream and managed to find his way to Jervis Bay. Meehan and Hume worked upstream (south) along the high land west of the Shoalhaven.

It is uncertain whether the point of division reached by the explorers in this wild area of towering limestone cliffs and narrow ravines bordering the Shoalhaven River was in the vicinity of Jerrara Creek or Bungonia Creek. Suffice to say that they were in limestone country and the way had been opened for the early discovery of the Bungonia Caves.

In November 1820, Governor Macquarie issued an order permitting graziers to take their cattle to the Marulan district with tickets of occupation. However, because of delays, the earliest permits were not granted until 1822. Areas were soon occupied around the present township of Bungonia and along the heights flanking Bungonia Creek, the nearest property being only a short distance from the present Caves Reserve.

The first report of a cave exploration at Bungonia was made by the botanist and explorer, Allan Cunningham, while returning from a journey south of Lake George. He wrote in his journal under the date April 27, 1824 that having been informed by a settler that a branch of the Shoalhaven River was nearby, he decided to visit the area especially as he would pass over "a curiously perforated Calcareous Country -- the limestone extending N.Easterly to the great Ravines of the above-mentioned river".

Describing the visit, he said: "We found the land exceeding cavernous, orifices four feet diameter connected



Pagoda in Tallendum Cave
- "Cavan Caves " - near
Yass. Pencil drawing by
P.G. King, 1837
Courtesy Dixson Library.

with capacious subterranean Excavations, appeared in every part of the Forestland of whom some presented yawning fissures of apparently great depth, whilst others again had their apertures or mouth nearly closed up with earth". He continued that their local guide conducted the party to a large cavern. Being without lights, they did not venture far inside but were still able to see the abrupt and perpendicular chasm in what is now known as Drum Cave.

Although first written record of the Bungonia Caves is dated April 27, 1824, the caves obviously were discovered before that, perhaps as early as 1819 or 1820. In May 1823, Captain Mark Curie. R.N., (army) Captain John Ovens and bushman Joseph Wild set out from Bong Bong near Moss Vale for the country south of Lake George. They crossed the Limestone Plains (the early

name for the pastoral land near the Molonglo and Queanbeyan Rivers where outcrops of limestone occur) and finally discovered the Monaro Plains. On the return journey, they discovered 'London Bridge', south of the present town of Queanbeyan. Here Burra Creek has cut through a belt of exposed limestone to form "a natural bridge of one perfect Saxon arch".

In October 1824, an exploration party consisting of Hamilton Hume, retired sea captain William Hilton Hovell and six other men set out from Hume's station near the present town of Gunning to travel overland from the settled areas of New South Wales to Bass Strait.

They proceeded on a southwesterly course across the plains south of the present town of Yass. Later naming them the M'Dougall's Plains from the family name of Lady Brisbane, wife of the

Governor, though calling the area by the Aboriginal name "Yarrh" in their journal. They crossed the Murrumbidgee, noting frequent occurrences of large outcrops of fossiliferous limestone, continued southwest, rejoining the Murrumbidgee after some miles, this time noting high limestone cliffs on the opposite bank. (This area probably lies between Goodhope and Narrangullen.) They continued for some days on a zig-zag course, periodically mentioning limestone in their notes. By October 28, they reached what I believe to be the Goodradigbee River valley, a few miles upstream (SSE) of its junction with the Murrumbidgee.

The journal of the expedition was subsequently edited by W. Bland and published in Sydney in 1831. The entry for October 28, notes that the party travelled thirteen miles along the valley. In a footnote, Bland added that "in their progress up this valley, there were observed several large and deep holes, apparently the outlets of some considerable subterranean cavities; rich, probably, in the organic remains of these regions." Two cave areas occurred in the valley in fairly close proximity - the Goodradigbee Caves (now drowned beneath the waters of Burrinjuck Dam) and the caves at Wee Jasper. There is no way of choosing between the two cave areas. One person could opt for the Goodradigbee Caves and another for the caves at Wee Jasper. In actual fact it is quite conceivable that the explorers observed cave entrances in both areas.

In May 1813, a party consisting of the free settler Gregory Blaxland, Army Lieutenant William Lawson and an Australian-born youth, William Charles Wentworth, found a way across the previously impenetrable barrier to the west of Sydney--the Blue Mountains. In November the same year, Governor Macquarie despatched Surveyor George William Evans to cross the Blue Mountains and to find a passage into the interior of New South Wales. Evans reached and named the Bathurst Plains and the Macquarie River, proceeding some sixty-five kilometres beyond the present city of Bathurst.

In May-June 1815, Evans led an expedition from Bathurst south to near the Abercrombie River, explored the middle reaches of the Belubula River, and discovered the Lachlan River. During this expedition he observed and recorded

"lime rocks" and "lime cliffs" near the Belubula River and Mount Lewin. This was the first report of limestone on the Australian mainland.

Among a series of news items dated Sydney, the Sydney Gazette, on October 6, 1821 published a paragraph as follows: "A cave, of considerable dimensions, has been recently discovered in the neighbourhood of Bathurst; and some very beautiful specimens of stalactites have been sent to town, which were procured in it. We hope shortly to be able to lay before our Readers a more particular description."

Unfortunately, no further description appeared in the Gazette, leaving open the question--"What cave?" The leading historian of the Jenolan Caves, the late Ward L. Havard, believed this cave was "the great Abercrombie cavern", with a slight additional chance that it could be Jenolan as stockmen were in the vicinity of the Cox and Fish Rivers well before this date. On the other hand, it is equally possible that the discovery could have been the Cathedral Cave at Wellington as this country had also been opened up. Who can tell?

In his journal, *Journey Across the Blue Mountains, 1824*, René Primevère Lesson wrote that the discovery had been made of a cavern lying 16 miles north of Bathurst. "The way through it is covered with splendid thick stalactites of calcareous alabaster as white as sugar. The lime derived from it is very adhesive and consequently rated highly; only it is very expensive." A search of J.E. Carne and L.J. Jones' *The Limestone Deposits of New South Wales* (1919) reveals one cave area fitting Lesson's description - Benglen at The Limekilnes about twenty-six kilometres NNE of Bathurst on the Mount Horrible road. According to Carne and Jones, the caves were of limited extent and occurred in marble. The area has long been worked for ornamental stone, and whether the Benglen Cave still exists today or has been quarried I do not know. There is a possibility that Benglen is the cave referred to in the Sydney Gazette in 1821, despite the conflict of terms between "of considerable dimensions" and Carne and Jones' "of limited extent." However, the comparative size of a cave is often in the eye of the beholder.

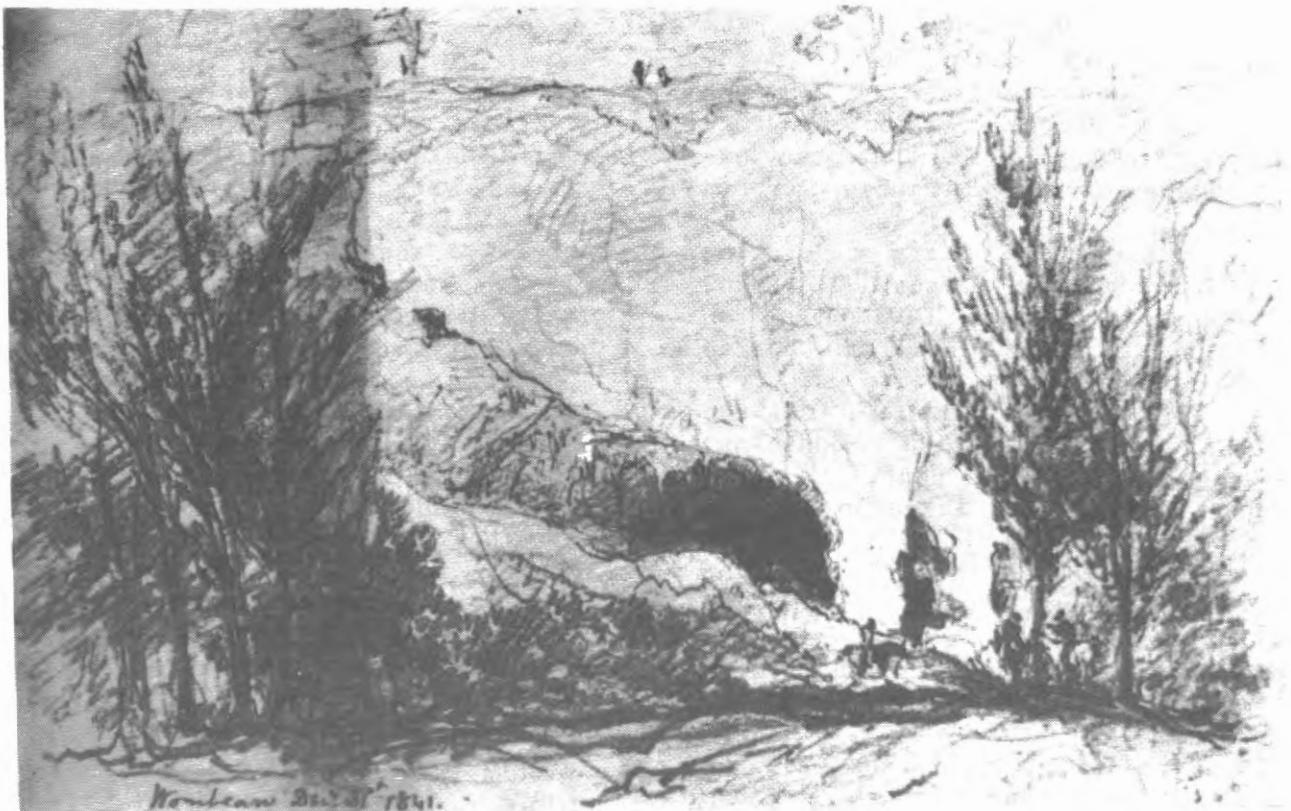
The Wellington Valley was discovered and named in August, 1817 by

Lieutenant John Oxley, the Surveyor-General of New South Wales, in company with the Deputy Surveyor-General, George Evans, botanist Allan Cunningham, the Colonial Botanist, Charles Frazer, and mineralogist William Parr. During a further expedition in 1818, Oxley noted the occurrence of limestone in the hills bounding the east side of the valley, claiming it as a valuable discovery. On his chart of the interior of New South Wales, published in 1820, Oxley noted this limestone as occurring a short distance west of the junction of the Macquarie and Bell Rivers. However, he did not similarly mark the Wellington Caves limestone on his map. The first settlement was set up in the valley in March 1823 under the command of Lieutenant Percy Simpson. The 'population' consisted mainly of convicts and their soldier guards. The stockade was positioned about three kilometres from the caves, between the caves and the present town of Wellington.

The earliest suggested discovery of the Wellington Caves by Europeans is published in a book, *Eumalga, or the White Chief*. The date of publication of the first edition is not known but the author, Robert Porter, was a long-

time inhabitant of the district. The book tells of events allegedly occurring in the Wellington Stockade and surrounding country between 1822 and 1835. John Saville, a convict, arrived at the stockade in 1823, Porter wrote, and after being ill-treated, escaped and joined a group of blacks he had previously befriended. Later, Saville revealed himself to a prisoner named Dicky Taylor, acquainting him with "the secret of the now far-famed Wellington Caves", which Taylor communicated to the officer in charge of the settlement. The information was deemed of such importance that Taylor was rewarded with a ticket-of-leave. The introduction to the second edition, published in 1947, says that the story was told to Porter by Richard Taylor, who was a prisoner at the Wellington Stockade, and other old hands with whom the writer had come in contact during a long period of years.

On May 14, 1825, the painter and traveller Augustus Earle, arrived in Sydney in the Brig *Cyprus*. In 1826, he visited the Blue Mountains, the Wellington Valley, the Hunter River, Port Stephens and Port Macquarie, returning with a portfolio of landscapes



WOMBELYAN CAVES - The Arch. Pencil Sketch by Conrad Martens, 31st Dec, 1841. Courtesy Mitchell Library.

and sketches of Aborigines. These included the first known pictures of interiors and exteriors of the Wellington Caves.

After considerable travelling, Earle joined Charles Darwin aboard H.M.S. Beagle on October 28, 1831 as artist supernumerary. Later, the artist Conrad Martens joined the Beagle at Montevideo to replace Earle who was leaving Darwin's expedition because of ill health. Martens came to Sydney in 1835, remaining for the rest of his life. Apart from the coincidence of serving as successive artists on the Beagle, Martens became the second notable painter to depict Australian caves.

The earliest written, authenticated reference to the Wellington Caves is a letter written at Wellington by Hamilton Hume, on December 4, 1828 and carried by runner to Sydney. Hume was accompanying Captain Charles Sturt as second-in-command of an expedition down the unexplored Macquarie River. Hume wrote: "There is near this place a very large and beautiful cave". He then described what is now known as the Cathedral Cave.

The expedition leader, Captain Sturt, in his journal of the expedition, refers to "Moulong Plains, a military station intermediate between Bathurst and Wellington Valley." Sturt continued that "the accidental discovery of some caves at Moulong Plains led to the more critical examination of the whole formation, and cavities of considerable size were subsequently found in various parts of it, but more particularly in the neighbourhood of Wellington Valley." The caves in the Moulong district are generally small but must be added, along with Wellington, to the earliest discoveries.

In 1830, George Ranken of Bathurst reported the discovery of fossil bones at the Wellington Caves and made the first collection of specimens. The cave concerned was probably the Breccia Cave, whose entrance was a small vertical shaft close to the entrance to the Cathedral Cave. A report of this momentous discovery appeared as a letter in the Sydney Gazette of May 25, 1830 over the signature 'L'. It was almost certainly written by the Rev. Dr. John Dunmore Lang who took a great interest in the bone collections.

Numerous other collections of fossil bones followed. Few bones were recovered intact, most being fragments

only and mixed in utter confusion in a matrix of cave earth, clay, or as a breccia. The most important collection was made by Major Thomas L. Mitchell, the explorer and Surveyor General of New South Wales, also in 1830. Subsequent examination and study of these bone collections by people such as Professor Robert Jameson in Edinburgh and Professor Sir Richard Owen in London revealed many surprises.

Owen wrote to Mitchell in 1838 that the Wellington fossils were not referable to any known extra-Australian genus of mammals, nor were they referable to any existing species of Australian mammal. The greater number of specimens belonged to species either extinct or not yet discovered living in Australia. Owen was to work for another forty years on Wellington material, publishing a series of papers through to the 1880s.

For more than 140 years now, paleontologists have been studying fossil bones from the Wellington caves, ranging from the original collections of the 1830s through to collections made during the past few years. The list of discoveries consists of a bewildering array of extinct and existing marsupials together with monotremes, lizards, snakes, birds, rodents and dingoes. The few human bones found in Wellington Caves to date have been unconnected with the fossils.

Despite their efforts there are still many mysteries to solve. We can assume, for example, that the Wellington Valley formerly supported a considerable population of animals, but no satisfactory explanation has been put forward as to why such a huge deposit of fossil bones should have accumulated within this small limestone hill.

COMPUTER NEEDS FOR A.S.F. INC.

A report on computer needs for A.S.F. Inc. is being compiled by:

Terry O'Leary
P.O.Box 7
Beaconsfield
N.S.W. 2015.

If you have any comment or opinion, please send a written submission to Terry O'Leary by August 1986.

AUSTRALIAN CAVE ART

R.G. BEDNARIK

Cave art, that is, rock art of a tradition that appears to have had a marked preference for deep caves, was completely unknown in Australia until quite recently. Dr. Gallus investigated extensive linear markings in Koonalda Cave, on the Nullarbor, during the 1960s and found them to be human finger flutings and incised parallel lines. Gallus, and later Wright, claimed considerable antiquity for this find which was difficult to reconcile with the ethnographic evidence that Aborigines did not enter deep caves, considering them as abodes of evil spirit beings.

In 1977 the Victoria Archaeological Survey found a small panel of similar markings in a cave on the Snowy River, in eastern Victoria. In the following year I investigated subparallel, linear markings in Orchestra Shell Cave near Perth that had been described by an archaeologist as having been made by people using animal claws. I found them to be finger markings that were overgrown by a later deposit of reprecipitated carbonate. It began to dawn on me that there may be more to be found in Australian caves than had been assumed by our prehistorians. Upon searching another limestone region that of Mount Gambier in South Australia, I was not surprised to locate two further caves with extensive markings. That was late in 1980. Since then, over a hundred caves have been examined in the Mount Gambier area alone, and confirmed prehistoric human markings were located in twenty of them. In addition two further cave art sites were recently discovered by me in Western Australia. In view of these finds it is reasonable to say that one of the world's two major concentrations of cave art exists along the southern coast of the Australian continent, from Perth to Buchan.

Wall or ceiling markings are present in practically all caves we have examined, but it must be emphasised that the vast majority, more than 99 percent are natural marks, mostly those of animals. It soon became apparent that

clear criteria had to be established for distinguishing archaic human cave markings from animal scratch marks, and we believe today that it is quite possible for the experienced observer to achieve that separation in nearly all instances.

The Parietal Markings Project, as we call our study, includes also the survey of similar markings in overseas caves. Many caves with finger flutings, for example, have been examined in western Europe, and compared with our Australian finds. As a result of these studies, new theories have already been proposed concerning the advent of the advanced human intellect during the early Upper Palaeolithic period. Several scientific reports have been published on our findings and many more are being prepared.

Australian cave art does not consist of one single tradition. At the numerous sites near Mount Gambier we distinguished three traditions which are clearly separate chronologically and stylistically. The oldest, consisting of finger scrawls on formerly soft moonmilk deposits, is probably older than 20,000 or 30,000 years and belongs to the oldest form of artistic expression in the world. The second style is expressed in deeply carved, always nonfigurative though often very complex and elaborate motifs. It appears to be related to archaic rock art in northern Queensland, which is over 15,000 years old, and to the rock art of Tasmania, where it was perhaps introduced before the island became detached towards the end of the Pleistocene. We call this the "Karake Style", after the cave where it was first identified. Finally, we have in some of the caves a tradition of shallow motifs that were incised with single strokes and are much younger again.

The unique cave art of Australia does not present us with pretty pictures and lively images of a long gone past, but it does enable us to come face to face with externalisations of human concepts of reality that differ significantly from that which we regard as the only valid one. Because it will help us in answering important questions about the

formulation of human world views, and in solving other aspects of the development of our intellect, this prehistoric phenomenon is of considerable scientific importance. The project of exploring it is conducted and supported by a number of people, particularly in South Australia. This includes several members of the Cave Exploration Group of South Australia, and I welcome this opportunity to thank them for their help and co-operation, and to express my hope that this collaboration will continue to be as fruitful.

Finally, I would like to bring to the attention of the speleologist assembled here the existence of a new organisation, the Australian Rock Art Research Association, also known by its acronym, AURA. The project just described is conducted under the auspices of this association, as are others. AURA produces a substantial international journal that is read in some 35 countries and is the leading English language serial on rock art research. The speaker is himself an AURA member, and should you be interested in further information about the recently discovered cave art of Australia, he would be happy to discuss your queries, or to direct them to AURA.

7th INTERNATIONAL CAVE RESCUE CONFERENCE

Dear Colleagues,

Referring to the task we were entrusted with by the I.U.S. Commission for Cave Rescue and Prevention at the 6th International Cave Rescue Conference in Aggtelek (Hungary) in 1983, we are glad to inform you that the Corpo Nazionale Soccorso Alpino - Sezione Speleologica (Italian Cave Rescue Organization, C.N.S.A.-S.S.) is working for its realisation.

The 7th International Cave Rescue Conference will be held in Italy, in the Region of Friuli-Venezia Giulia from August 29, to September 5, 1987 in the towns of Cividale del Friuli and Trieste and will be organized by the 2nd Group of N.C.S.A.-S.S.

Conference participation is open to all voluntary members of the various Cave Rescue Organizations and to all cavers interested in these topics.

The participation fee, which includes bed and board in a specially arranged lodging during the whole Conference events with tourist-excursions, speleological trips and Conference final party, quotes L.180.000.- for participants and L.130.000.- for accompanying persons.

Reports are to be presented in one of the I.U.S. - official languages.

During the Conference there will be a simultaneous translation service.

Sightseeing-tours (Venice) and speleological tours (Classic Karst, Canin-Plateau, Mount Bernadia) are foreseen.

We will provide any further information in the next circular letter to be sent in the first months of 1986.

Please send all conference mail to:

Mr. Mario Gherbaz
General Organizer of the 7th
International Cave Rescue Conference

C/o C.N.S.A.-Sez. Speleologica
Via S. Francesco
3 - 34133 TRIESTE
ITALY.

2nd Multidisciplinary Conference on Sinkholes and the Environmental Impacts of Karst.-

In February, 1987, the Florida Sinkhole Research Institute will host the "Second Multidisciplinary Conference on Sinkholes and the Environmental Impacts of Karst". This meeting will be held in Orlando, Florida, USA, and will cover the geology and engineering of karst areas with emphasis on sinkholes and practical applications, the hydrogeology and environmental problems of karst, international examples of applied karst geology and hydrology, and specific engineering considerations of karst terrane. The meeting is multidisciplinary in nature and will be of interest to geologists, geographers, engineers, hydrologists, and all professionals who deal with karst.

1984 NATIONAL CAVE RESCUE SEMINAR

John Watson

During the winter of 1984, I spent 3 months in the U.S.A. and two weeks in Canada, under the auspices of a Churchill Fellowship. My objective was to study the management of national parks and wilderness areas of the western U.S.A. with special reference to visitor safety. I planned an itinerary to include visits to many national parks and national forest areas, with potentially hazardous features such as rock faces (Grand Teton National Park, Rocky Mountain National Park, Yosemite National Park), canyons/gorges (Grand Canyon National Park), water hazards (parks along the Californian and Oregon coastline) and caves (Wind Caves National Park, Lava Caves of Central Oregon and a total of nine show caves open to tourists).

A highlight of my tour was the National Speleological Society National Cave Rescue Commission (NCRC) annual seminar held at Wind Cave National Park, South Dakota, June 17-23. The gathering comprised a total of 12 instructors and staff, 6 advanced students and 25 basic students. The participants were from throughout the United States and Canada, with myself as the only overseas visitor. A section of the national park campsite was specially reserved and a lecture room and outdoor training areas were also provided by the National Park Service. Most participants contributed to a total food plan for the week. This was excellent, because not only did it work out to be good value (fixed numbers and a fixed menu) but it meant that participants could devote more time to the course without the hassles of cooking at the end of a hard day or in a state of semi-wakedness at breakfast time.

The course comprised morning lectures and practical exercises in the afternoons. Some evening sessions were also held. The basic and advanced students had different sessions throughout the first four days, but were brought together as a team of 33 persons for an all day mock rescue and for a half day critique on the final day.

On the basic course, we were introduced to cave search and rescue theory and topics such as stretcher designs, stretcher handling, underground medical management, hauling and lowering systems, equipment limitations etc. We practiced stretcher handling on two 'artificial' cave courses made of upended picnic tables, benches etc. Two sessions were spent on nearby cliffs to practice stretcher lowering techniques. Only on the third day of the course were we taken underground and given two cave passages to safely negotiate with a stretcher and 'patient'. These exercises quickly brought out the difficulties of working in the dark and in relatively tight passages. Our group successfully managed to jam the stretcher in a 10" high sloping crawlway and failed miserably in attempting to cross a 20 foot deep pit. On the second passage, we began to develop into a more co-ordinated team and had few difficulties in negotiating a series of crawlways, one squeeze and a downward spiralling chimney.

The highlight of the week was the mock rescue. One person was appointed as the rescue co-ordinator but otherwise it was left to the group to organise itself. The callout eventually came in the middle of breakfast when one of the instructors burst into the room with a largely incoherent tale of two lost companions. One suffering from uncontrolled diabetes and the other from a fall.

Although it turned out that the accident scene was a mere 15 minutes of reasonable caving from the entrance to Wind Cave, due to the complexity of the cave system, it took some five hours and three advance 'bash' parties to locate the scene. One of the 'cavers' was found unconscious and stuck in a narrow crack and the other had a broken leg. Both were at the bottom of a corkscrew pit/fissure combination. It took considerable time to extricate the unconscious caver from the crack and to stabilise both patients in stretchers ready for raising out of the pit. We then hit difficulties in the raise due to a combination of factors including: insufficient edge rollers in the corkscrew pit, limited belay points around the roof of the pit which made it difficult

to position the top edge roller in the most desirable position, confused communications despite the use of field telephones between the top and bottom of the pit, and increasing tiredness of the participants. Around 9.00pm, one of the main anchors at the top of the pit began to move - as it was a rather large bundi - like a ton or so - the mock rescue was immediately aborted and became a 'for real' evacuation. Some two hours later everyone was reassembled safely on the surface and an incredible heap of gear brought out of the cave. After a quick head count, overnight guards were placed on the gear and the critique left until the next morning.

The critique was extremely valuable. We worked through all aspects of the rescue, such as co-ordination, surface control, communications, the initial search, activities at the base of the pit, the unsuccessful raise and the feelings of the 2 accident victims.

My own involvement in the mock rescue was initially assisting at the surface field control base, recording the movements of team personnel. Later, I was assigned to the small communications team which had to establish field telephone contact between the bottom of the pit, the top of the pit and the surface. Once this was set up, I joined the haul party at the top of the pit and operated a Gibbs safety on the main haul line during an early attempt to raise the first patient, which resulted in the stretcher jamming in the fissure. After lowering it back to the floor pit, I returned to the surface to let someone else operate the safety. Shortly after reaching the surface, we heard of the unstable anchor, so I just missed the 'action' - in fact I would have been right next to the failing anchor!

In retrospect, I think the proposed extrication of two stretchers up a corkscrew pit was somewhat ambitious. The course instructors should have recognised that the basic students had only practised raising a stretcher plus attendants up steep grassy slopes - a straight pull in the open air. This was much easier than tackling a tight corkscrew pit complete with fissure.

Nevertheless, the mock rescue was an excellent climax to the course

It did bring out the intricacies of a big operation, including surface control, communications etc. It clearly illustrated the complexities of cave rescue, considering that it took the team 6 hours to locate the accident scene and that with a relatively expert team of over 30 people, things went so wrong. In a real callout, it would be unusual to have such a large and well-trained team to hand.

I have a copy of the course program and the NCRC Training Manual - also a small number of colour slides taken during the above ground sessions of the seminar. I am hoping to obtain an edited videotape of the seminar, which may include some of the underground action including portions of the mock rescue.

Finally, I would urge anyone with caving interest and experience to attend one of these seminars if ever they have the chance - many of the techniques taught could save the lives of yourself or your companions in a small group accident situation, and you would certainly be far better prepared to play an effective role in a large cave rescue operation.

JOHN WATSON (W.A.S.G.)

REGIONAL MANAGER.

SOUTH COAST REGION (ALBANY).

DEPT. CONSERVATION AND LAND MANAGEMENT.

WESTERN AUSTRALIA.

INDIVIDUAL MEMBERSHIP

Pending proposed constitutional changes to allow a form of non-voting individual membership of A.S.F. Inc, an interim Individual Associate scheme has been established. Applications can be directed to Mr. Chris Dunne

Secretary
A.S.F. Inc.
P.O.Box 388
Broadway
N.S.W. 2007

The fee for individual associates is \$30.00.

KARST PROTECTION

Guy McKanna

Karst is a natural resource. Due to the slow rate of cave formation it can be virtually considered a non-renewable resource. Karst therefore requires management if it is to be utilised in the future as well as now. Over-use of this resource not only wears down the intricate features of our caves, but can also cause 'political' and other problems, such as those in N.S.W.

For example, the N.S.W Department of Tourism (the "manager" of most caves in N.S.W.), is now restricting speleo access to permit controlled caving areas, only granting scientific based trips to these areas. The Department once again has decided to brush aside "sporting" caving. What the Department tends to do is include exploration and familiarisation in their category of sporting caving. Both of these activities are extremely necessary and beneficial facets of speleology. Whilst the problem is that the Department does not understand the value and need for speleology, it affects us, the speleo in that the science/sport is being threatened, by bureaucracy yet again.

The Federation was established to try and resolve these problems. Another relevant example of this problem resulted in the formation of the Cave Divers Association of Australia. The C.D.A.A. was established by concerned divers, not only to protect sink-holes and their formations from wanton and unintentional damage by over-use but also the divers rights to dive the sink-holes. Numerous diving fatalities concerned the Government so much so that they almost decided to stop cave diving all together. The formation and categorization of sink-holes and divers; - a self regulating plan of management, has kept the sink-holes accessible and made divers more aware.

Possibly a similar system, (though less rigid for functionality), could benefit the Federation. Non permit areas and caves that flood regularly, (self-cleansing caves), could be utilised predominantly for sporting caving.

Whilst those with restricted/permit access may only be used for scientific, (including surveying) exploration, familiarisation, and cleaning trips. Sporting cavers could provide support/backup for such trips. An A.S.F. membership card seems to be desirable, as would some form of testing to assure competence of Federation cavers.

The main aim of the Federation is to protect our karst heritage as well as our rights to cave. The Government has shown that it obviously cannot do this adequately. So it is up to us. Please remember your responsibilities to the environment, each other and the future, when caving.

DO YOU HAVE SPECIAL KNOWLEDGE OF ANY PARTICULAR CAVING AREA?

If you feel you have information that may be useful about certain caving areas or even particular caves to the Cave Rescue Group of New South Wales.

PLEASE GIVE US THE BENEFIT OF YOUR SPECIAL KNOWLEDGE.

We are trying to compile a list of cavers, who can supply detailed data about caving areas for use in a possible rescue situation.

We are also interested in hearing from you if you feel you can offer assistance and wish your name added to a list of cavers who are willing to help in rescue situations.

Besides these soft options the Cave Rescue Group can use new members. If you are interested in helping please contact:-

The Cave Rescue Group
P.O. Box 122
Bankstown. 2200 N.S.W.

Or Phone:

Mike Lake (02) 524-5299(H) (02)6923145(wk)
Grace Matts (02) 70-0374(H)
Terry O'Leary (02) 319-1930(H)

Deua National Park

Dear Sir,

The National Parks and Wildlife Service is responsible for managing more than 20% of the approximately 90 cavernous areas in N.S.W.; five of these occur within the Deua National Park. These areas include the Wyanbene Caves, the Big Hole, Marble Arch and the Bendethra Caves. The important values and high significance of these cave areas has long been recognised with "Reserves for the Preservation of Caves" dating back to the 1800's. In the past the caves have had very little active management and none since the turn of the century until the gazettal of the Deua National Park in 1979.

Increasing community interest in sport caving has resulted in pressures on the caves rising dramatically and several of them, chiefly Wyanbene and Bendethra caves, have suffered unacceptable impacts from visitor use.

In response to this and other potential problems the Service will aim to achieve the following management objectives for karst areas in Deua National Park until a statutory Plan of Management is adopted:

- * to protect karst and its associated natural and cultural resources.
- * to encourage scientific and educational enquiry into environmental features and processes, prehistoric and historic features and management of park use.
- * to provide appropriate recreational opportunities.
- * to increase public understanding of karst resources.

All caves in the Park have been classified according to the Australian Speleological Federation classification system. To achieve the protection required and provide for appropriate use by the public, a formalised system of visitor use of caves in Deua National Park will be adopted as of the 6th July 1986. In some cases there are restrictions on the type and level of use (see attachment).

In order to protect some sensitive

caves that are not known to the general public a full list of caves for Deua National Park and their classifications will not be provided. To determine before hand if a permit or other restrictions apply to the cave(s) you or your group intend visiting, please contact the Narooma District Office by phoning (044) 762798.

Your co-operation in this matter is appreciated.

Yours faithfully,
P. Cope
for DIRECTOR.

CONDITIONS GOVERNING ACCESS TO CAVES WITHIN DEUA NATIONAL PARK

1. All groups proposing to use the caves within Deua National Park are to provide the Officer-In-Charge, Narooma District, with an annually updated list of the office bearers, their addresses and telephone numbers. This information is required in the event of an emergency.
2. Applications for a visiting permit for certain caves must be lodged with the Officer-In-Charge, Narooma District at least four weeks before the date of the visit and not more than 10 weeks in advance. To determine if a permit or restrictions apply to the cave you or your group intend visiting, contact the Narooma District office by phoning (044) 76 2798.
3. For caves that require a visiting permit, or consent to enter, the maximum number of of cavers on any one trip is to be six, with a minimum of four. The maximum number of climbers on any one trip into the Big Hole, is to nine with a minimum of four and a minimum surface party of two.
4. Each trip is to be under the guidance of a fully experienced leader who will be responsible for the safety and conduct of the party and for the party's compliance with the conditions.
5. Each application is to include the name of at least two party members.
6. Groups must abide by the decision of the Officer-In-Charge in respect of caves

they may enter, the nature of work to be done, the location of base camp, access provisions and any other special conditions related to the visit.

7. Contact must be made either in person or by telephone, one or two days before the visit, with either the Narooma District Office (044) 76 2798 or Braidwood Office (048) 42 2075.

8. All flora and fauna, rocks, minerals and fossils within National Parks are protected, both on the surface and within caves. No person may 'disturb or collect' without a current scientific consent from the Service.

9. A group shall make available to the Service, copies of all reports, maps and other material prepared as a result of investigations in the area;

a report on each permit visit is expected within fourteen days. Please use the attached caving report form.

10. These conditions as well as those on the reverse side of permit application forms and permits, are to be brought to the attention of all cavers in the party.

11. The requirements of the National Parks and Wildlife Act, 1974 and Regulations under the act must be followed at all times.

Note: # # # #

There are Permit Forms and Caving Report Forms available from:

N.P. & W.S.

Narooma District

P.O. Box 282

Narooma, N.S.W. 2546.

Mt Etna - The Battle Continues

Just a short report to let ASF know the CQSS is still active and desperately fighting for Mt. Etna. I (Peter Berrill, President) have just started (2 years) caving again after a spell of 8-10 years and can see no advancement on the Conservation issue after all this time. It is not for the want of trying by the CQSS and UQSS. The State Governments attitude to us is negative and the National Parks seem to be on the side of Central Queensland Cement!

CQC are presently mining a hill of limestone to the immediate west of Mt. Etna.

They have levelled this hill and are going to open cut mine. The open-cut operations have destroyed at least 1 known cave. This cave was found one night by the members and named "Crystal Cave". It has since been completely destroyed. It was photographed extensively because of the quality of cave decorations.

The formation in this cave would have equalled anything in the World. Quite a statement I know! but I think it is true. The cave did not have a bare patch of limestone. It was too beautiful for words to describe.

The mining has about 2 years of supply left at their present sight and we have stepped up the battle to try and force the issue, but as yet have

had no official comment from the company. As for National Parks - well! They seem to be working against us. The Ranger responsible for Limestone Ridge National Park, named "Fitzroy Caves National Park" is not allowed to officially go on Mt. Etna and cannot make any statement on the issue.

When they exhaust their present supply of limestone the next area is the Cavernous Face of Mt. Etna. At this stage we don't look like stopping them. We, the UQSS and CQSS, have tried all avenues available but come up against a brick wall.

Our active membership only numbers about 12 and with limited numbers it is hard to achieve much.

As I previously said I have rejoined the club after a spell of some years and I am trying to regenerate membership and interest to help the issue.

We have been battling now for at least 20 years. It may be the longest running conservation battle in Australia and they are still mining away our caves and turning them into cement. We need numbers to help.

At this stage the only alternative left seems to be to go underground to stop them. This has been considered by a number of members, but is still only a personal issue.

Peter Berrill

BOLTING IN CAVES

Alan Warild

A recent trip to Maydena has forced me to make a few comments regarding bolts in our caves.

I believe in placing bolts in caves. Once in, they make rigging faster, safer and lighter. The problem is that there appears to be an alarming number of people who have very little idea about how to best use bolts. This is not surprising, considering how little practise the average Australian caver gets in using them.

So possibly a few pointers are in order:

The position of the bolt is most important. After all, the main reason for using bolts is to put an anchor in a place where nature didn't provide one. Be especially careful to place bolts so that the rope will hang free below. In most cases you have wasted your time if you need a protector below the bolt where the rope goes over an edge.

One example to illustrate my point:- The top of the last pitch in Dwarrowdelf probably has the worst case of "Bolt-Rash" in Australia-9 bolts when 2 or 3 would suffice.

In this case the 7 bolts along the wall are unnecessary. Setting bolts can often be a "displacement activity" to avoid the "awesome drop below." Any of the 7 make a useful handline for getting on and off rope without interfering with the pitch above, so one of them isn't totally wasted.

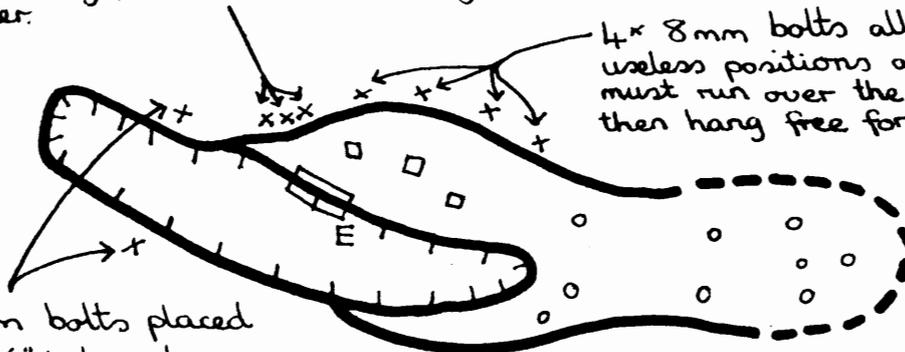
With the exception of traverse lines to get out over the pitch it is well worth the time to "test hang" the rope from the proposed bolt position. Don't be afraid to hang out in some odd position for 20 minutes to place a bolt. I've seen people use 'skyhooks' to cling in impossible positions, just to get that 'perfect hang'. If you do your job well enough the next caver will have no option but to use the good rig-point you've provided.

While you're out there, take care to set the anchor properly. Before you actually set it, use the drill to "sculpt" the edge of the hole so that the anchor will lie flush, or just below the surface. (It helps to overdrill the hole by 1mm-2mm. Most new drivers are designed to let you do this). Then smooth the surrounding rock so that the hanger will sit well. Do all this smoothing last so that you don't have to drill a hole with a blunt drill.

3 "bark-ins" from the old days placed so close together that they risk being pulled out as one big crater.

4 x 8mm bolts all well set but in useless positions as the rope still must run over the bad edge "E", then hang free for 10 m.

2 x 8mm bolts placed for a "Y" belay hang the rope free.



When you leave, take your hangers with you. In wet caves especially, they only increase corrosion of the anchor unless well greased. It is also helpful to take some tool (wire hook, spark-plug cleaner etc.) for cleaning out dirty anchors.

Finally, place bolts with discretion. Perhaps the best one is that which will never be found again. Normally it is best to place them so they are readily visible to avoid a later caver missing yours and putting another nearby.

New Bolts in Maydena Caves

If you have a copy of "Vertical Caves of Tasmania" these few update tackle notes may be useful. --

All directions are taken facing down (as in the guide)

Ice Tube - "Degenerated Man" now has 2 bolts. Fabulous Spangly Part 11 has 1 bolt. Maelstrom has 2 bolts out on the left wall, one at head height and another at - 5 metres and further out.

Kazad Dûm - Both drops in the bypass above streamway have new bolts. The 10m pitch has 1 on the spike opposite and below the eyebolt and the 20m

pitch into the streamway has 2 if you traverse out from the eyebolt.

Dwarrowdelf - 2nd pitch - 1 well out around the corner on the left wall.

- **3rd pitch** - 2 old bash-ins plus a slightly cross threaded 8mm at the top and 1 good one at - 10m on the left wall.

- **4th pitch** - 1 on the edge out left.

- **5th pitch** - 1 at - 15m well out on the right wall, just below a small step.

- **6th pitch** - two for a "Y" belay at the far end of the slot. 4 good spares on the wall for a handline!

Alan Warild

New Executives

In January of 1986, at the ASF meeting, several new members were elected to the executive.

LLOYD ROBINSON - Lloyd Robinson is the new ASF President. He's an active member of ISS, where he has been President and Vice President, and a long time member of SSS. Lloyd has been caving for forty years and could perhaps claim to be the longest active caver in Australia. (any challengers?) He has covered most caving areas in Australia, although there are one or two he admits he hasn't visited yet, such as Wee Jasper. Lloyd has mainly been involved in expedition-style caving to the Kimberleys or other parts of Western Australia.

Although mainly interested in cave photography and exploration, Lloyd has had wide caving experience ranging from lighting to cave management studies to driving a tourist tunnel into Jewel

Cave in Western Australia. (which is a particularly good example of how a tourist cave can be developed).

There are four Vice Presidents, Mike Armstrong, Ian Mann, Kevin Mott, and Andy Spate.

MIKE ARMSTRONG - Mike is currently President of ISS. He used to be a member of MUSIG (pre MUCG) where, at various times, he has held the positions of President, Vice President and Treasurer. Mike has been caving for sixteen years and has managed to cave in most states in Australia.

He has been involved in a fair bit of work around Mt. FAiry, mapping at Jenolan, especially Mammoth Cave, and cave exploration in the Central West of NSW, in areas such as Apsley and Narrigal. Mike is a geologist who likes rocks and Coopers Ale.

IAN MANN - Ian is also our Newsletter Manager. He has been caving for a number of years and has caved in a fair number of the areas in Australia, including the Kimberlys and Tasmania. Ian is a member of SUSS where he has been President and Secretary. Ian is the organizer of SPELEOTEC 87, which promises to be an interesting event, so make sure your'e there!!

KEVIN MOTT - Kevin, at various times, has been President, Vice President, Secretary, Quarter Master and in charge of Search and Rescue of CEGSA, and can also eat eggs raw. He's been caving for fourteen years, mainly at Narracourte, Mt. Gambier, Flinders Ranges, and the Nullarbor. Kevin is interested in cave photography and surveying and more recently in Park Management and Cave Reserves.

ANDY SPATE - Andy is currently a member of CSS. In the past he has belonged to NUCC, VCES, VSA, and YRG. At various times he has been ASF Treasurer, Committee Member Vice President, Librarian, and Convenor of the Conservation Commission. Andy is a corresponding member of the Bibliographic Commission of the IUS and of the Commission on Man's Impact on Karst of IGU. He has also been involved with the ASF consultancy teams on the Nullarbor, Tartaroola, and the Kimberleys. In his twenty-eight years of caving, he has caved in all the states of Australia (except N.T.) and New Zealand. Andy takes particular interest in Yarrangobilly, Coolamon, The Nullarbor, cave management, tourist cave presentation, caver/tourist impact on caves, karst processes, hydrology of karstic terrain, caver/bat interaction, flora of karst areas and the avoidance of tight squeezes and vertical drops.

CHRIS DUNNE - Chris is our new secretary. He has been acting in the position of Assistant Secretary since Guy McKanna went overseas last December. Chris started out caving with scouts and later joined NSWITS and more recently SUSS and HCG. He has been on the committee of all three at different times as either President, Secretary or Treasurer and ASF Rep.

He has caved in Tasmania, the Nullarbor and extensively in N.S.W. His favorite areas are Coolamon, Mole Creek, the Nullarbor and Bungonia. Chris is especially interested in geomorphology and digging at Bungonia (he refuses to divulge the site).

DEREK HOBBS - Our new assistant Secretary has been caving for 10 years. He is a member of MUCG where, over the years, he's been President, Secretary, Treasurer, ASF Rep., and Publicity Officer. He has been to most of the more common caving areas in N.S.W., as well as New Guinea, the Nullarbor (several times) and Tasmania. Histoplasmosis is Derek's special interest (he doesn't have it!). Specifically, he writes case reviews of cavers with histoplasmosis.

LLOYD MILL - Lloyd is our Treasurer and is the 4th in the history of ASF. The Treasurers have a tradition of serving for 10 years (?????) so Lloyd is likely to be with us for a few more years. He is a member of the VSA and in the past has been a member of the Monash Bushwalking Club. Lloyd has been caving for 13 years, covering all of Victoria, and including Chilligeo, Margaret River, Tasmania and New Zealand. He is especially interested in surveying and bureaucracy.

KERRIE BENNETT - Kerrie is the Newsletter Editor. She's been caving for 12 years, first of all with MUSIG, then MUSIG SOUTH COAST, and now with ISS. Kerrie has caved all over N.S.W., but her favourite area is Wyانبene.

Her special interest at present is the rearing of a new generation of cavers in the shape of Robbie and Geoffrey.

NIBICON

It was resolved at the ASF Committee Meeting, Jan 1986 that all Nibicon material be commercially copied, with funds from the Nibicon account, for archival purposes. the surplus funds will be advertised in "Australian Caver" as available for return to the original subscribers. Subscribers will be invited to donate their monies to A.S.F. Inc. publication funds. Their availability will end three months after the date of publication in "Australian Caver". If you wish to have your subscription returned, please contact: Mr. Chris Dunne, Secretary, A.S.F. Inc. P.O.Box 388 Broadway N.S.W. 2007.

DOWN UNDER ALL OVER

CQSS: Club members have been very active during the past few months, with the discovery of a major new cave on "Limestone Ridge" - Tourists trips to Bat Cleft, Mt. Etna and assisting a number of news teams with reports on the conservation battle for Mt. Etna.

The new cave is yet to be fully explored but has proved to be the deepest, most beautiful and one of the most sporting caves in the area. It has been measured to a depth of approximately 60m, of which the entrance is a 6m vertical chimney leading to a shaft of about 55m, which is partially blocked 20m down. The cave consists mainly of an active stream passage, which is rare to the area, flowing through a number of large caverns which are highly decorated.

Once again the "Little Bent Wing Bats" returned to "Bat Cleft" cave Mt. Etna to have and rear their young. During the months of November to mid - February the speleos have been busy taking members of the public 3 and 4 nights per week to view the emergence flight of the bats and also to acquaint them with the Conservation issue.

Due to the continuing mining next year it may be impossible to take the public to Bat Cleft.

Members of the CQSS and UQSS have assisted a number of state wide and local film crews to report on the conservation issue. We have also had a number of local press releases which generate local public comment.

Peter Berrill

SCS: The upsurge in caving activity reported in the previous issue of "Australian Caver" is continuing throughout the first half of 1986. The society has also expanded significantly-human resource wise. The membership (financial) for the 1986/7 year is pushing up towards thirty and is expected to exceed this mark.

One of the more newsworthy speleo finds of 1985 (previously

unreported) was made in a grotty little hole at Ida Bay. The short vertical entrance shaft was discovered in 1982 by a southern caver looking for a place to perform a normal bodily function. The cave was duly explored, a possible extension (a squeeze) noted and the cave was then virtually forgotten until a novice trip in early 1985. The extension was pushed and the way led to a veritable treasure house of bone deposits. Among the remains were a couple of complete thylacine skeletons, several thylacine skulls and the probable remains of an extinct species of wombat. The news of this find managed to find its way into the national media.

At Mt. Weld (not Wald) another two new pots were investigated, both choking out about 50metres. One of the trips to this area stayed at the Arakkis doline campsite. The campsite is dry, sandy, surprisingly mild and is contained in the uncollapsed side of the huge entrance doline. The two hour walk to Arakkis is well worthwhile, even if only just to drop (about 30m) into the campsite. The potential for deep/spectacular holes in this region is very good, the only hassles being belts of thick regrowth scunge including patches of horrible horizontal. Also at Mt. Weld a search for the long lost Aardvaark Pog Bowl has so far been fruitless while the location of the perhaps mythical Princess Gregsies Chuckle Pot remains a mystery.

An Easter trip to the Mackintosh River found very little in the way of enterable caves and interest in this area is waning. Other trips have gone to Mole Creek (incl. Kubla, Croesus, Herberts Pot, Sassafras Creek Cave and a new cave with 600-800m of passage awaiting surveying) and Ida Bay. At Ida Bay several visits have been made to Exit Cave where a new generation of cavers have marvelled at the vastness of this system.

As promised in a previous issue of this magazine, the "Southern Caver" will reappear sometime in the nearish future, but don't hold your breath.

Russell Fulton

A big range of Paddymade bags -the choice is yours.



KIANDRA — compact! Mini size, mini weight with high quality and high comfort. Kiandra is a "3 season" semi rectangular down filled bag with ripstop nylon outer and cotton inner lining which ensures unlimited comfort. Able to mate with similar Paddymade bags. Kiandra's so small, ten will fit into an average size rucksack.



HOTHAM — versatile! The most popular Paddymade sleeping bag, perfect for every conceivable type of outdoor adventure. Hotham's box walls and high quality loft down, ripstop nylon shell and its ability to mate with similar Paddymades make it the versatile, happy compromise sleeping bag.



BOGONG — the snow bag! The no nonsense, no compromise winter sleeping bag. A versatile flat opening semi rectangular bag, nevertheless is designed for truly cold conditions — perfect for skiers and climbers. Mates with similar Paddymades.



SNOWLORD — Everest conditions! The top of the range tulip shape specialist sleeping bag. Designed for superior performance for major overseas climbs, extremes or high altitudes. Slanted walls, tapered ripstop nylon shell and boxed foot section make Snowlord the ideal "expedition" bag for serious users.

PADDYMADE SLEEPING BAG COMPARISON CHART

MODEL	WEIGHT INC. STUFF SAC.	CONSTRUCTION	FILL WEIGHT	FILL	TEMP. RATING*	ZIP	SIZE IN STUFFSACK cm
KIANDRA	1.25 kg	Sewn Thru	500 g	550 Loft Down	5°C	Full Zip	30 x 17
BIMBERI	1.00 kg	Box Wall	550 g	550 Loft Down	-5°C	Side Zip	30 x 17
HIGH PLAINS	1.80 kg	Box Wall	1100 g	Featherdown	-5°C	Full Zip	34 x 23
HOTHAM	1.60 kg	Box Wall	700 g	550 Loft Down	-5°C	Full Zip	34 x 23
MELALEUCA	1.55 kg	Box Wall	800 g	550 Loft Down	-15°C	Side Zip	34 x 23
BOGONG	1.60 kg	Box Wall	900 g	550 Loft Down	-15°C	Full Zip	34 x 23
SNOWLORD	2.00 kg	Slant Wall	1100 g	550 Loft Down	-25°C	Side Zip	37 x 27

All bags fit people to 190 cm (6ft 3in) tall, bags to fit people 205 cm (6ft 9in) are available in most models

* Temperature Ratings are a soft measurement — they represent an average expected performance level for a standard person although individuals will differ by up to + 10°C. Paddymade reserves the right to alter these specifications without notice



Paddy Pallin

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