

# Helictite

JOURNAL OF AUSTRALASIAN CAVE RESEARCH

## CAVE HISTORY



Fish River Cave (former name for Jenolan Caves)  
Engraving from 'Australian Pictures', 1886.

# HELICTITE

Journal of Australasian Cave Research

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Helictite was founded by Edward A. Lane and Aola M. Richards in 1962.

This Journal was ( and is ) intended to be wide ranging in scope from the scientific study of caves and their contents, to the history of caves and cave areas and the technical aspects of cave study and exploration. The territory covered is Australasia in the truest sense — Australia, New Zealand, the near Pacific Islands, New Guinea and surrounding areas, Indonesia and Borneo.

In 1974 the Speleological Research Council Limited agreed to support the Journal with financial assistance and in 1976 took over full responsibility for its production.

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- a colouring book for children.

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- the report of the 1973 Niugini Speleological Research Expedition to the Muller Range.

A BIBLIOGRAPHY OF THE JENOLAN CAVES. PART ONE: SPELEOLOGICAL LITERATURE.

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THE CAVES OF JENOLAN, 2: THE NORTHERN LIMESTONE. B.R. Welch (ed) 1976.



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(by arrangement with Jenolan Caves Historical and Preservation Society, Helictite is publishing the proceedings of the first ever Australian Caves History Seminar, held at Jenolan Caves on 10th November, 1985. These papers are not subject to the normal Helictite refereeing process.)

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# Proceedings of the First Australian Cave History Seminar

## SEMINAR TIMETABLE

Sunday 10th November, 1985

- 09.00 Official opening by Paul Crombie, Esq., General Manager, Tourism Commission of New South Wales.
- 09.30 Dr. Trevor Shaw - The History of Cave Studies.
- 10.15 John Dunkley - Jenolan Caves, Heritage and History
- 10.45 Morning Tea
- 11.00 Mike Augee - Paleontological Studies at Wellington Caves, NSW
- 11.30 Gary Bilton - Early History of Yarrangobilly Caves
- 12.00 LUNCH
- 13.30 Mike Chalker - The History of Wombeyan Caves 1828-1985
- 14.00 Adrian Davey - Themes in the Prehistory of the Nullarbor Caves
- 14.30 Ben Nurse - Louis Guymer, Bungonia Caves first Guide
- 15.00 Afternoon Tea
- 15.15 Elery Hamilton-Smith - The Historical Contruction of Naracoorte Caves
- 15.45 Warren Targett - The Musical History of Jenolan Caves
- 16.15 Mike Treharne - An Introduction to Abercrombie Caves Resort



## **Jenolan Caves Historical and Preservation Society**

The Jenolan Caves Historical and Preservation Society was formed in July 1972 with the principal objects of encouraging the study ands documentation of the Jenolan Caves and district, and the collection and preservation of objects and records relating thereto.

Membership of the Society is open to all. The Society holds quarterly meetings at Jenolan Caves, at which speakers address members and historical exhibits are displayed. Membership details are available from:

The Membership Secretary  
Jenolan Caves Historical & Preservation Society,  
c/. Post Office,  
Jenolan Caves, NSW 2786

## THE HISTORY OF CAVE STUDIES

Trevor R. Shaw

### INTRODUCTION

The purpose of this paper is to set the overall scene for those that follow. Its aim is to provide a context for the ones dealing specifically with cave work in Australia. It examines the ways in which cave studies have developed elsewhere in the world, in different circumstances and under different constraints.

There is not space here to consider the growth of ideas on speleogenesis, karst hydrology, the formation of speleothems, and the more 'scientific' aspects of the subject (Shaw, 1979). Discussion is therefore limited to progress in cave exploration and recording. Also, because of its impact on the serious study of caves, the growth of the general public's awareness of caves is touched upon.

Interest in caves and the amount known about them has increased like so many things at an increasing rate, largely because after a certain stage existing knowledge aided subsequent work. For many centuries though, indeed for most of recorded history, this use of previous knowledge did not occur and explorations if they took place at all, were sporadic.

It is convenient to divide cave history into four periods:

- |  |                          |
|--|--------------------------|
| (a) the prehistory of cave exploration               | : to c.1000 B.C.         |
| (b) isolated explorations                            | : c.1000 B.C. - c.1650 A |
| (c) explorations making use of published information | : c.1650 - 1878          |
| (d) explorations by cave societies                   | : 1879 to date.          |

Significant happenings in periods (b), (c) and (d) are indicated in Figures 1 and 2, which also show contemporary events of importance, either relevant (such as the foundation of scientific societies), or non-relevant but provided to link the time scale with wider history and culture.

### VERY EARLY CAVE VISITS

There were occasions on which early man penetrated deep inside caves, in addition to sometimes living in their entrances for shelter.

At several places in Australia, aboriginals used to mine flint for tools. The only one of the sites to have been accurately dated so far is Koonalda Cave (Nullarbor) where there was human activity from roughly 22 000 to 15 000 years ago, up to 130m from the entrance (Wright, 1985).

In European caves Franco-Cantabrian wall paintings and engravings were being created mainly between 20 000 and 10 000 B.P. (Ucko and Resenfeld, 1967) and were sometimes as far as 900m inside the caves, though prehistoric entrances now lost may have made this distance a little less.

Then about 4000 B.P. American Indians, using cane and weed stalk torches, used to penetrate up to 3km in Salt Cave and Mammoth Cave (Kentucky) to extract gypsum and mirabilite for medicinal use or as a base for paint (Watson, 1974).

In all these eras of cave use there were repeated visits deep underground, with exploration to locate the most suitable spots for exploitation. The visits were not recorded in writing so not only do they form the prehistory of cave exploration by definition, but they can have had no influence at all on subsequent exploration until modern times.

### EXPLORATIONS BEFORE 1650

Once recorded history began, a few - no doubt very few - of the cave explorations that took place were recorded and hence are known today. That does not mean that they were widely known before modern research retrieved them, and there is no indication that

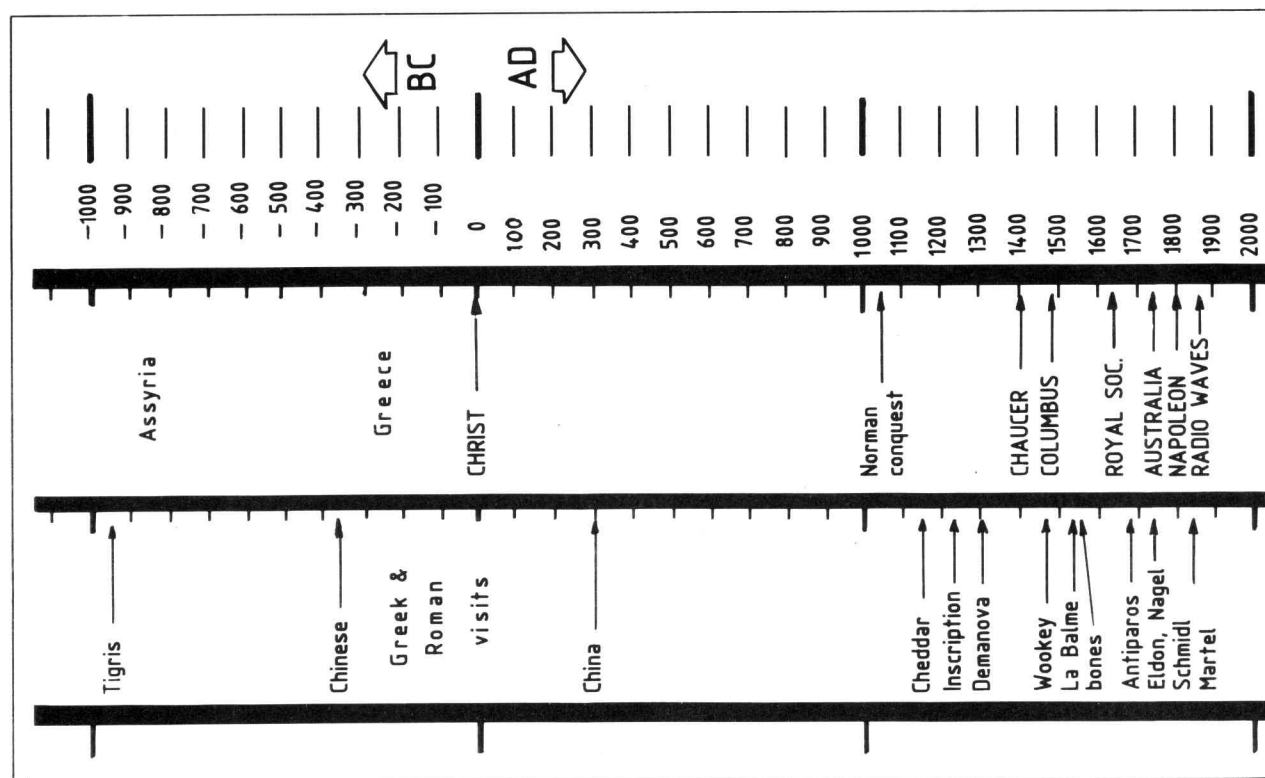


Figure 1. Some important cave events in the last 3000 years, in the context of world history.

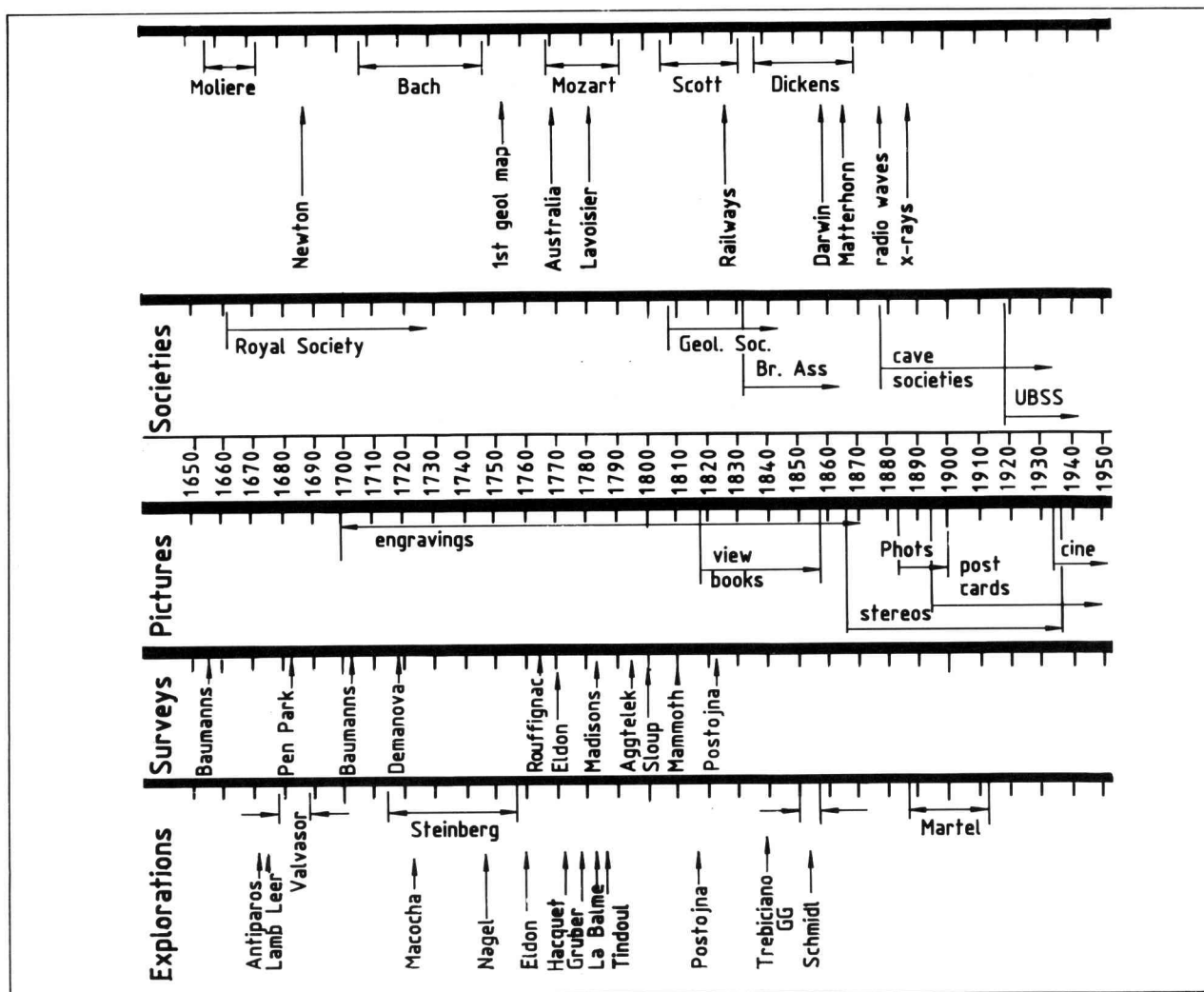


Figure 2. Some landmarks in cave exploration since 1650, in relation to scientific societies, cave pictures, and general history.



any of them influenced the others. They could be said to form the proto-history of the subject.

A few of the more important visits of this period are shown in the left-hand column of Fig. 1 and are mentioned below.

In 853 (or 852) BC the Assyrian king, Shalmaneser III, celebrated a successful battle by cleansing his weapons in the sacred water of the Tigris River resurgence in Turkey and had his men explore three caves there. This was recorded in inscriptions in the caves, and on a black obelisk and a carved stone bull at Nimrud. The events are also shown pictorially on the engraved bronze bands from the king's palace gates at Balawat, now in the British Museum (Shaw, 1976). These thus provide both the earliest written record and the earliest pictorial record of any cave visit.

Between the 4th century B.C. and 300 A.D. the Chinese explored caves, attributing mystical or magical properties to the stalagmites. They also used crushed stalactite medicinally to treat diseases caused by the calcium deficiency (Ko Hung, 1946; Needham, 1959).

The ancient Greeks, too, were well aware of the existence of speleothems and described a few caves (Aristotle, Strabo). Roman authors (Pliny, Seneca, Pausanias) wrote about them in a little more detail.

In Britain in the 12th century 'Cheddar Hole' assumed sufficient importance to be mentioned as one of the four 'Wonders of Britain' in many manuscripts. The earliest account of it was written about 1135 by Henry of Huntingdon:

"Chederole, where there is a cavern which many persons have entered, and have traversed a great distance under ground, crossing subterranean streams, without finding any end of the cavern."

There is considerable doubt, though, whether this really was a now-lost cave at Cheddar, or the open Cheddar Gorge (the whole village was known as Chederol in the 12th and 13th centuries), or whether the description had become confused with that of Wookey Hole, 9km away (Shaw, 1972).

Some of the later 'early' records can be treated more briefly. The earliest dated piece of cave graffiti is in inscription, '1213 C M' in Postojnska jama in Yugoslavia (Hohenwart, 1830-32). A Latin document of 1299 mentions a visit to the Czech caves at Demanova (Huscava, 1959). The English cave, Wookey Hole, was described in some detail in 1478 by William of Worcester. Then in 1490 Sophienhöhle was explored in search of saltpetre (Lubke, 1958). It was in 1516 that King Francois I of France went a little way into the Grotte de la Balme (Isere) and arranged for the underground lake there to be explored in a boat by two condemned criminals who were pardoned as a reward (Martel, 1899).

An entire four page pamphlet published in 1535 is devoted to the German Breitenwanner Höhle. Part of its very lengthy title reads '... they went into a huge hollow mountain ...' The visit was made by Berthold Buchner (1535) and 24 other citizens of Amberg, taking with them lanterns and tinderboxes, pickaxes and food. In describing the cave Buchner gives dimensions and mentions stalactites and also the presence of animal bones, the earliest reference to their being found in caves. The cave is in fact no more than 320m long, but it seems to have been explored fairly thoroughly and, more important, a description of it was published. The pamphlet was, however, too local to have had any wide influence - only one copy is known to exist now.

Another record - this time of a remarkable exploration - that again could have had no influence at the time because it was unpublished, was the 1591 account by Reichard Strein (in Schmidl, 1857) of his exploring the Geldloch in Austria. Modern surveys show that the party reached a point 860m from the entrance, having climbed a vertical rock wall some 700m inside the cave.

#### EXPLORATION 1650 - 1878

In the last 300 years the pace of exploration increased and the number of events deserving mention here increases too. So the scale of Figure 1 becomes inadequate and the period is shown, expanded somewhat, in Figure 2. Again relevant occurrences and non-relevant time markers are noted.

It has been during these last 300 years or so that cave exploration and cave studies really got going. Not only was the population larger, and travelling a little less difficult, more people were more literate. In 1665 the Royal Society first published its Philosophical Transactions, and national societies arose in other major countries at about the same time. Thus findings could be and were recorded accessibly and used by those who came after. The subject began, gradually and patchily, to become self-sustaining. This process accelerated in the 19th century with the creation of regional societies, and then from 1879 onwards with specialist cave societies.

Some of the events of this period 1650 to 1850 are best recorded here in note form:

- 1673 The Marquis de Nointel visited the stalacite cave in the Greek Island of Antiparos. The lengthy published description (Kircher, 1678) caught the imagination and versions reprinted over the next two centuries made the cave as well known as Mammoth Cave (Kentucky), Postojna, and Jenolan subsequently became.
- c.1676 John Beaumont descended the 21 1/2m pitch in Lamb Leer (Mendip, England) and accounts of the cave were published by the Royal Society (Beaumont, 1676; 1681).
- 1678-89 J.W. Valvasor, the distinguished Slovene topographer, explored several of the caves in the classic area round Postojna, publishing both in the Royal Society's Philosophical Transactions (Valvasor, 1687) and in his four volume Die Ehre dess Hertzogthums Crain... (Valvasor, 1689). This publication was particularly important because within a generation other people there were building on his work.
- 1682 A survey of Pen Park Hole, published by the Royal Society (Southwell, 1683), was the first of a natural cave ever to be published. Von Alvensleben's 1656 manuscript plan of Baumannshohle was wildly inaccurate and was never printed.
- 1702 A tolerably accurate survey of Baumannshohle was published in Germany (Hardt, 1702).
- 1723 The 138m entrance shaft of the Macocha, now in Czechoslovakia, was descended by a priest, Lazarus Schopper. 60m of this was a vertical free drop (Absolon, 1970; Burkhardt et al., 1973).
- 1714-58 Steinberg's studies in Slovenia culminated in a 235 page book on karst water and caves (Steinberg, 1758). He continued where Valvasor had left off, utilizing his work and consciously building on it both in exploration and in postulated explanations for the behaviour of the intermittent karst lake of Cerknica.
- 1747-48 J.A. Nagel was sent by the Emperor Franz I on journeys specially to explore caves in Austria, Czechoslovakia, and Slovenia. His findings were recorded in some 300 pages of manuscript, illustrated with water colours and deposited in the Austrian Royal Library (Nagel, 1747; 1748). By now it is a classic document, with extracts widely reprinted, but it can have had little or no immediate impact on future exploration.
- 1760 The 60m deep shaft of Eldon Hole (Derbyshire, England) was described with plans and sections in the Royal Society publication (Lloyd, 1772).
- 1765 The French mining engineer, Nicholas Bremondier, made a detailed and accurate survey of the Rouffignac cave (published in Allou et al. 1822), the first cave plan to be made to professional standards.
- 1774 The French doctor Hacquet (1778 -79), resident in Slovenia, carried on from the work of Valvasor and Steinberg and is noted particularly for his discoveries on the underground river in Postojnska jama.
- 1781 Tobias Gruber (1781) devoted an entire book to the hydrology and caves of the Solvenian karst, postulating a kind of fluctuating water table in the limestone.
- 1782 The underground lake of La Balme (Isere), already mentioned, was explored by P. Bourrit (1907), swimming its full length of 126m.
- 1794 2.1km of the Hungarian cave Aggtelek was surveyed (Bendefy, 1962), so long caves were getting longer.
- 1818 A simple discovery in Postojnska jama led to its immediate extension from 1/2km to 2 1/2km in length (Schafenrath, 1830). By the end of the 19th century, 10km of passage was to be known there.
- 1841 In attempts to provide a water supply for Trieste, the underground river Timavo was reached in the Grotta di Trebiciano at a depth of 329m (Kandler, 1851). This remained the deepest cave in the world until 1909.

Worthy of a paragraph to himself is Adolf Schmidl (1802-1863); the first modern speleologist (Shaw, 1978). If Martel was the Father of Speleology, then Schmidl was its grandfather. In the years 1850 to 1856 he worked in the caves of Austria, Romania, Czechoslovakia, and Slovenia, making the first systematic coverage of any cave region. With his colleague Ivan Rudolf he surveyed 19.1km underground. He published several dozen papers and three books on caves. He was interested in more than just exploring and recording caves. His book, Die Grotten und Hohlen von Adelsberg, Lueg, Planina und Laas (Schmidl, 1854) included sections on cave fauna and underground meteorology. As perhaps the first speleohistorian he printed Strein's 1592 manuscript account of the Geldloch exploration (Schmidl, 1857).

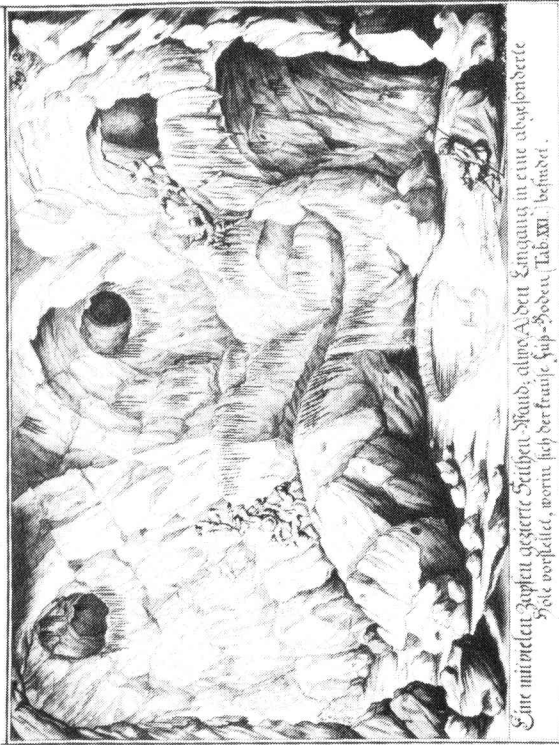


Plate 2. Exploring in the Sloup Cave, Czechoslovakia, in 1748 (reproduced, with permission, from MS N.7854 in the Austrian National Library, Vienna).

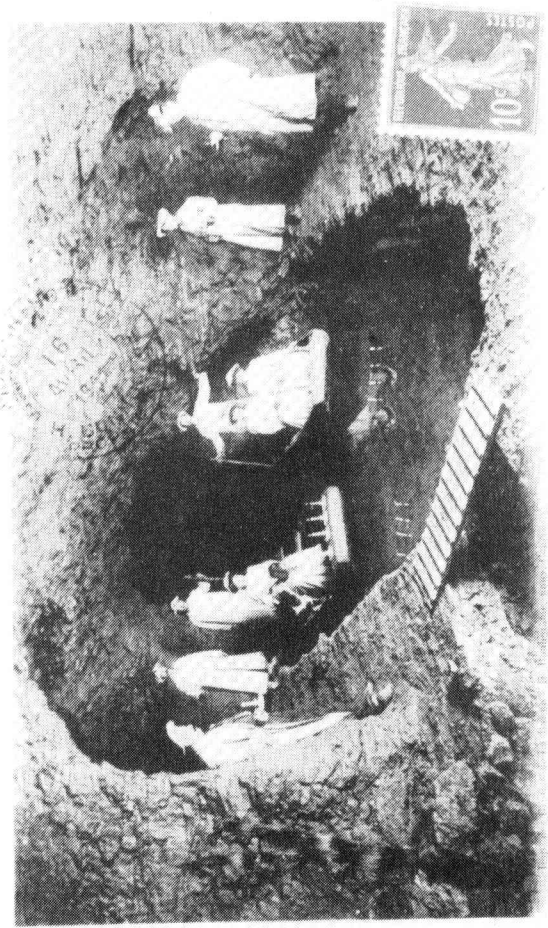


Plate 4. Tourists in the Grotte de la Balme, France, about 1910; from a postcard.

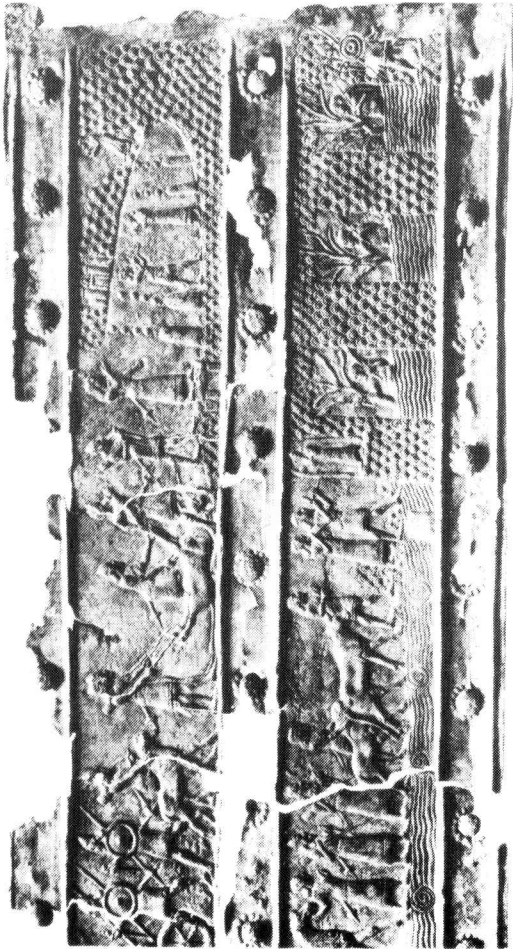


Plate 1. A visit to caves near the source of the Tigris River (Turkey) about 852 BC, showing stalagmites and an underground river; from a bronze panel.



Plate 3. In Mammoth Cave, Kentucky; a stereo photograph by Charles Waldack, 1886.



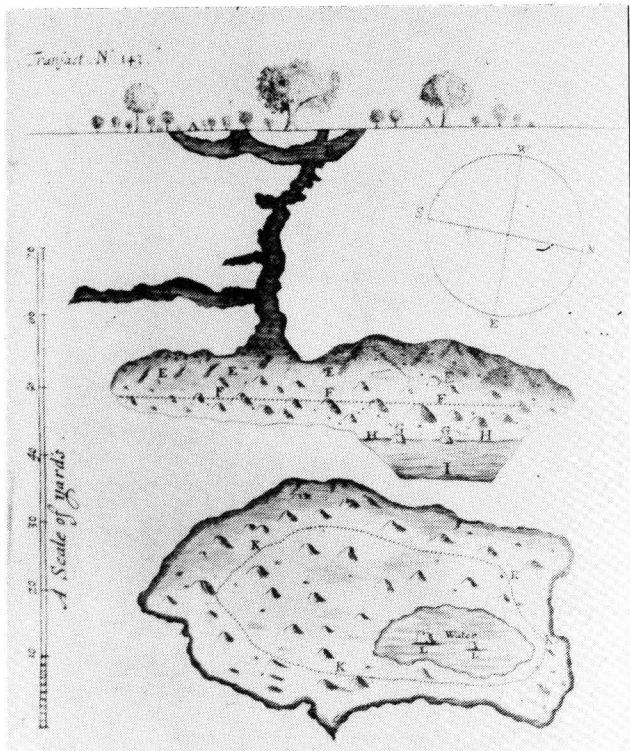


Plate 5. Plan and Section of Pen Park Hole (Bristol, England) made in 1862.



Plate 6. Cave guides at Poole's Hole, England, in 1797; from an engraving.



Plate 7. The first descent of the Gouffre de Padirac, by Martel, in 1889; from a postcard.

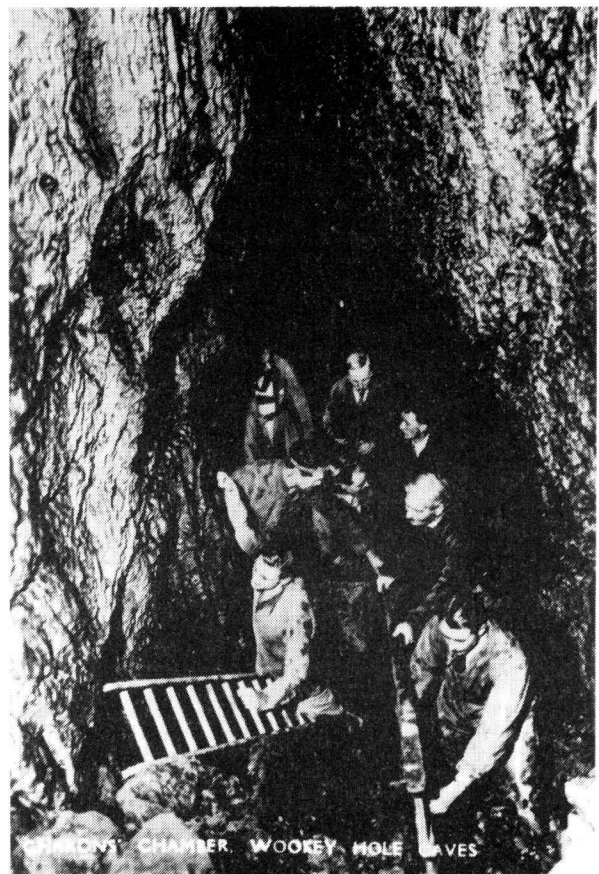


Plate 8. Exploring in Wookey Hole, England, about 1934; from a postcard.



FROM 1879

In the last 100 odd years there are not only too many important explorations for even a selection to be recorded here; they are also individually less significant in the history of speleology. This is because the pattern of investigation has remained much the same - read up, predict and plan, explore, record, publish; read up, ... .

The rate of achievement has increased for all kinds of reasons: a larger population, a more literate population, more leisure time, wider awareness of caves among the public, easier transportation, better equipment, and more accessible publication for cave material. Many of these aspects are not peculiar to cave work, but the last point deserves more attention.

Already, as we have seen, national societies such as the Royal Society, and then in the 19th century regional scientific societies, provided publications in which cave work could be printed, and whence it could be retrieved. Then in 1879 was founded the first of the societies dedicated specially to cave studies. At about the same time the annual reports of government departments, so important in Australia and parts of U.S.A., began sometimes to report cave research.

It was in 1879 that the Verein fur Hohlenkunde was founded in Vienna, publishing in the next year its *Literatur-Anzeiger*. In 1885 the still running *Atti e Memorie* of the *Societa degli Alpenisti Triestini* (soon to become the *Societa Alpina delle Giulie*) started publication, covering much of the classic karst area around Trieste and in Slovenia. The magazine *II Tourista* was published in Trieste from 1894 to 1912, and printed much important cave material about the same region. In England the Yorkshire Ramblers' Club had been formed in 1892 and its *Journal*, started in 1899, has always included cave reports. Then in 1895 the first issue of the very influential *Spelunca*, now in its 5th series, was published by the *Societe de Speleologie*. Among other cave periodicals that were both early and important are *Mondo Sotteraneo* (1904 and still going), *Mitteilungen fur Hohlenkunde* (1908-1938), and the *Proceedings of the University of Bristol Speleological Society* (1919 to date).

There have been many distinguished speleologists, without whom the course of the subject would not have been the same. One thinks of Absolon, Baker, Bock, Beogan, Hovey, Kraus, Kyrle, Putick, Schmidl, and Trickett. But if any one person has to be selected as having most influenced and accelerated the course of cave studies, it must be Martel.

Martel was an active cave explorer for 26 years, from 1888 to 1913; he wrote 20 books and over 780 papers; he founded the *Societe de Speleologie* in 1895; he explored caves in 18 countries; many of his papers were published abroad and in languages other than French; and he frequently lectured abroad. It was he more than anyone who made speleology an international subject.

MAKING CAVES KNOWN

Making facts about caves available for those who would later need them has been the theme of much of this paper. Making caves more generally known to the public at large is also, perhaps surprisingly, also relevant to cave studies. The public is, after all, the pool from which the cave student emerges. Today the route may be from television or coffee-table book to caving club. More than a hundred years ago the equivalent might have been from engravings or photographs to a regional scientific society. There were a few tourist caves and travel was not easy.

Travel books sometimes included cave descriptions and the general appeal of the Antiparos cave from just such an account has already been mentioned. Often, however, these books would be read only by those already interested. More effective in spreading awareness of caves were pictures - a continuous succession, of which the main elements were:

engravings	flourished	1700 - 1870s
photographs (especially		
stereo views)	"	1866 - 1930s
postcards	"	1890 to date

Books consisting largely or entirely of cave engravings (e.g. Westall, 1818; Alleweireldt, 1829; Hohenwart, 1830-32) appeared only in the 19th century and were the equivalent of modern coffee-table books. Occasionally luxurious albums of mounted photographic prints, with printed title pages, were produced for a similar purpose (e.g. Sesser, 1886; Jenolan Caves, 1887).

It is fortunate indeed that these pictures were issued, for they provide much information for the modern cave historian.

A REGIONAL PATTERN IN CAVE STUDIES?

A large part of the fairly early (17th to 19th century) work on caves took place in central Europe and particularly in and around Slovenia in northern Yugoslavia. It is interesting to speculate whether there was a reason for this or whether it was just chance.

Whenever active work did start it was regional, at least at first. One or more factors usually influenced or even initiated it:

(a) the presence of caves as a major and obvious feature of the landscape;

(b) economic importance:

e.g. potential source of water supply,  
associated with flooding,  
tourist potential;

(c) personal influence and enthusiasm of one or more individuals;

(d) a tradition of local cave exploring; previous publications that not only provided data, but made cave work seem a normal thing to do.

All these factors are present in Yugoslavia, and some of them exist, in various combinations, in other areas where cave studies developed early.

AUSTRALIA

Australia is peculiar (in the sense of being speleo-historically different to the rest of the world) in several ways.

Some of the general factors already suggested as influencing the onset of regional work are clearly applicable. What is different to much of the world is that:

(a) Much of Australia was still being actively explored in the early 19th century and some areas were not settled and stable until later.

(b) Some Australian caves were the first in the world to be protected as reserves (Wombeyan, 1865; Jenolan, 1866; compared with the first U.A. National Park at Yellowstone in 1872).

(c) Some of the state government departments took an active interest in caves. Thus the first cave 'keeper' was appointed in 1867, to explore and develop the caves at Jenolan as well as show them to the public. In New South Wales the results of this work were published in the Department of Mines Annual Reports year after year from 1874. These reports included accurate surveys, most of them done by a professional surveyor employed by the government. Only in a few states of U.S.A. (e.g. Indiana) and in the case of Congo Caves in South Africa (Corstorphine, 1897) were cave reports and surveys elsewhere published in this way.

(d) Photography was widely used in Australian caves from the 1880s onwards. Large photographic prints and especially stereo views were sold. This was normal also in the major tourist caves of U.S.A., but in Europe it was most uncommon.

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SPELEAN HISTORY IN AUSTRALIA ; A PRELIMINARY REVIEW

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INTRODUCTION

The first-ever seminar on spelean history in this country constitutes something of a milestone, and so this paper is written as a state-of-the-art review of what has happened and is happening in Australian speleo-history. Hopefully, others will be able to add important data which are at present unknown to me. I would also hope that the near future will see enough further study to make this paper out-of-date anyway.

OVERVIEW

Firstly, a brief overview to establish some sort of framework. There are a number of levels of historical study:

(a) Some people have identified persons who are important first-hand sources, and recorded their experience.

(b) Others have located other kinds of source material - contemporary accounts, old photographs, postcards, guide-books, and the like - and collected these together, hopefully in a way which will ensure their safe-keeping, made them more accessible by re-printing, or compiled listings and indices.

(c) Others have compiled narratives of events, which simply attempt to record the sequence of events which have occurred. These include both histories of cave areas and other local histories which provide a valuable context for cave history. Then still others have endeavoured to do more by trying to explain the events, place them in a broader context, or resolve apparent contradictions. Although this is only one category here, these histories cover a wide spectrum, from inadequately evidenced narrative to careful and painstaking detection.

(d) Finally, one might develop a critical perspective on the meaning of the history. This approach is still all too rare in local history. However, it is also true of all history - the 'new historiography' is still not fully accepted, and so most history remains a matter of dispute over the 'accuracy' of chronicling.

Rather than simply listing what has been done on an area-by-area basis, I will use these categories in order to demonstrate the state-of-the-art more adequately, but for convenience, will highlight the names of cave areas throughout.

RECORDING OF PERSONAL EXPERIENCE

This is all too rare. We have lost many opportunities in recent years as early cave manager, owners and explorers die. Probably the most notable examples of this genre are Middleton's (1972, 1885a,b,c) interviews with A.H. ('Tant') Bradley and Leo Hoad, pioneers of Yarrangobilly and Jenolan. Not only were these tape-recorded, but Greg has painstakingly transcribed them for others to study. Bradley's (1972) own writing is a vital extra part of this record. Middleton was also responsible for the publication of contemporary accounts by Welch (1972) and Glanfield (1973a,b,c) of cave exploration in the 1930s and 40s at Colong, Jenolan and Tuglow - one of the least documented periods of Australian speleology.

I was fortunate enough in looking at the history of Naracoorte to talk with the late Agnes Needham (daughter of William Reddan, the great explorer, developer and manager of Naracoorte Caves), and the late George Burford, who was one of Reddan's staff and actually worked on the development of the caves. The notes of both of these interviews were lodged with the records of a speleological society, from which resting place they have never been able to be exhumed - and there is a lesson in that. Some I could recall and this has been used in recording of the history (in press). Then I was able to talk with Mr. & Mrs. Ray Leitch, son and daughter-in-law of the late Bob Leitch, who succeeded Reddan. Their information has been fully incorporated in the published record.

An important series of papers was published by the Jenolan Caves Historical and Preservation Society. These include Newbould (1974) on steam cleaning, Newbould (1975) on the discovery of the Barralong Cave and parts of Driscoll (1977) on the Binoomea Cut.

Doubtless, there are many other examples, but I know of few, and still fewer have been put into a form which might be shared with others. For instance, Ian Lewis has spent a considerable time talking with Captain J. Maitland Thompson of Nullarbor fame. There is also a tape-recorded interview with the late Frank Moon, pioneer explorer of the Buchan Caves. Lane (1966) notes, but does not report upon, a number of very important interviews.

But others still need be recorded. The experiences of Captain (now Professor) S.W. Carey in training commandos in the Mt. Etna Caves during World War II - one of the truly bizarre bits of cave history in this country - is an important example. Then there are the beginnings of organised speleology in this country; and a few people who were active in an un-organised way during the 1930's and 1940's. The chance should not be lost.

#### OTHER SOURCE MATERIALS

The most energetic collector and re-printer of source material has been Ross Ellis, through the Journal of the Sydney Speleological Society. For some years now, Ross has been locating and reproducing old newspaper accounts, sections of books, illustrations and other early materials on Australian caves. His various efforts are far too numerous to list here, and in fact are so numerous that they now demand indexing in order to find them!

Some of these are not mere reproductions of published materials, but include details of unique items, such as Samuel Cook's personal copy of The Railway Guide of New South Wales which was described in detail recently by Middleton & Ellis (1985).

Other examples of re-printing include the material on Ellis Rowan in Towerkarst of the Chillagoe Caving Club (Anon 1978) and the source papers on Bungonia in Ellis et al (1972).

There are, of course, a number of caving bibliophiles or collectors of other useful source material. Names such as Lane, Nurse, Cox, Ellis and myself all come readily to mind. Doubtless there are many others. There are probably some important materials in the records of many speleological societies, and the Jenolan Caves Historical and Preservation Society certainly has a significant collection of material.

Perhaps the major source of depression, despair or whatever among historians is realising the value of material which has been destroyed or lost to any sight. As one simple example, William Reddan wrote a daily journal of all that happened at Naracoorte from his appointment in 1886 till his retirement in 1919. He left it at the caves on retirement because he believed that it should be carried on as a permanent record (A. Needham, pers. comm.) but it has never been traced. In a similar way, the visitor's book maintained at Jenolan by Jeremiah Wilson no longer exists. What this leads to is the need to firstly identify and catalogue what exists (without necessarily making that catalogue widely available) and to try to ensure that collections are not destroyed or dispersed on the death of owners, but that their permanent safe-keeping is ensured as far as is possible.

I should register here a concern that many speleological societies seem to show little regard to the value of historical source materials, and even worse, that the Jenolan Caves Historical and Preservation Society does not even have a proper register of its holding (although this is now in process). All this concerns me much more than the fact that an immense store of material is hidden away in places like State Archives and State Historical Libraries (e.g. Mitchell, LaTrobe and Battye). Although while hidden, it is not really adding to our knowledge, at least it is likely to be in safekeeping.

There have been few bibliographies or other source listings compiled. At least the reference lists of some of the histories listed below provide some basis. Other than that, we have Australian Speleo Abstracts for the 1970-75 period, with 1976-79 currently in preparation and others to follow. Then the U.K. Current Titles in Speleology is useful, partly because it has a subject heading covering history. The bibliographic indices of the Australian Institute for Aboriginal Studies provide a valuable point of access to the materials on Aboriginal history and Australian caves.

Dunkley (1976) has published one volume of his bibliographic work on Jenolan, with at least one more in preparation. Spate (1985) has published an index to Helictite, and has also prepared a comprehensive bibliography of the Coolman area. Middleton (in press) has indexed cave references in NSW Government Publications from 1870 to 1919 and Osborne (in prep.) has an index of scientific work on NSW caves.

Kiernan (in prep.) has compiled a Tasmanian Karst Bibliography and White (in press) has one for Victoria. Spate & Gillieson (1984) have listed Jennings' works. Davey and Lewis (1978) have published a first listing for the Nullarbor, which has now been considerably extended by Davey (1986). Davey, Helman and Churchill (1986) have also recently prepared an extensive listing on the Gambier embayment area of Victoria and South Australia.

Turning to visual sources, Ellis, Hamilton-Smith and Shaw are hard at work on a catalogue of postcards (see also Hamilton-Smith, 1985). Ellis (in prep.) is planning to deal with stereograph pictures, while Shaw maintains an index of prints and paintings. A number of those listed above as bibliophiles also collect 19th century photographic prints, which are an invaluable source of the earliest data. Probably the most important collection is that of Lane (1966, 1971).

At least modern technology is coming to our aid. Several people who are now compiling systematic bibliographies or catalogues are doing so much more easily than was the case prior to readily available computer power.

#### NARRATIVE HISTORIES

Several overviews of Australian caves or cave exploration have been produced. Shaw (1979, this meeting) has placed the discovery, investigation and management of Australian caves into an international context. Lane (1975) and Hamilton-Smith (1980 & in press) have both produced brief reviews of the Australian scene.

Like all Australian history, cave history tends to have acted as if it all started in 1788. The history of the relationship between Aboriginal Australians and caves has been segregated as the province of archaeology, and one must turn to that literature for detailed studies. However, probably the best historical review of this field is that by Jennings (1979), although both Shaw and Davey (this volume) have pointed to the importance of the wider time context.

Much of the recorded history of cave areas is contained in documents written for other purposes - area reviews, tourist guidebooks, management plans or conservation documents. These are often based upon superficial and inadequately researched data, and may even contradict the other relevant sources which might have been consulted. For instance, it is widely believed that the late Rev. John Flynn, founder of the Flying Doctor Service, assisted Frank Moon in the exploration of the Fairy Cave at Buchan, and this has been reported in various documents. However, the currently definitive biography of Flynn (McPheat, 1963) gives evidence that Flynn left Buchan shortly prior to the discovery of this cave, even though he had visited and photographed many others in the area.

Studies of this kind include:

Abercrombie	Bates, 1982
Bungonia	Whaite, 1972; Nurse 1972
Jenolan	Dunlop, 1952 & later editions; Dunkley, in prep.
Colong	Mills, in prep.
Timor	James et al, 1976
Wombeyan	Nurse, 1982
Yarrangobilly	N.S.W. : National Parks & Wildlife Service, 1970
Chillagoe	Wilson, 1977; Pearson, 1983
Mt. Etna	Caffyn, 1970
Olsen's Caves	Olsen, 1964, 1978
Glenlyon	Robinson, 1978
Naracoorte	Lewis, 1977; S.A. : National Parks & Wildlife Service, in press; Hamilton-Smith, this seminar
Tantanoola	S.A. : National Parks & Wildlife Service, 1983
Nullarbor	Dunkley, 1967
Hastings	Skinner, n.d.
Mole Creek	Skinner, 1978
Yallingup	Aust. Speleological Federation, 1978
South-West Region	Anon., n.d.

The next group of histories which demand consideration here, but which will not be listed comprehensively, are the local histories which provide some sort of context for cave history. Examples which come to mind include Murdoch & Parker (1963), Bonney et al (1979), Stanbury & Bushell (1985), and Kennedy (1978). Doubtless hundreds of others exist which would be of assistance.

A special case here are the summaries prepared to give some context to study of a particular area, such as those by Tom Robinson (1976, 1983) and those works which are essentially cave-related such as Jim Smith's (1984) wonderful book on the Six-foot Track to Jenolan.

Then there are the biographies or other studies of those concerned in one way or another with caves and cave exploration. Hunt's (1974) paper on Robert Broom, the Flynn biography (McPheat 1963), Spate & Gillieson's (1984) obituary of Jennings, Kay's (1980 & 1985) work on the Blue Mountains (and Jenolan) photographer Harry Phillips are all examples of these. Middleton is at work on the story of Oliver Trickett; Ellis, Hamilton-Smith and Shaw are including notes and references on a large number of photographers and artists in their catalogue of postcards; and Hamilton-Smith has a review of the photographic work of A.H. Bradley in preparation.

Finally in this section, we come to the systematic free-standing studies. Perhaps one of the most notable is Harvard's (1934) classic study of Jenolan Caves. This is a good example of the explanatory tradition in history, in which the author endeavours to place events in context, and to demonstrate ideas of cause and effect. A similar pattern is followed by Lane & Richards (1963) in their study of Wellington Caves, in which they relate the history of Wellington to the story of palaeontology and palaeontologists. Further work on Jenolan includes Dunlop (1967), Rawlingson (1974), and various short notes by Lane (e.g. 1966, 1971).

Kiernan (1974) has published on the history of the relationship between man and caves in Tasmania, and in particular, the history of state responsibility (or irresponsibility) for preservation of caves. This is one of the only papers which explores the interaction of caves and white settlement processes; similar studies might very usefully be carried out elsewhere.

Other studies are scattered through the caving literature, and in particular, it is worth noting the many brief notes in the Western Caver (W.A. Speleological Group) by Shoosmith (1973, 1975) and others, each of which deal with an aspect of cave history in that state. Another fascinating piece of research, which deserves publication, is Ian Elliot's (1977) investigation of the discovery of Yanchep Caves. Elliot found himself doubting the 'history' related by guides at Yanchep and set himself the task of tracking down the real story.

#### THE CRITICAL MODE

Traditional history believes that there is an absolute truth, which exists independently of human observation, and that the task of the historian is to ensure the discovery of that truth. This position has increasingly come under question, and many today would argue that truth cannot exist independently of human perception and interpretation, that although one might well dispute the degree of validity attained by competing interpretations, it is even more important to look at the dynamic interaction between reality or truth on the one hand and the interpretation on the other. Not only does interpretation alter the way in which we understand the past, but it also effects our perception of the present. To quote the philosopher Debray (1967), "We are never completely contemporaneous with our present. History advances in disguise; it appears on stage wearing the mask of the preceding scene, and we tend to lose the meaning of the play."

As already noted, this more critical position is not accepted by many historians. However, it is becoming increasingly important in historical practice, and something of it is implied in Kiernan's (1974) work while Dunkley (in prep.) and another paper by myself (this meeting) have both attempted a more critical and interpretative mode. It is whole-heartedly adopted by some of the essays in Stanbury and Bushell (1985); a particularly fine example is the Donaldsons' (1985) book, *Seeing the First Australians*; and an Australian collection which further develops the critical idea and includes a number of examples is Vol. 16 of the Melbourne Historical Journal - *The Politics of History*. These works are well worth attention from the viewpoint of historical method.

#### THE FUTURE

This paper has already noted a number of suggestions, and these are repeated here for convenience:

(a) that every attempt must be made to record first-hand experiences before it is too late

(b) that any source materials must be adequately safeguarded for the future, particularly unique copies, original documents, and specialised collections

(c) that the indexing of source material is in itself valuable and should be extended as much as possible

(d) in particular, that the Jenolan Caves Historical and Preservation Society, as the only historical society in Australia with a speleological focus, should as a matter of urgency establish a proper register of its own holdings and ensure their safe-keeping. Since writing this in draft it has come to my notice that this is being done, but I leave the point in order to emphasize the importance of this endeavour.

Beyond this, I would like to draw attention to the opportunity for fascinating studies in a considerable number of areas. However, I suspect the most useful studies will be those which pursue a theme rather than merely document a narrative of one geographical area. There are all sorts of fascinating themes - the role of government in various states, the transmission of ideas from one cave area to another during the 19th century, the guano-mining industries of the Flinders Ranges, commando training at Mt. Etna (noted above), etc.



Then there is the possibility of further work examining the relationship between caves and our perception of them. One aspect of this would be a thorough analysis of the scientific study of Australian caves: this is probably one of the more urgent tasks as a stocktaking kind of exercise. Alternatively, one might well look at why caves were so important to Australians at the turn of the century. This would open up the kind of questions explored by Pyne (1982) in his history of the Grand Canyon or Runte (1979) in his work on American National Parks. We often forget that in many ways, 19th century Australia led the world in demonstrating an appreciation of certain kinds of natural environment. To understand more about that would help us to perhaps more clearly understand the social and political environment in which we struggle to improve the preservation and management of our caves today.

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ASPECTS OF THE MUSICAL HISTORY OF JENOLAN CAVES

Warren Targett

Abstract

The acoustic quality of caves has always led people to use them for the performance of sacred or secular music. The earliest record of music at Jenolan is that of J.C. Millard, who wrote that his party "camped in the largest cave, sang a few hymns .... and early next morning arose and sang the doxology" (Millard, 1858). However music must have been performed there prior to that since the Bathurst Free Press reported in 1856 that a dancing platform had been erected in the Grand Arch. Trickett (1905) however gave the date of installation of the dance floor as 1869. This was in regular use until the end of the century (Havard, 1936) when the improved amenities of the guest house rendered it redundant. A poster of 1898 gives evidence of 'Smoke Concerts' held in the Grand Arch, with local employees providing the entertainment.

The Cathedral Cave was reputedly consecrated as a place of worship in the 1880s by Bishop Barry, Anglican Primate of the colony. Since then it has been used by various denominations for divine services. This cave was also sometimes used for live broadcasts of 'Radio Sunday School' on radio station 2GB in the 1930s and 1940s. Performers included Albert Boyd, a popular light baritone, and the Lithgow Brass Band.

From about 1910 until the end of the 1940s musical performances were common at Caves House, with resident musicians employed on a permanent basis to play light music during meals and after dinner to provide dance music in the Ballroom. Many entertainments were organized which were attended by both staff and guests. This came to an end in the 1950s, and for 20 years live music became a rarity at Jenolan. Inspection parties visiting the Cathedral Cave had commonly been invited to sing, but in the 1950s this tradition was dropped, and instead a remotely controlled record player was installed in the cavern. The recordings played were generally of a religious character. This equipment, in a state of disrepair, was finally removed in 1979.

In the late 1960s the Smoke Concerts in the Grand Arch were revived, but were abandoned in 1974 after disruption by hooligan elements. However social concerts and dances continued in Caves House. In 1983 the regular engagement of musicians began again, and live music shows are now a regular feature on Saturday nights. Occasional concerts are once more taking place in the Grand Arch. Religious services and Masonic ceremonies have taken place in the caverns. Music is once again a part of the Jenolan experience.

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JENOLAN CAVES - HERITAGE AND HISTORY

John R. Dunkley

My aim today is not to talk about the history of Jenolan Caves as such, but rather to suggest the contribution an understanding of its history can make to the heritage significance of Jenolan, what part it can play in attracting visitors and making their visit worthwhile. There are some implications here for those of you interested in the history of other cave areas.

I would like to start by reading the first few sentences in the official guidebook to Jenolan Caves:

"Jenolan Caves is Australia's show-place and premier tourist resort of its kind. It is a wild, yet easily and pleasantly accessible spot in a forest and mountain reserve, and its limestone cave scenery is the best that can be found in a country richly endowed with caves. . . the caves are visited by many thousands of tourists each year and have a record of steady progress in fame and popularity that can be accounted for only by great merit".

Well, what is it that makes for this great merit? Ask an average member of the public, even an environmentally conscious one, and the reply would most likely emphasize Jenolan's great beauty and magnificence.

BEAUTY AND FAME?

Now, it is indisputably true that Jenolan is a scenic natural resource of the highest quality, and one which for all the tourist publicity has not received the protection it deserves.

It is also true that this beauty has been recognized for a long time. As early as 1859 we find a correspondent of the Bathurst Free Press hoping "that at no very distant date their fame as the greatest national wonder of Australia will be established". This was only 11 years after the first published mention of the caves, in an era not noted for its emphasis on the finer things of life. Then in 1866 John Lucas arranged for the reservation of what were then called the Binda Caves, for the preservation of caves. And, despite his proclivity for knocking off the odd stalactite, we cannot deny that Lucas knew beauty when he saw it. This was 6 years before the world's first national park, and there wasn't much tourist traffic anywhere to make that a justification for a reserve.

This is historically interesting but not altogether an overwhelming justification. As Robin Boyd has pointed out in "The Australian Ugliness", beauty is a questionable concept if its definition and attainment are determined by the cultural values and fashions of any particular age. We need to find more about Jenolan than beauty.

What about fame? We find Jenolan being described in the very first issue of the world's first speleological journal, Speluna, in January 1895. After denigrating the monotonous Australian landscape a French visitor remarked:

"(the Blue Mountains) are possessed for some true geological marvels, which can be counted among the most celebrated in the whole world. These are the Jenolan Caves, stalactite-filled grottos discovered by Mr. James Whalan in 1841 ..."

He went on to rhapsodize about the beauty of the caves. There were hundreds of such descriptions written in the late nineteenth and early twentieth century. Jenolan seemed to be on the itinerary of every world traveller of the era. Even Edouard Martel, usually described as the world's first speleologist, mentions Jenolan in no less than 6 of his works. In 1911, in a paper drawing attention to the need for National Parks in France, he cited Jenolan as an example of what government action could achieve.

All this contradicts the popular belief that our nineteenth century pio-neers were rather rapacious and uncaring for the environment. The fact is that they had a well developed sense of beauty, especially for scenic oases in what seemed to them an interminable ocean of eucalyptus trees.



So, is it that Jenolan Caves are the MOST beautiful or magnificent in New South Wales or Australia? Well, the tourist caves do make up the longest cave system in this state, though not in Australia. As it happens, though, there are longer arches elsewhere in the state, longer straws, larger stalagmites and columns, more profuse helictites. . . If Jenolan is beauty, it must be because people say it is, and I'll come back to that later. For the moment, let's agree that Jenolan Caves ARE beautiful.

#### HISTORY?

A second reason put forward for the great merit of Jenolan Caves is their history. The National Trust has classified several buildings although it had some harsh words to say about some others. The Historical Society has preserved industrial artifacts illustrating earlier methods of showing and lighting the caves. I suppose there's something significant about the fact that these were the first caves in the world to be lit by electricity, and the site of Australia's first hydro-electric power plant.

Still, every place has its history, and there are other attractive caves. We have to look further still to explain the historical and heritage significance of Jenolan.

How many of you have heard of Niagara Falls? . . . . . Can you form a picture of it in your mind? . . . . What about the Grand Canyon? The Three Sisters maybe?

Well, I hate to disillusion you, but Niagara Falls are by no means the highest in the world, nor the widest or largest in volume, though I don't doubt there are plenty of Americans who'll assure you they are. One thing is for sure. Niagara is world famous. So is the Grand Canyon, but it's not the deepest in the world.

The Tourism Commission describes Jenolan Caves as "world renowned"? Because of their size? their beauty? Really, it's for the same reason that Niagara is world renowned. A lot of people said it was, so it was.

The reason Jenolan is world renowned is that the publicity spread by successive governments and successive generations of visitors have made it so. Thus, in a recent survey, Jenolan visitors asked "How did you hear about Jenolan Caves", 68% replied "by word of mouth". Australians who know of none in their own state will almost certainly know of or have visited the caves at Jenolan. There has probably been more written about Jenolan than all our other caves put together; nearly 2,000 books, chapters of books, and articles in magazines, journals and newspapers.

#### SYMBOLIC SIGNIFICANCE?

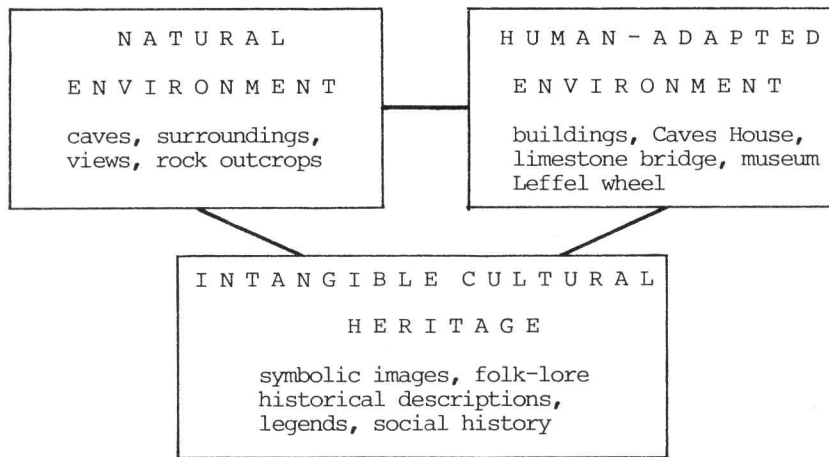
My argument is that the heritage significance of Jenolan is grounded, not only in its natural and cultural heritage, but also in its symbolic importance as a place in the mind of Australians, akin to the Opera House or the Harbour Bridge. It is this idea of the significance of place which has to be emphasized when we talk about the heritage of historical significance of Jenolan. I would argue that Jenolan Caves is one of our few natural attractions recognized overseas; this was even more evident 50 to 100 years ago when this state was trying to establish an independent image overseas.

I would draw an analogy with, say, Ayers Rock. It dominated the mythical and perceptual field of the aborigines who lived there, but it remains a place in the mind of modern Australians who are drawn by its image.

Another analogy can be drawn with the aboriginal attitude to nature generally. an aborigine sees recorded in the surrounding landscape the ancient story of the lives and the deeds of the immortal beings whom he reverses; beings, many of whom he has known in his own experience as his fathers and grandfathers and brothers and as mothers and sisters. The whole countryside is his living, age-old family tree.

In other words, where other Australians have tended to polarize humanity and nature, the aborigine sees all things natural as part human. Mountains and creeks, springs and waterholes and caves are not merely interesting or beautiful scenic features; they are the handiwork of ancestors. We should see Jenolan not merely as scenic beauty but as the accumulation of the McKeown legend, the Wilson personality, the Wiburd years.

So, place is more than just location, more than just a point on a map. People talk of the 'spirit', the 'personality' and the 'sense' of a place. 'Personality' suggests the unique; places, like people, acquire unique signatures in the course of time. A human personality is a fusion of natural disposition and acquired traits. Loosely speaking, it is this 'personality' which makes the place significant, and this is a composite of natural endowment, the human-adapted environment, and all the intangible cultural heritage which goes with it - peoples' images, memories, knowledge and understanding of the place.



In a recent book called *What Time is this Place*, an American architect and environmental planner argues that we have a positive attitude to heritage settings when they heighten our appreciation of the flow of time. The setting should therefore encourage us to think of the social life of the past, rather than history merely being a collection of isolated buildings or dates, facts or ideas. Some of you will have visited so-called "theme parks" like Sovereign Hill at Ballarat or Old Sydney Town. Experience in these places is that heritage environments, even reconstructed ones, are successful in an educational sense only when they involve the visitor in personal questioning of their past, that is, when visitors are mindful of the temporal connection between what they are looking at, and the past.

For reasons like this, it seems important to me that any Museum at Jenolan should not be concentrated in one place, but spread around the caves and the reserve, so that history becomes part of the experience of every visitor. Take the Leffel Wheel - would its function and significance be as clear if it were set in isolation in a museum building rather than below the weir?

We have present here today people whose personal contact with Jenolan extends back 70 years - more than half-way to its first coming to public notice. Not even Wiburd and Wilson could claim that kind of association. Until quite recently, many people made one or two week holidays here, annually without fail. Numerous Caves House guests never enter the caves - their association contributes to the collective of thousands of visitors whose image of Jenolan recalls memories of honeymoons, quiet holidays, friendships renewed.

One group of people who can be said to know this place properly is the guiding staff, and it's probably significant that this was the source of inspiration for formation of Australia's only historical society associated with caves. The detailed knowledge carried by some of them is enormous; as a Sydney newspaper in 1925 said of James Wiburd:

"He has learnt Jenolan with a thoroughness that is appalling. He can tell you the scientific name and its popular equivalent of every tree and shrub that grows on the hills, every tuft of grass that hangs precariously to the rock faces, every bird and animal that inhabits those vast solitudes tucked away in the gorges of the Great Dividing Range, and the limits of its habitat and the reasons for the limitation".

Now let's think some more of mental images. To my mind Jenolan consists as much of Five Mile Hill, Two Mile Hill and the view from Inspiration Point, as much of the view to and through Carlotta Arch, as it does of the caves. These, after all, are the mental and Kodak slide pictures which most visitors carry home to remind them of Jenolan Caves. Our knowledge of the place, and therefore its heritage significance also has to cover the special feeling which Wiburd had for River Cave, and which I understand Frank Harman had for Jubilee. In fact, to me, Mammoth Flat and McKeown's Valley are particularly strong images of Jenolan, and its heritage significance has to recognize the special place which Mammoth Cave has in the minds of cavers.

For a full understanding of the significance of Jenolan as a place, therefore, we have to draw on the accumulated legends, memories and writings of hundreds of people, not merely catalogue an inventory of features.

#### CONCLUSION

To conclude, I would argue that the heritage significance of Jenolan does not rely simply on the reasons given by John Lucas in 1866, nor on the intent of the present protective legislation. It is not just the caves which are important. The whole of Jenolan is an historic environment - the caves, the built environment and the intangible cultural heritage which accompanies it. Its significance as a place should be judged by the kind of meanings people attach to it, and attached to it in the past. Its signif-

ificance depends on much more than ill-defined notions of beauty, and much more than a collection of historical dates and events.

Finally, there has been much debate recently about Jenolan Caves being managed primarily for commercial profit rather than for heritage protection. I really cannot see that such a dichotomy need exist. Well managed for its heritage values, Jenolan Caves would not be a drain on the public purse.

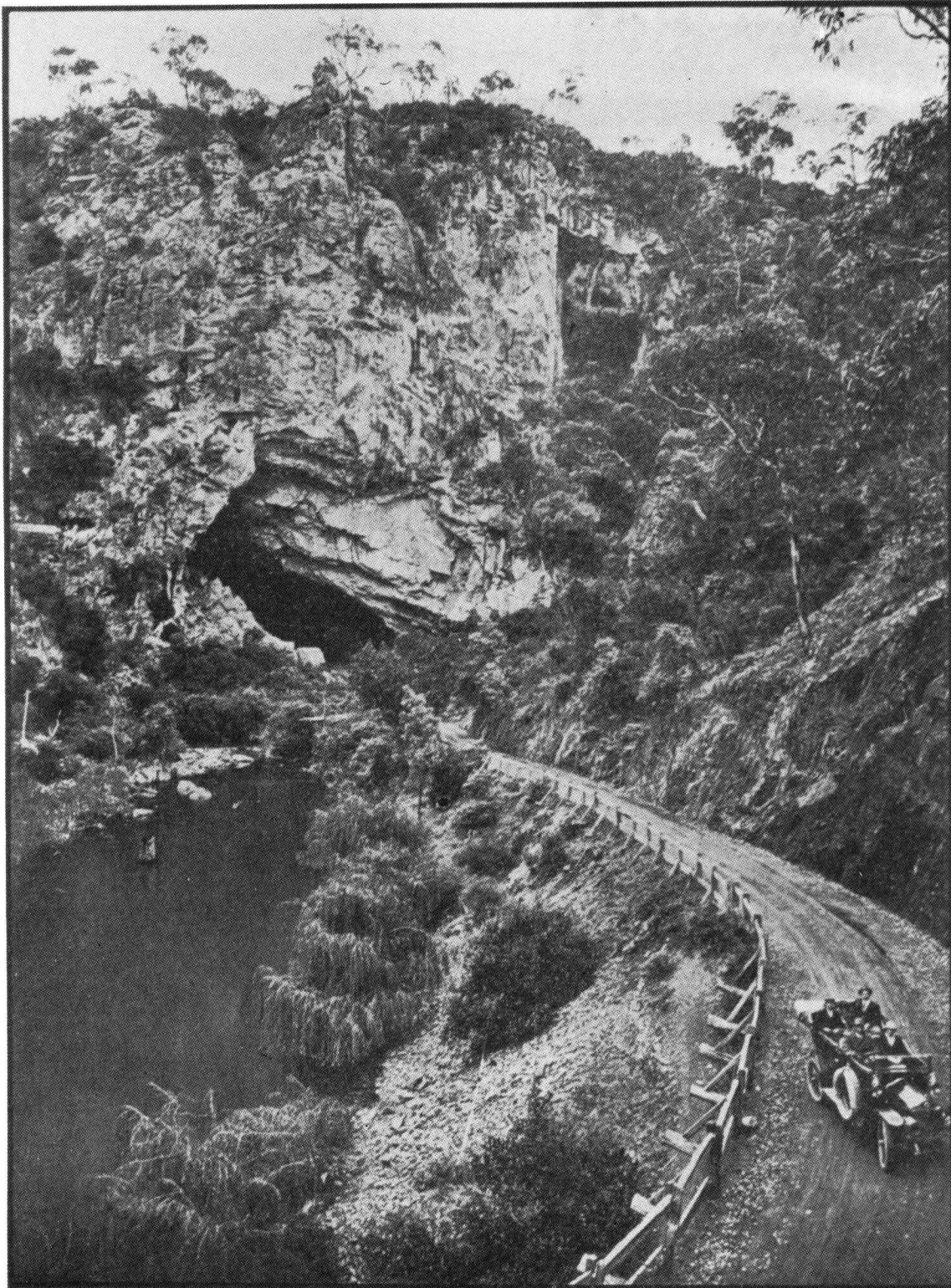


Plate 1. Car on the Five Mile Hill Road above the Grand Arch, Jenolan Caves.  
Photograph from Carne & Jones, "Limestone Deposits of NSW", 1919.

LOUIS GUYMER - BUNGONIA CAVES FIRST CAVE GUIDE

Ross Ellis and Ben Nurse

Preamble

The caves are 9 km from Bungonia Village which is 32 km from Goulburn or 16 km from Marulan and are situated on a plateau bounded by the Shoalhaven River and Bungonia Creek. Bungonia Caves were originally in Bungonia Caves Reserve administered by The N.S.W. Dept. of Lands. In 1974 the Reserve became the Bungonia State Recreation Area. In 1980 all State Recreation Areas were transferred to the National Parks and Wildlife Service. The area is administered by a Trust responsible to The Minister for Planning and Environment.

INTRODUCTION

Louis Guymer was appointed "keeper" of the Bungonia Caves by the Superintendent of Caves, N.S.W. Department of Mines, sometime between June 1889 and January 1890 (Leigh 1890a). He acted in this capacity until 1909 (Nurse 1972), appears to have acted as a guide of sorts prior to 1889 and included guiding as part of his duties during his term as "keeper" at Bungonia Caves.

This paper shows more what we don't know about Bungonia's first cave guide, than about what we do, and we hope that perhaps someone will come forward with some more details of his life. The only sources of information we have on Louis Guymer are the Annual Reports of the N.S.W. Department of Mines (1889-1906) and the historical papers in the book Bungonia Caves.

There is virtually nothing known of his background or what became of him after he left the caves in 1909. A relation of his, (his daughter, Miss A. Guymer of Goulburn), supplied some photographs of L. Guymer, one of which was published in the Bungonia Caves book (and is reproduced herein by courtesy of the Sydney Speleological Society), but she was not able to furnish any other information of note. Sadly most of his personal documents had been disposed of just prior to contact being made with Miss Guymer.

CONTEMPORARY CAVE GUIDES

When compared with other "keepers" or guides of the time little has been recorded about the work of Louis Guymer at Bungonia. We can contrast the situation, for example, at Jenolan Caves, where the work of Jeremiah Wilson (1867-1903) and James Wiburd (1903-1932) is well documented in Mines Department Reports, the contemporary literature, and by later researchers, (such as Cook 1889, Glover 1889, Havard 1934, and Dunlop 1967). Documentation is similar in other areas too: the Chalkers at Wombeyan Caves (1865-1925)m, (Anon 1892, Timms 1922, Nurse 1982); the guide at Abercrombie Caves - Samuel Grosvenor (1889-1908), (Bates 1982); the Bradleys at Yarrangobilly Caves (1896-1911), (Middleton 1972, Middleton 1985a, Middleton 1986b). At Naracoote Caves, S.A., William Reddan (1887-1919) made his mark on the area's history, with cave discoveries to his credit and a chamber named after him (Lewis 1977).

LOUIS GUYMER

Louis Guymer suddenly appears on the scene at Bungonia when he is reported to have discovered (actually rediscovered) the Grill and Fossil Caves sometime previously, in June 1889 (Anderson 1890, Leigh 1890b). The Grill Cave had been known for many years previously, probably as early as 1824, although the first recorded "descent" was made by Major T.L. Mitchell in December 1829 (Mitchell 1829). The Fossil Cave had also been known for many years, the first recorded entry being the one made at Christmas 1872 (Anon 1873). These incorrect claims of Guymer's are understandable as memories are short, and previous records were probably unknown or unobtainable. Guymer or one of the people involved with him and his explorations at Bungonia must have written to the newspapers and the Mines Department about their discoveries. The Reports in the papers were typically dramatic and greatly exaggerated (Anon 1889a, Anon 1889b, Anon 1889c). These reports probably prompted the visit in June 1889 by Anderson (1890) and in July by Leigh (1890b). Consequently, no doubt because of his familiarity with, and his keen interest in the caves, he was duly appointed "keeper" of the caves.

He lived somewhere near the caves at that time, as a way to the caves from Marulan passed "close to Guymer's house, from which the caves are reached by taking a bush-track for about 4 miles down Jerrara Creek" (Anderson 1890).





*Photo by courtesy of Miss A. Guymer*

Plate 1. Louis Guymer; photograph taken c.1890.

A Mr. E. Du Faur contested Guymer's claim to having discovered both caves, and his statement was published in the N.S.W. Dept. of Mines Annual Report for 1880: (Leigh 1890a). While this statement is indisputable, Guymer does seem to have been an enthusiastic explorer and may justifiably lay claim to having discovered what is now known as the Crystal Palace section of the Grill Cave. This section is "one of the prettiest spots as yet known ... a fine collection of snowy-white stalactities, stalgmities, etc. thickly covering an area of about 150 square feet, in horizontal fissure-like cavity ... These dripstone formations are necessarily smaller than usual owing to the narrowness of the cavity, which does not average more than 2 feet from floor to roof" (Leigh 1890b).

During the latter part of the year following Guymer's appointment as keeper, 92 people visited the caves. Some improvements were carried out in the caves, possibly in the form of ladders in the Grill Cave.

There were 230 visitors to the caves during 1890 and exploration was carried on apace, with several branches from the known caves being discovered. In November or December 1890, Guymer was placed in charge of the newly discovered Jerrara Cave at South Marulan, and was required to conduct visitors through it when necessary (Leigh 1891a, Leigh 1891b).

He must have had some interest in palaeontology, as he collected two cases of Silurian fossils which were sent off to the Mines Department palaeontologist, Robert Etheridge Jr. (Leigh 1891a, Etheridge 1892a). He apparently kept up this practice during the years 1891-1898 (Whaite and Whaite 1972a).

Visitors decreased in 1891 - there were only 95 in this year - but thought was being given to visitor protection "along the precipice at the 'Lookdown', with the erection of a guard rail" (Leigh 1892a).

The Drum Cave was also claimed as a discovery by Guymer sometime prior to October 1891. Once again this cave had been well known for years (since at least 1824) (Whaite and Whaite 1972b), but the pitch after the initial 20 metres from the entrance had never been fully descended. It was partially descended on Christmas Day, 1872, by a "Mr. Fahey, a very plucky gentleman", but he did not have enough rope (Anon 1873).

Guymer must have been a similar plucky and adventurous gentleman himself as well as a good organiser, for he can definitely lay claim to being the first person to fully descend the 50 metre vertical drop, using a windlass and rope. This would have been no mean task, and would have required quite a deal of organisation and a great deal of faith in his helpers. A report of the descent of the Drum was published (Anon 1891) and lists the party who made the descent as L. Guymer, G. and F. Marsh, and A.G. Guymer.



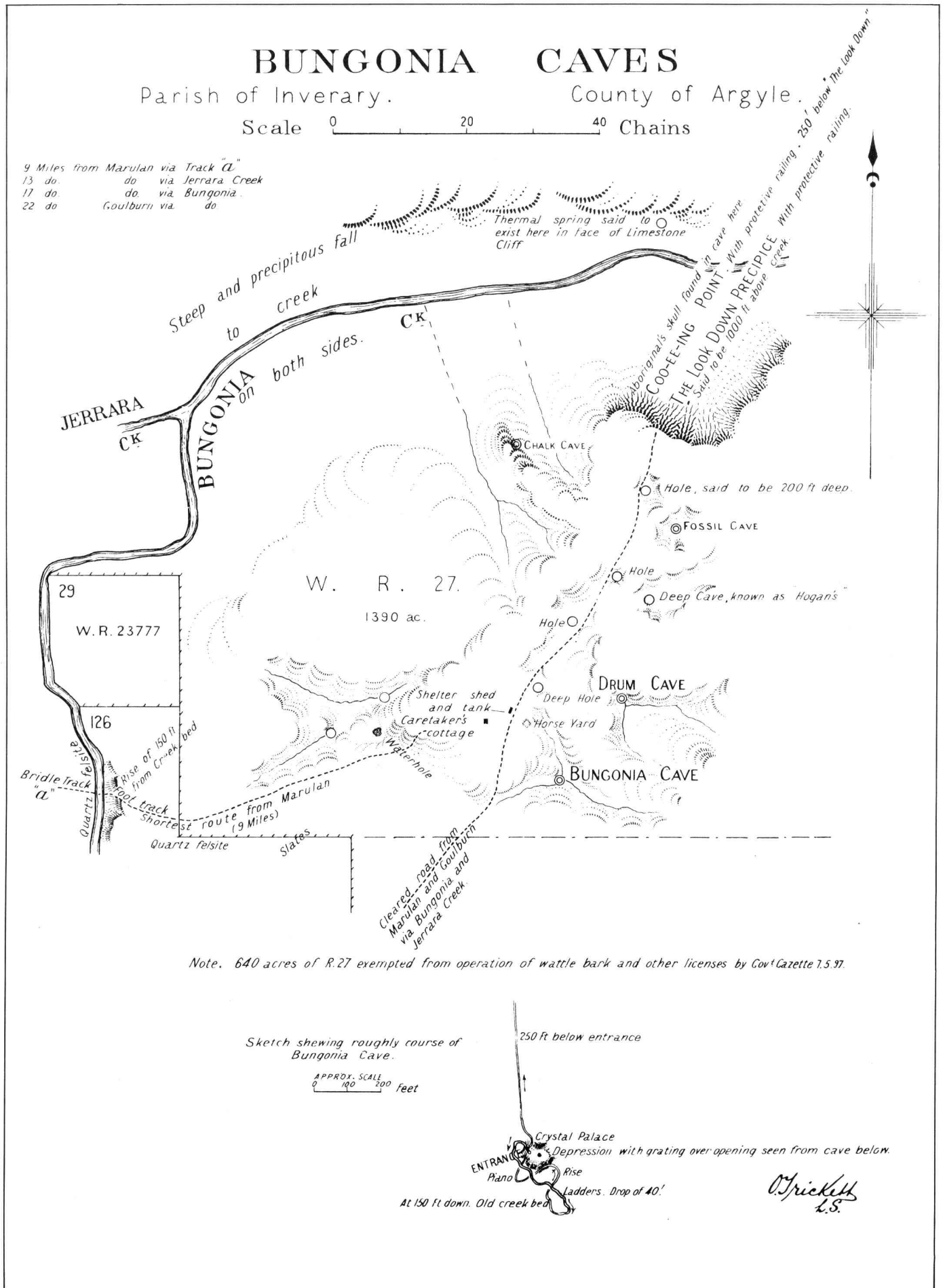


Figure 1. Map of Bungonia by Oliver Trickett.

W.S. Leigh appears to have made a descent of Drum Cave not long afterwards, for he published a substantial report on the cave, which he considered "the best cave yet discovered at Bungonia Caves". It was estimated that it would cost at least £250 to improve and open up the cave for visitors (Leigh 1892b).

Only 85 people visited the caves in 1892, but Guymer had a fairly productive year. He had some trouble with a settler who was preventing people from using the road to the caves (Leigh 1893). Guymer himself reported his next discovery in the Goulburn Evening Penny Post (Guymer 1892), the people at the Mines Dept. apparently being wary of claiming any further discoveries. The new cave was Skull Cave, and it contained an aboriginal child's skull covered with netting (Etheridge 1892b, Etheridge 1893).

Bad road conditions kept people away in 1893 (Only 57 visitors), and Guymer was involved in correspondence in this regard. Things improved in 1894, and the number of visitors increased to 120. Guymer had an iron fence erected around the mouth of Drum Cave (Leigh 1895), and plans for a shelter shed were considered in 1895. Visitors to the area increased surprisingly from 1895 (when there were 302 people), 1896 (313), and 1897 (627). A cottage for the caretaker was completed in 1897, and access to the ladders in Grill cave was improved. Some minor discoveries were made (Trickett 1898).

Oliver Trickett produced a map of the Bungonia Caves area and a Sketch "shewing roughly course of Bungonia Cave". No doubt Louis Guymer assisted in the preparation of both these maps, Guymer's discovery - the Crystal Palace - being shown on the map (Trickett 1898).

There were 356 visitors in 1898, and Guymer was authorised to cut a track down to Bungonia Creek to allow access to water for himself and visitors. The drought in 1899 caused Guymer some difficulties, but did not deter the 559 visitors. Guymer had to carry water 1.25 kilometres from Bungonia Creek up a 50 metre rise.

Guymer must have been involved in the design and erection of the iron ladders that are still being used to negotiate the drops in Grill Cave. Trickett (1900) mentions that "seventy feet of iron ladders were erected in suitable positions at a cost of £15/4/11". Their transport and placement in the cave must have been quite a task, and they remain as monuments to Guymer and his helpers' skill and ingenuity.

Further interest was taken in Drum Cave and Guymer carried out more explorations. No decision was made at the time about making the cave accessible to the public. More exploratory work was done in Drum Cave in 1900, and 656 people visited the caves. Guymer would have assisted Trickett in the production of his map of Drum Cave and arranged the descent and escorted him on the inspection made to map and describe the cave (Trickett 1901). The water problem was solved when the caretaker was supplied with two 400 gallon tanks.

During 1901, 401 people visited the caves and Guymer had a well-deserved 2 weeks holiday. A new chamber (probably the Crystal Palace) was opened for inspection in Grill Cave (Trickett 1902).

Six new caves were explored by Guymer during 1902 (Trickett 1903). Some of these caves were probably Mass Cave, Chalk Cave, and Argyle Hole, which is surmised to have been filled in by Guymer for safety reasons (Nurse 1960).

Guymer showed 437 people around the caves in 1902 and 397 in 1903. A barrier and gate were erected on Mass Cave (then known as The Sirius Cave) and a dangerous rock was removed from Grill Cave (Trickett 1904). Guymer had to clear the road to the Lookdown during 1904 and 401 people visited the caves. A track was cut (probably the Adams Lookout road) overlooking the Bungonia Gorge in 1905, and Guymer was supplied with blacksmithing bellows and tools (Trickett 1906), another indication as to his skills. There were 314 visitors to the caves in this year. In 1906 the caretaker was made a Special Constable and 268 people were shown the caves (Trickett 1907).

From this point in time (1906) Louis Guymer's name disappears from accounts in the Annual Reports of the Mines Department, as does mention of the Bungonia Caves themselves. Why the area went out of favour at this particular time is peculiar, as Trickett's Guide book, The Bungonia Caves near Marulan was published in 1906, and should have promoted visits to the caves (Trickett 1906b).

Joy Whaite has perused Public Service Lists looking for Guymer's name, and it does not appear on these after 1909, thus indicating that he left the area at this time (Nurse 1972).

#### END OF AN ERA

When Guymer left the area, so too did much of the interest in the caves. There is a gap of more than ten years before the Goulburn Chamber of Commerce begins to take an interest in the area again (Nurse 1972).

During Guymer's 21 years of service at Bungonia Caves, he conducted approximately 6,000 people around the area and through the caves. He made several important discoveries

and devised and implemented many improvements to the caves and area.

Strangely enough, it does not appear that any of these numerous visitors were impressed enough by the area or the caves to write about them or their caretaker, as occurred in other areas. There are numerous postcards of most of the other areas, but we have not seen one postcard of the Bungonia Caves area. Even photographs are relatively rare, the most noteworthy being those in Trickett's guide book of the caves.

Louis Guymer played an important part in the early history of the Bungonia Caves, and put quite a lot of effort and devotion into his work. It seems a shame that he should just completely disappear from caving history as abruptly as present knowledge allows.

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## EARLY HISTORY OF YARRANGOBILLY CAVES

Gary Bilton

### INTRODUCTION

To present my first-ever paper to the first-ever seminar of spelean history in Australia is indeed a daunting, but challenging task. Present knowledge is scattered, to say the least, however it is my aim to present what is known from present resources with regard to the early history, and to reproduce some of the earliest photographs and maps of the area, some of which have never before been published. Hopefully this will provide impetus for a more systematic and detailed approach to future historical research on Yarrangobilly Caves.

The history of the human occupation of Yarrangobilly Caves probably goes back thousands of years with increasing evidence of Aboriginal use becoming apparent. The Caves have been known to Europeans for around 150 years but the history of the early years is far from clear.

### OVERVIEW

Yarrangobilly Caves is situated in the northern end of Kosciusko National Park in southern New South Wales. It is the only developed tourist cave system to lie within a national park and is the only tourist cave system in the State with its entire catchment area managed as a conservation reserve.

Archaeologically the area seems to be linked to the possible migration of Aborigines along a natural direct route from the Tumut and Goobarragandra River valleys to the Mount Jagungal area. Historically the area was along a natural direct route (a bridle track) to the Kiandra goldfields and the Glory Hole Farm. Later, some small local mining operations and the tourist value of the caves and thermal pool became factors of significance for the development of the area. In 1982 the area was identified as an "Outstanding Natural Resource" by the National Parks and Wildlife Service and is at present under investigation for a whole-catchment karst area management plan.

### PREHISTORIC ACCESS AND OCCUPATION

The only ethnographic evidence of Aboriginal occupation of the Caves area is a record of a burial site found in November 1839 by Terence Aubrey Murray and Stewart Mowle. "In one of them [the caves] I found many human bones, and I brought away a skull" (S.M.Mowle in the Sydney Evening News, 30 March. 1891). The location of this skull is not known although Wilson (1968) states "that he [Murray] was to keep it beside his books for many years."

Dr Josephine Flood, an archaeologist, surveyed the Caves area in the late 1970s and comments that the use of limestone caves as burial places was widespread in the Southern Uplands (Flood, 1980). No signs of occupation of the caves were found by Flood and no surface finds were discovered in the vicinity. However, more recently cave sites have been found both at Yarrangobilly and at Cooleman Plains (20 km to the north-east, Spate pers. comm.). Flood also mentions the use of set routes by the Aborigines to the highland regions in search of the nutritious Bogong moth. She mentions specifically the passes between valleys "such as that at Kiandra-Yarrangobilly between the headwaters of the Murrumbidgee and Tumut Rivers".

On 30 October 1985, the Regional Archaeologist of the National Parks and Wildlife Service, Sue Feary, was requested to inspect a proposed site for a picnic shelter at Yarrangobilly Caves. The site had been previously inspected by amateur archaeologist and Cave Guide Stephen Reilly and an Aboriginal site recorded by him. This was the first positive identification of Aboriginal occupation of the immediate Caves area. Since that time Reilly has identified at least twenty other sites in areas which, if verified, could be significant evidence of Aboriginal access to, occupation of, and egress from the Yarrangobilly Gorge and Rules Creek Valley. According to Dot Morgan of the Tumut Aboriginal Land Council there is no local of Aboriginal descent who can remember the Caves area as being significant. The significance of the Yarrangobilly Gorge, the caves and the thermal springs to early Aborigines is at present only just in its tantalising first stages.



THE DISCOVERER

Documents

The first European to discover the Caves is thought to be John Bowman in 1834. He is reputed to have been looking for stray cattle and stumbled on the caves. While there are a number of references to his discovery and a strong local folklore to support this, it is very difficult to obtain documentary proof of his presence in this locality. According to his certificate of Baptism, John Bowman was born in Sydney Cove, Port Jackson on 10 February 1795 and baptised in St Phillips Church of England. His parents' names were shown as John Bowman and Ann Mary Morgan. The disparity in surnames would indicate, that at the time of his birth, his parents were not married. This was apparently quite common for these times among convicts, although there is no other indication that they were convicts.

John junior married Mary Heffernan, an Irish Catholic, on 31 May 1841 at Maneroo (Marriage Certificate). In a copy of the 1859-60 Tumut Electoral Roll, Bowman is mentioned as being a "Freeholder of Gilmour Creek" (near Tumut). The only other document known of John Bowman is his death certificate which gives his death as 14 May 1887 at East Blowering, Tumut. His occupation was Grazier, he had been married for 44 years to Mary Hefran (sic) and they had a daughter, Catherine, 34 years old. Mr and Mrs Bowman's headstones still exist in the Tumut Pioneer Cemetary although Mr Bowman's has fallen over and is broken up.

Press Releases

The first known release to mention John Bowman is the Tumut Centenary Booklet of 1924 (Anon, 1924): "....Mr J. Bowman, who resided at Spring Flat (now known as Morrisies), discovered the Glory Cave in 1834, taking shelter from a thunderstorm while looking for stray cattle."

In 1934 the editor of the "Cootamundra Herald", visited the Caves and wrote an article entitled, "Yarrangobilly Caves, Discovered 100 Years Ago." In this article it is mentioned that, "Originally, so tradition hath it, they [the Caves] were discovered 99 years and 10 months ago, by a Mr Bowman, who died - was buried - in Tumut and relatives of whom live today at Blowering. Next month (February), is the Centenary." In 1963, Anthony Bradley, the son of the second caretaker of Yarrangobilly Caves, and a resident of the Caves from 1892-1911 was requested, by the then Director of the Tourist Bureau, to write a history of the Caves. An extract from his reply states: "The first reported discovery of the Old Glory Hole Caves at Yarrangobilly was made by a man called Bowman in 1841. He lived on a farm 19 miles from Tumut near Talbingo. He was looking for some cattle that had strayed from home."

In the Tumut and District Sesquicentenary Book 1824-1974 (Graham and Watson, 1974), Leo Hoad, caretaker of the Caves from 1919-1945, wrote "John Bowman, the first white child of free parents in Sydney, in 1834 discovered the entrance to the Glory Hole Cave at Yarrangobilly whilst sheltering from the weather during a thunderstorm. He ran wild cattle which are known to have roamed as far south as Bombala and increased by the thousands. However, a plague of pleuropneumonia wiped out many of the cattle and also many of the koalas once numerous in the area."

In 1964 Hoad wrote an article for the Tumut and Adelong Times. Here he mentions Bowman's place of residence. "The Yarrangobilly Caves were first discovered in 1834 by a man named John Bowman, of Currango and later of Talbingo, who was searching for lost cattle. A thunderstorm forced him to take shelter and had resulted in him discovering the huge Glory Cave arch. He found some of his cattle inside and was able to inspect one passage by natural light for nearly 100 feet. He further explored the cave with the aid of candle bark. In the winding corridor on the north he wrote on the walls."

The final publication dealing with John Bowman's discovery of the Caves is from a book written by Jack Bridle in 1979. Bridle himself is a descendent of the early settlers of the Blowering/Talbingo area. "John Bowman was another who came to Talbingo very early in the settlement of the district. He was born in Sydney, and came to the Monaro as early as 1834. That same year, while shepherding cattle in Yarrangobilly ravine [=Gorge] trying to find shelter from a thunderstorm, he accidentally discovered the Caves. Bowman ran cattle all the way from Talbingo to Kiandra, like all others at the time, more or less illegally, as all land then belonged to the Crown. John Bowman's first home was four miles from the present Kiandra town. He later took up land near Jounama Station at Yarrangobilly, then later again selected 120 acres near Morris Creek at Blowering."

Interviews

On 19 August 1970, Greg Middleton recorded the first interview with Anthony Bradley (Bradley, 1970a). This dealt with the history of the Caves. In this extract we learn of his familiarity with the Bowman family.

"AB: John Bowman lived 19 miles from Tumut near the foot of Talbingo Mountain. He was a farmer and he was looking for stray cattle in the locality when he came across the Caves. We knew his family very well.

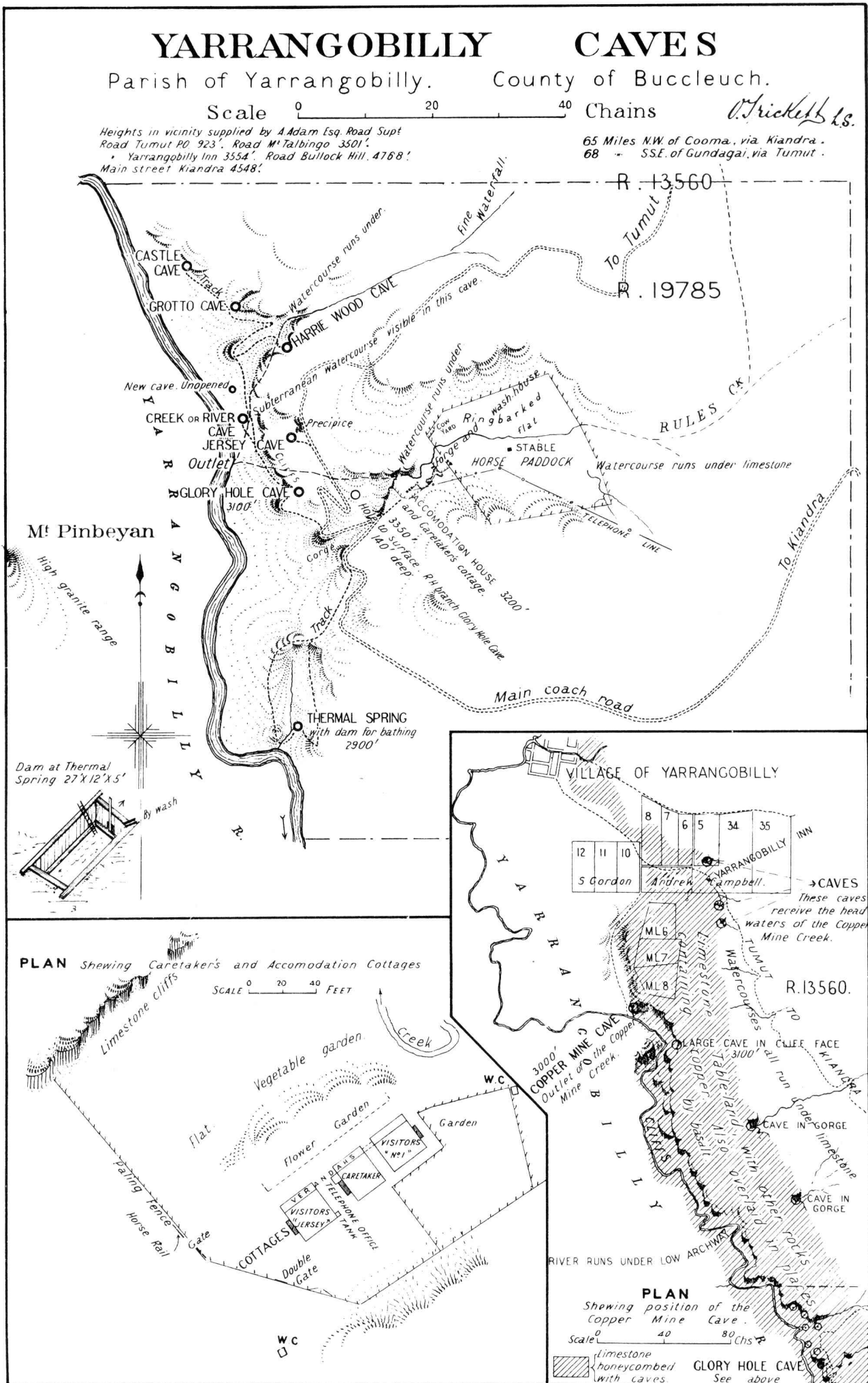


Figure 1. Earliest published survey map of the Caves by Oliver Trickett

GM: But very little seems to have been written about the early history of the Caves. Do you believe Bowman found the Caves in about 1841?

AB: I do; in fact I haven't heard any other claim."

Leo Hoad was also interviewed by Middleton (Hoad, 1970). This took place on 27 August 1970. Although it contains at least one inaccuracy regarding Bowman's daughter's birthdate, it does give credence to his source of information, his grandfather, regarding the discovery of the Caves. "Well, you see, Bowman was the first man, he had cattle there; cattle all over the place. They went as far out as Jindabyne - Bowman's wild cattle they were called. He resided at Currango. I have an old Tumut paper somewhere, saying his daughter was born there, in 1840 I think. Of course there was no such thing as a midwife in those days. It was known as Currangorang and he was telling my grandfather when he first discovered the Caves. He was looking for stray cattle and he found them sheltering in the arch there. I've repeated that story ever since." And later, "It was about 1834 when he discovered the cave..."

To add to the confusion about when and by whom the Caves were discovered Wilson (1968) states that Bowman found the Caves in 1836 and adds in a footnote: "If Murray [T.A.Murray of Yarralumla] did indeed cross the mountains from the Monaro earlier in the 1830s it cannot be said for certain that he did not find the entrance to the Yarrangobilly caves then, before Bowman. It is claimed in the Yarrangobilly area that Murray was the man to discover them, but nothing has been found to make a definite claim for Murray pre-dating Bowman."

#### Photographs

The earliest known photograph of Yarrangobilly Caves is held in the Tumut Historical Society Collection and is reproduced in this paper. Its origin is unknown and the inscription not verified. The caption reads "The Glory Arch entrance to the Yarrangobilly Caves Discovered by John Bowman in 1834, Photograph taken in 1866." This photograph may have been quite a technical achievement (Cannon, 1973) considering the first wet plate negatives were made just 15 years earlier.



Plate 1. The Glory Hole Cave, photographed in 1866





Plate 2. Mr and Mrs James Pascall Merry (later Murray) first Caretaker of Yarrangobilly Caves. Below is their grand-daughter Ruth and behind an unidentified person, perhaps an assistant. Note the magnesium light. Date unknown.

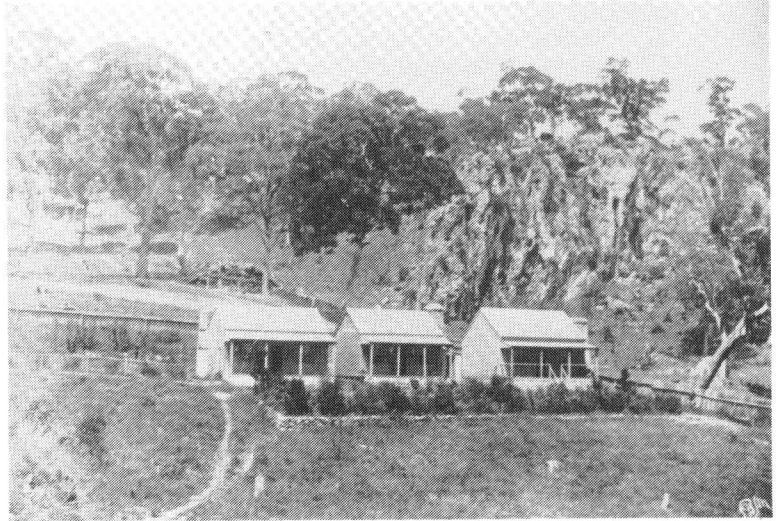


Plate 3. The original Caves Cottages. From left, Caretaker's cottage, the original guest house, the additional guest house later named "Jersey Cottage". Photograph taken approximately 1892.

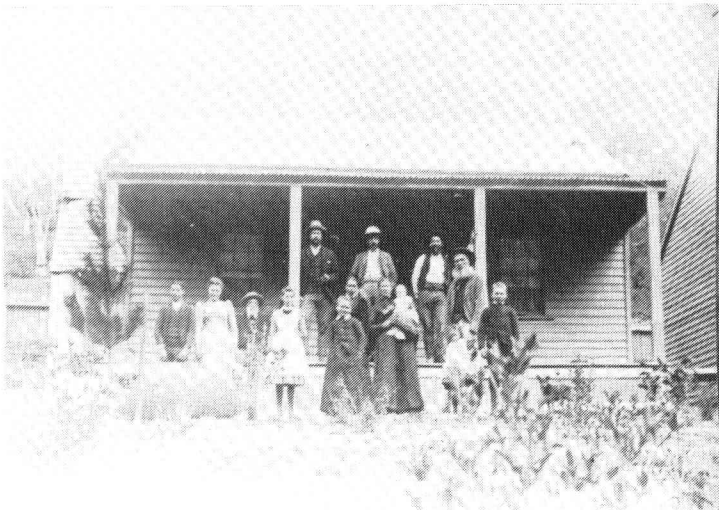


Plate 4. The Murray and Bradley families outside their Yarrangobilly Caves home. From left, John Thomas (Jack) Bradley, Ruth Bradley, John Sanctuary, Jennie C. Bradley, Ruth Bradley (nee Murray), James Bradley, Ruth Murray (nee Rogers) holding Mary Anne Prudence Bradley, James Murray, Sarah Anne Alice Bradley and Anthony Harris Mobsby (Tant) Bradley far right. The three gentlemen behind are unknown. Date approximately 1892.



Plate 5. Some of the Bradley family taken at Yarrangobilly Caves. From left, Anthony (Tant), Ruth, Henry Tasman (Tas) Bradley and Henry (Harry) Bradley. Tas Bradley is 89 years of age and is the only surviving member of Henry Bradley's family; he resides near Tumut. Date approximately 1900.

### Research

Some members of the Society of Australian Genealogists were approached with regard to undertaking research to determine using documentary evidence:

1. Whether John Bowman was the first white child of free parents?
2. Where John Bowman was in residence or held property in 1834?
3. If there were any contemporary accounts of the discovery of the Caves in 1834 (press or private documents)?
4. A chronology of Bowman's properties/residences from 1834 to 1858?

A preliminary reply by Elizabeth A. Roberts of the Society has indicated:

1. "No - at least four children were born to marines and their accompanying wives in 1788. This claim has been erroneously made for many people and I have researched it before."
2. "Difficult - he is not in the 1828 census so was probably already living outside the 19 counties. The only chance of knowing where he lived is if he is mentioned in a local area journal."
3. No local papers existed. Lhotsky's and Strzelecki's accounts of travels in the regions plus the February 1840 list of licence holders in the Maneroo district were mentioned as possible areas for search.
4. "To be listed on the electoral roll he had to be paying a 10 Pounds per annum licence fee or own property worth 100 Pounds. The "120 acres near Morris Creek" is likely to have been acquired by provisional purchase after 1860."

It is envisaged that funding for this research will be available shortly.

### THE FIRST CARETAKER

### Documents

Up until 1879 the Yarrangobilly Caves area was under control of the Lands Department of the Colony of New South Wales. Following that date the Department of Mines took control. On 6 December 1886 the Geological Surveyor William Anderson undertook the first official inspection of the caves. In his report he states: "With reference to the appointment of a keeper to the caves, I have to state that while I was at the caves I met Mr James Murray, of Kiandra, who knows the caves well, and seems otherwise well fitted to fill the post of caretaker and guide to the Yarrangobilly Caves."

James Preston Murray was baptised James Pascall Merry at Whitechapel, London, in 1826. He was the first child of William Merry and Jane Merry (nee Pascall) (International Genealogical Index). According to the Convict Register in the Tasmanian Archives, he was an apprenticed gun-maker when he fell foul of the law at the age of 16 and was transported on the "Forfarshire" to Tasmania for ten years. He married Ruth Rogers in approximately 1855 at Hobart. The marriage produced two daughters, one of whom later married Henry Bradley, the second Caretaker of the Caves.

The annual report of the Department of Mines for 1887 (p.141) states: "A Caretaker, James Murray, has been appointed to the charge of the Yarrangobilly Caves, where an accommodation house is in the course of erection." An excerpt from the papers of John Arthur Perkins held in the Mitchell Library, Sydney, mentions that on 4 October 1887 "tenders were called locally for the erection of 2 cottages at Yarrangobilly Caves for the Caretaker and visitors. Mr James Murray has been appointed caretaker." In January 1889, the Superintendent of Caves for the Department of Mines, Mr Leigh, wrote "An accommodation and keepers cottage having just been erected, it is expected there will be large increase in the number of visitors this season..."

The Historical Section of Australia Post details the first form of communication to the Caves (Cremer, 1981). "A Telephone Office, from which telegrams could be dispatched, and from which telegrams could be collected, had been opened at Yarrangobilly Caves before the establishment of the Receiving Office. It is known that a telephone had been connected on 30th June, 1880, and that a Telegraph and Telephone Office had been opened in that year. However, at present it is not known where the office was situated or whom was in charge." This is a very early date to have such a sophisticated means of communication in such an isolated area. Yarrangobilly Village, along the main Tumut to Kiandra road, did not receive a telephone until 14 February 1905 (Cremer, 1981). On 12 July 1890 it was noted in the Perkins' Papers "...telephone connection has been completed between Yarrangobilly Caves and Kiandra which is a great convenience to the Caretaker Mr Murray - the government has increased Mr Murray's salary to 100 Pounds plus residences."

Visitation to the Caves did increase as expected to the point where Leigh (1891) wrote "These caves are now connected to the nearest telegraph station (Kiandra) by telephone, which has proved of great service to intending visitors and the keeper. The accommodation now provided not being ample, tenders have been invited for the erection of another cottage for the use of visitors."

On 4 March 1891, according to Perkins, "a telegram from Tumut states that a group of tourists from Tumut under the leadership of John Campbell (of Yarrangobilly) have discovered a magnificent series of new caves above the old ones. The Caves have been named the Jersey Caves." While this 'discovery' is the first documented reference to the Jersey



Cave, there were a number of other undocumented references made of earlier discovery of the Jersey which are not dealt with here. It was certainly this 'discovery' which featured so prominently in the future development of the Caves.

It is difficult to determine whether the new Governor of the colony of New South Wales had previously planned his visit to Yarrangobilly Caves or whether this new discovery prompted the Tour. However, on 16 November 1891 Perkins states "Lord Jersey's visit to the Caves - arrangements are being made in Cooma to entertain the Earl of Jersey on the occasion of his visit to the Yarrangobilly Caves in January." Lord Jersey visited the Caves on Friday 8 January 1892 and with a vice-regal flourish put Yarrangobilly Caves firmly on the map.

Leigh (1892) in his annual report mentions the discovery. "At Yarrangobilly the most important discoveries of the year have been made. The first of these also named the Jersey Cave [a Jersey Cave was named at Jenolan the same year] is unsurpassed for the richness and variety of its dripstone formations. The others, four in number, were discovered subsequently by Messrs. Murray (keeper), Elphick and Bradley." These were the Castle, Harrie Wood, River and Grotto Caves.

There are many comments found in the early visitor's book, which dates back to 1889, mentioning Mr and Mrs Murray's kindness, hospitality, attentiveness, civility and ableness as a guide, and the cleanliness of the guest house. These extracts are from an unpublished article called "Our Trip to the Caves" by Edith Peden who was accompanying the Governor's official party in 1892. The occasion mentioned here occurred after the Governor had left the Caves. It gives us the only record of any length of Murray's character. "...and we go off led by Mr Murray, the kindly old caretaker, he cherishes those caves as if they were a pet child." And the next day, "We all went to the cottage to put our names in the visitors book, how pleased Mr Murray looks. The day before he was a little cross, and now asked us not to go away with the idea he is an old bear. One of the gentlemen began to tease him, and soon proved that he was not an old bear but good natured and honest, though gruff man."

The last document dealing with Murray is from the Mines Department annual report in which Leigh (1896) states: "It is with regret that I have to record the death of the late keeper, Mr J. Murray, the result of an accident met with on the 18th October. Mr Murray has been in the Service about eight years, and always took great pride in his work, especially so in regard to the proper preservation of the caves under his charge, and the cleanliness as regards the accommodation house. The keepership, thus rendered vacant, was first offered to two of the senior guides at Jenolan in turn, but was declined by each. It was then offered to, and accepted by, Mr H. Bradley, the acting keeper, whose appointment dates from the 1st of January, 1896."

Mr Murray's headstone still stands in the Kiandra Cemetary and states: "In Loving Memory of James Preston Merry who departed this life 29th October 1895 aged 68 years. Though lost to sight to memory dear." It would seem that Murray suffered a lingering death if Leigh's reported date for the accident, 18 October, and the date of death on the headstone, 29 October, are correct.

#### Press releases

The first press release mentioning Murray was in the Cootamundra Herald in January 1934. It simply states that Murray was appointed by the State government in 1888. The next known source is Bradley (1963) who says in a letter: "James Murray, my grandfather, as near as I know arrived at Kiandra about the year 1870 and for many years as a sawmiller supplied the inhabitants of Kiandra with the timber to build their homes, the timber was out near where Tumut Ponds Dam has been built. On Sundays my grandfather used to organise Picnic Parties and ride on horseback down to the Caves. He then used to guide the people through the Caves and in those days the only means of light was candles and pieces of soft wood soaked in hot fat to make a big flaming torch. My grandfather seeing a means of living collected a team of horses and saddles and organised regular tours of the Caves, and eventually he took over private ownership and to the best of my knowledge that was about the year 1875. The only caves known at the time were the Old Glory Hole Caverns North and South branches. As near as ever I could find out it was about 1885 that James Murray was appointed Caretaker at a salary of 25 Pounds per annum.... My Grandfather was a sailor in his youthful period. James Murray met with a severe accident in 1895 as a high spirited horse he was driving from Kiandra bolted of the road and crashed into a tree. He was so severely injured he died a few days later."

The Tumut and Adelong Times article (Hoad 1964) states: "James Murray was appointed first caretaker at a salary of 70 Pounds a year. Murray was eventually killed when on his way home from Kiandra in a one horse buggy. When the king bolt came out of the circle plate Murray was thrown out onto a stump, suffering injuries from which he died."

Hoad (1974) in the Tumut Sesquicentenary book also says: "In 1888 Mr and Mrs James Murray were appointed by the Mines Department at a fee of 75 Pounds per annum to caretake and protect the caves from vandalism. The first building to be erected near the Caves was a log cabin at the western end of the present garage [now demolished], then a further four cottages were gradually built on a piece of ground which later became an orchard. Mr Murray, a former ship's carpenter, who had for some time worked a most productive gold

mining claim at Reedy Creek (Batlow), worked on different buidings in the district and stayed at the Caves until 1895, when he met with an accident and was killed after being thrown from his buggy."

#### Interview

Bradley, in an interview with Middleton (Bradley, 1970a) gives some indication of why Murray was chosen as caretaker:

- GM: James Murray, your grandfather, was the first guide. Was he just a private individual who took people down and through the caves?
- AB: That is so. He established a small sawmill out at the Eight Mile (that's eight miles from Kiandra) and he got the idea when somebody invited him one Sunday for a trip down to the Caves. Later he got a supply of horses, saddles and all that sort of thing, and he conducted tourist parties there each Sunday. Then after some years the Government appointed him as Caretaker; 1886 or 87. As far as I know he was the only person showing people through the caves at the time."

In a second interview Bradley (1970b) tells of the first cave rescue at the Caves: "Where they recently cut that tunnel through from the end of South Glory Cave, there was a much deeper crevice than what there is now. They must have filled it up because some time about 1894 or 1895 (it must have been about then because he died in 1895), my granddad explored it. He was always wanting to explore it so he had a crabwinch brought to Yarrangobilly. It was a thing weighing a hundred-weight or more - should be still there somewhere about - and a piece of rope about 100 feet long. It took about three men to carry the cursed thing. Anyhow, with my father and my brother and the old chap - he was an old man at that time - we scrambled up the side of the rocks, up to the entrance (it's still up there; it hasn't been disturbed). We cut a gum tree down and put it across there so the rope was secure. We threw the end of it down the hole. The old granddad he shinned down - he was a sailor in his younger days - to the bottom. But when he wanted to come back after he'd seen all he wanted, he couldn't get out of it. He was there for 24 hours in the hole. He was there all night and well into the next day. We had to send him down some blankets on a rope. We built a sort of platform over the hole and my old dad, who was most powerfully built, lifted him hand over hand out of the hole. We could only bring him up inches at a time; the only good purpose the winch served was to take up the slack. All the old chap knew when he was down there was that there was a strong draught."

Middleton also interviewed Leo Hoad (Hoad, 1970):

- "GM: After the discovery I take it the caves were just open, there was no control over them?
- LH: No control until 1888, and Murray was the first Caretaker. He had been living in and around that country for a long time and used to work for Gibbs..... He'd been a sailor in the early days and he was a pit sawyer.... Murray was caretaker from 1888 - 75 Pounds a year he got and whatever he could make out of putting up guests. He sawed most of the timber for the first lot of little cottages that were built down there. But the two Glory Caves were locked up in 1888. There was nothing much thought of them until Kerry [well known Colonial photographer] came along. Kerry had heard that there was a good cave there, but it hadn't been opened up, and as far as he knew nobody knew where it was. So he got in touch with Murray."

This was probably the Jersey Cave.

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PALEONTOLOGICAL STUDIES AT WELLINGTON CAVES NSW

Michael L. Augee

THE PAST

There is no evidence that Aboriginal Australians entered or used Wellington Caves. However the very first record of the caves by European Man, a drawing made by Augustus Earle in 1826 or 1827, illustrates Aborigines just outside the entrance to Cathedral Cave. That may of course simply be artistic embellishment, and it is not absolutely certain that the picture is Cathedral Cave entrance as Earle refers to it as "Mosman's Cave in the Wellington Valley". No other use of that name is known. So credit for first reference to Wellington Caves is usually given to the explorer Hamilton Hume from an entry in his diary for December 1828. The first reference to the rich fossil deposits in the Wellington Caves system appeared shortly thereafter in the form of a letter to the Sydney Gazette dated 25 May 1830 from Mr George Rnaken of Bathurst (Lane and Richards 1963). Shortly thereafter Ranken accompanied the colonial surveyor, Major Thomas Mitchell, to the Wellington Valley arriving in July 1830. Mitchell, realizing the scientific value of the fossils, sent collections to Europe in 1830 and 1831. There they were examined by the leading scientists of the time, including Richard Owen in London and colleagues of Cuvier in Paris (the Baron having died in 1822) (Lane and Richards 1863, Foster 1936). Modern paleontologists, beset by postal strikes and delays of several years in publication can take no joy from the fact that fossils from Wellington Caves, excavated in the second half of 1830, had been received in Europe, examined and referred to by Lyell in his classic "Principles of Geology" published in 1833!

That book had great influence on Charles Darwin, and it is likely that the Wellington Cave fossils also had an influence on him (Dugan 1980), since they indicated that the living unique Australian marsupial fauna was unique in the fossil record as well.

The next phase in the study of Wellington Cave fossils is distinctly Australian. Although Gerard Krefft, a curator at the Australian Museum in Sydney, sent some fossils collected in the late 1860s to Europe, most of the material was deposited in the Australian Museum. This policy of building up local collections was continued by E.P. Ramsay, who succeeded Krefft at the Australian Museum in 1874. Using collectors, Ramsay obtained a great deal of material from the caves.

By the turn of the century scientific interest in Wellington Caves had all but ceased. Although the NSW Department of Mines, which had taken control of the caves in 1884, encouraged collection of fossils, nothing much seems to have been done other than store them without registration in the Geological and Mining Museum in Sydney. A brief mining phase, occurred in the years 1913-1917. The NSW Phosphate Company extended some natural passages and made tunnels in the breccia-filled limestone cavities in search of fertilizer. It would be a worthwhile exercise in filling in an important phase of the history of Wellington Caves for someone to search out records of the activities of this company and see exactly what they removed from the area. Examination of the mines clearly indicates that a great deal of fossil-rich breccia was removed. While it has been suggested that they were looking for and using phosphatic rim-rock (Osborne 1983) or even guano deposits, this appears extremely unlikely upon examination of the site. Whether to serve as the traditional "bone-meal" fertilizer or incidental to the mining activity, a great deal of the fossil bone was clearly destroyed.

More recent collections have been made far more carefully and with much better documentation (fossils which are stored without any information about their site and condition of collection lose much of their scientific value). This phase was inspired by Charles Anderson, Director of the Australian Museum from 1921 to 1940, who also initiated examination and study of the vast fossil collections held in Sydney from Wellington. In 1932 he visited the caves and made collections from the phosphate mine passages with W. Schevill of Harvard University. A larger and very well documented collection was made by Americans in 1954 and is held in the University of California Museum of Paleontology in Berkeley.

An interesting and little known collecting trip occurred between these two American visits. In 1939 two German scientists (Dehm and Schroder (1940, 1941) collected material from three sites in the system (Bone Cave, Cathedral Cave and the Big Sink). 1939 was not a particularly fortunate year for German scientists to be working in the British Commonwealth. When war broke out, fossils from Wellington (and other Australian sites) had left Australia in two ships but the scientists were interned in Melbourne. They were allowed to leave and made their way via Indonesia, Japan and Russia to Munich. One shipment of fossils arrived in Germany during the war and the other, only partly intact,

arrived after the war. As a result of this, and heavy bombing in Munich, all documentation was lost and no details of the collection have ever been published. The author (Augee) has received support from the University of NSW to visit the Bavarian State Museum for Paleontology and Historical Geology in early 1986 to examine the Wellington Cave fossils held there.

#### THE PRESENT

The current phase of scientific investigation began with a thorough examination of Wellington Caves material held in the Australian Museum by Lyn Dawson (Dawson 1985). He work has continued as part of a project started by the School of Zoology, University of NSW in 1982. This work, in part sponsored by the ARGS, is still underway. Three fossil deposits are being examined; "Big Sink" tentatively designated as Pliocene in age, "Bone Cave" probably of mid-Pleistocene age, and "Cathedral Cave" which is Pleistocene to Recent in age. These deposits cover most of the known fossil history of rodents in Australia. Bone Cave and Cathedral Cave contain thousands of small and large mammal bone fragments. The fossils of small mammals were largely ignored in earlier collections where the emphasis was on larger and more dramatic marsupials such as the Marsupial Lion (*Thylacoleo carnifex*) and *Diprotodon optatum*. The current excavation in Cathedral Cave is based on the opposite approach - it is being dug in 10 cm. levels with thorough sampling of all fossil remains. In the first 5 meters excavated these remains are almost all small terrestrial mammals. Birds, lizards, and possums (all well represented in the present fauna around the Caves) are noticeably rare. Most of the small mammal bones probably came from owl pellet deposits and have been washed to their present position by periodic flooding of upper parts of the cave system. With few exceptions only teeth and jaw fragments can be used for identification and quantification. Information about the species and numbers of rodents present at various levels of the dig is important because rodents serve as good indicators of past climates. The chronology of changes is indicated by carbon dates, which show a minimum age at the 5 meter level of 21,000 years BP (BP = Before Present). In the Cathedral Cave situation information about paleoclimate is even more important because the dig passes through the time when the large marsupials, such as *Thylacoleo* sp. and a number of large kangaroo-like forms, become extinct. A preliminary study of the rodent fossils of Cathedral Cave has supplied no evidence for major climatic changes over the time span covered by the deposits down to the five meter level. Since the lower part of this excavation contains bones of large marsupials which are completely absent from the upper part, any evidence about climatic conditions that can be obtained from the excavation has important implications for understanding the remarkable extinction of the Pleistocene Australian marsupial megafauna. There are other lines of evidence, such as changes in the type of sediment at various levels, which can be followed in the Wellington Cave system in order to test alternatives to the widely held hypothesis that the Pleistocene megafaunal extinction in Australia was due to the activities of Aboriginal Man. Wellington Caves have great potential for such paleo-ecological studies, extending even back into the Pliocene.

#### THE FUTURE

Wellington Caves is currently a Crown Reserve of which the Wellington Shire Council is Trustee. While that body has made many improvements in tourist facilities at the Caves, it is uncertain whether cave or fossil conservation can ever be a primary objective of government at the local level. Local government must be concerned primarily with economic benefits to the local area. This is proper. But it must lead to some question as to whether the future management of such an important part of the heritage of the state of NSW and of Australia might not be better placed in the more experienced hands of some instrumentality such as the National Parks and Wildlife Service whose primary commitment is to conservation. Management for heritage conservation need not destroy development of tourism (and there are many cases where it in fact leads to enhancement), but management for tourism development can lead to destruction of cave features and fossil deposits that have great scientific and heritage value.

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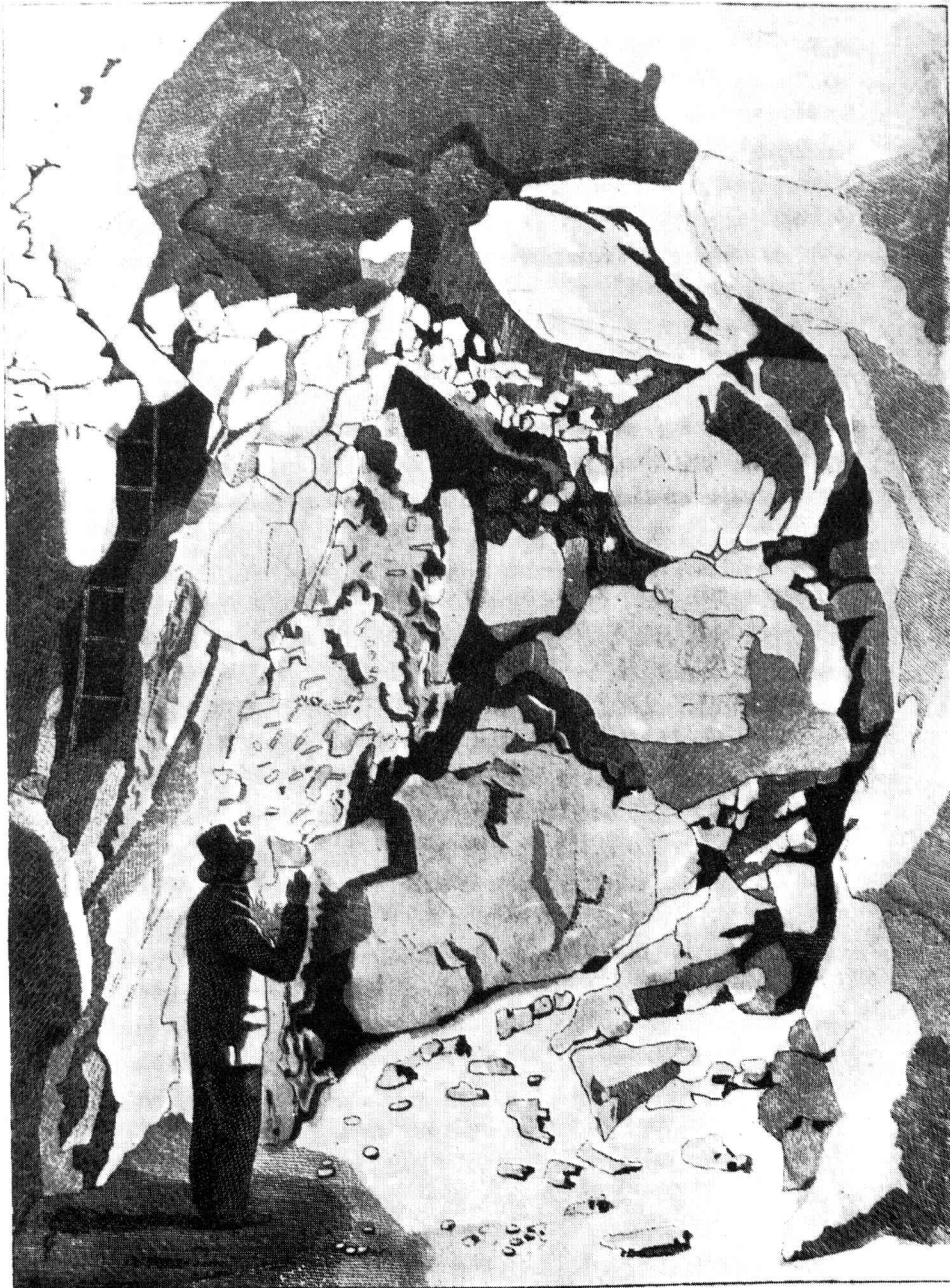
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PLATE V.

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*Sketch shewing the manner in which the Osseous Breccia occurs in the Cave at Wellington, in New South Wales*



*The Cave in which the fossil bones are found at Wellington Valley is in Compact secondary Limestone, as described more fully in a memorandum which accompanied a very large bone sent by Mr. Rankin to Prof. Jameson. It is near a larger Cave where no breccia has been found, and which is very different in character from that of which this drawing is intended to convey an idea, the appearance of disruption with unshapely masses of rock overhanging being characteristic of all the situations where the fossil bones have hitherto been discovered in N.S. Wales. (20/1/1831). The bone above mentioned is that of an Elephant.*

Plate 1. Aquatint of the interior of Breccia Cave, Wellington, by Thomas Mitchell, published in 1831 in Part XXIII of the Edinburgh New Philosophical Journal. This is the first published illustration of the Wellington Caves.

AN INTRODUCTION TO ABERCROMBIE CAVES RESORT

M. J. Treharne, J.P.

INTRODUCTION

Abercrombie Caves Resort is located near Trunk Road 54 South (Bathurst/Goulburn Road). The turn-off to the Caves may be found 71 kilometres South from Bathurst and 122 kilometres North from Goulburn.

DISCOVERY AND EUROPEAN SOCIAL HISTORY

A brief summary of the recorded history of the Abercrombie Caves is as follows:-

- 1925 First mention of "the Bridge" early settlers and stockmen spoke of this. The McKenzie Family spoke of their visits there.
- 1831 Armed settlers mounted Police and the 39th Regiment fought a fierce gun battle for three days with the "Ribbon Boys." The result was three bushrangers killed and the remaining 10 including Ralph Eintwhistle were captured and eventually hanged in Bathurst.
- 1834 A party from Bald Ridges were recorded as visiting the Caves. 6 ladies and 10 gentlemen rode on horseback some 6 kilometres for their visit.
- 1842 The Abercrombie Caves were "officially" discovered by Surveyor-General Davidson.
- 1843 Surveyor Wells visited and is credited with discovery of Koh-i-noor Bushranger's Long Tunnel Cathedral and hall of Terpsichore Caves.
- 1844 William Charles Wentworth visited the Caves and is credited with the discovery of Cave #1 (King Solomon's Temple Cave).
- 1854 The Gold-mining community who were living in the district commenced use of the Grand Arch as a regular meeting-place.
- 1860 The original Dance Floor was built in the Hall of Terpsichore.
- 1868 The Caves were officially known as the Abercrombie Caves.
- 1880 The present Dance Floor was built in the Hall of Terpsichore.
- 1888 With the Caves becoming more widely-known and gradual destruction of decorations by visitors a temporary caretaker was appointed at a small salary to assist in protection.
- 1889 In July a group of local residents led by Mr. T.A. Smith Mining Warden and Police Magistrate took possession of the Caves on behalf of the Department of Mines. Samuel Grosvenor was appointed first caretaker and held this position for 19 years.
- 1893 Samuel Grosvenor reported the discovery of what is now believed to have been the Stable Cave.
- 1897 Jeremiah Wilson visited the Caves. He is credited with the discovery of the Grove Cave.
- 1899 On September 16 the Caves were officially declared as under preservation. Mr O. Trickett undertook a survey and produced plans of the principal caves.
- 1906 Mr O. Trickett produced a 12-page book on the Abercrombie Caves. 10000 copies were issued. The only known copy today is housed in the Mitchell Library.
- 1907 The Intelligence Department took over control of the Caves. Mother-In-Law's Breath discovered in 1906 was opened to the public.

- 1908 Mr William H. Grosvenor was appointed Caretaker and held this position for 6 years.
- 1914 Samuel Grosvenor was re-appointed as acting caretaker from February to June. Mr Hugh Young was appointed new caretaker on June 19 and served until September 1915.
- 1915 Samuel Grosvenor was re-appointed caretaker on October 1 and held this position until his death in 1920 on June 21.
- 1920 A temporary caretaker was appointed between June - September. In September Mr W. Stiff was appointed caretaker and held this position for 22 years until his death on January 11.
- 1931 The brickwork and security gate were installed at the Southern end of the Grand Arch.
- 1942 Robert (Bob) Coops was appointed the new caretaker on January 11.
- 1950 The major flood in recorded history occurred with levels being recorded almost 6 Metres up the Arch walls. This resulted in most improvements being washed away and the Caves system was closed for re-building of fittings for two years. During this programme four suspension bridges were built to give a flood-free track to and through the Caves system.
- 1952 Hon. C.R. Evatt M.L.A. the Chief Secretary officially re-opened the Caves on April 6. This occasion saw the first "Switch-on" of electric lighting.

#### RESERVE GAZETAL

Overall the Caves Reserve at Abercrombie extends across an area of some 2225 Hectares. R.#626961 for Public recreation was notified October 2, 1931, and March 26, 1971. Bird and animal sanctuary proclaimed December 18, 1931. R#29874 for Preservation of Caves was notified September 16, 1899. Wildlife Refuge #121 was notified May 5, 1967.

#### ASSOCIATION OF BUSHRANGERS WITH ABERCROMBIE CAVES

The bushrangers most closely associated with Abercrombie Caves are the Ribbon Gang which was led by Ralph Eintwhistle, and evidence of their occupation of the Bushranger Cave has confirmed this association. Eintwhistle arrived in Australia on convict transport, "John 1" in 1827. He was transported for life for stealing clothes in Lancaster in March 1827. He became a Government servant to a settler named John Liscombe who had a property about 12 miles south-west of Bathurst. Eintwhistle became a trusted servant of Liscombe and in November 1829 he was entrusted with a load of wool to take to market in Sydney.

On the way, he and a companion stopped for a swim in the Macquarie River downstream from the present roadbridge. They were seen by Lieut. Evernden who was accompanying Governor Darling on a tour of inspection of the district. Evernden was described by a close associate W.H. Suttor, as a "martinet of extravagant refinery" and was undoubtedly a very harsh man. He sent constables to apprehend Eintwhistle and his companion for swimming naked in the river. They were awarded 50 lashes each and Eintwhistle had his proposed ticket of leave cancelled.

After this, Eintwhistle was an altered man. He became very embittered and induced other convicts to take up arms, leave their masters, and join him in the bush. A group set off for Evernden's property for vengeance, but Evernden was absent and his overseer, James Greenwood became very arrogant towards Eintwhistle and his men, and as a result was shot and killed by them. This immediately made Eintwhistle a murderer in the eyes of the law. In 1830 the Governor enacted that anyone convicted under the Bushrangers Act under which Eintwhistle now fell would be executed "the next day but two" after sentence had been passed.

Eintwhistle and nine of his gang were captured by Capt. Walpole late in 1830 in the Abercrombie Ranges, and they were tried by a special sitting of the colony's Supreme Court under Chief Justice Francis Forbes on 27th October 1830. Their execution took place on 2nd November 1830 in Bathurst close to the now named "Ribbon Gang Lane" near the Anglican Cathedral.

During his bushranging activities Eintwhistle wore a hat covered in green ribbon after the style of a secret Irish rebel society known as the Ribbonmen. Hence the Eintwhistle gang became known as the Ribbon Gang.

Other bushrangers such as Ben Hall, Frank Gardiner and Jack Piesley are known to have been associated with the Abercrombie Ranges, but apart from Jack Piesley who it is said used the Long Tunnel for shelter, no evidence confirms their association with Abercrombie Caves.

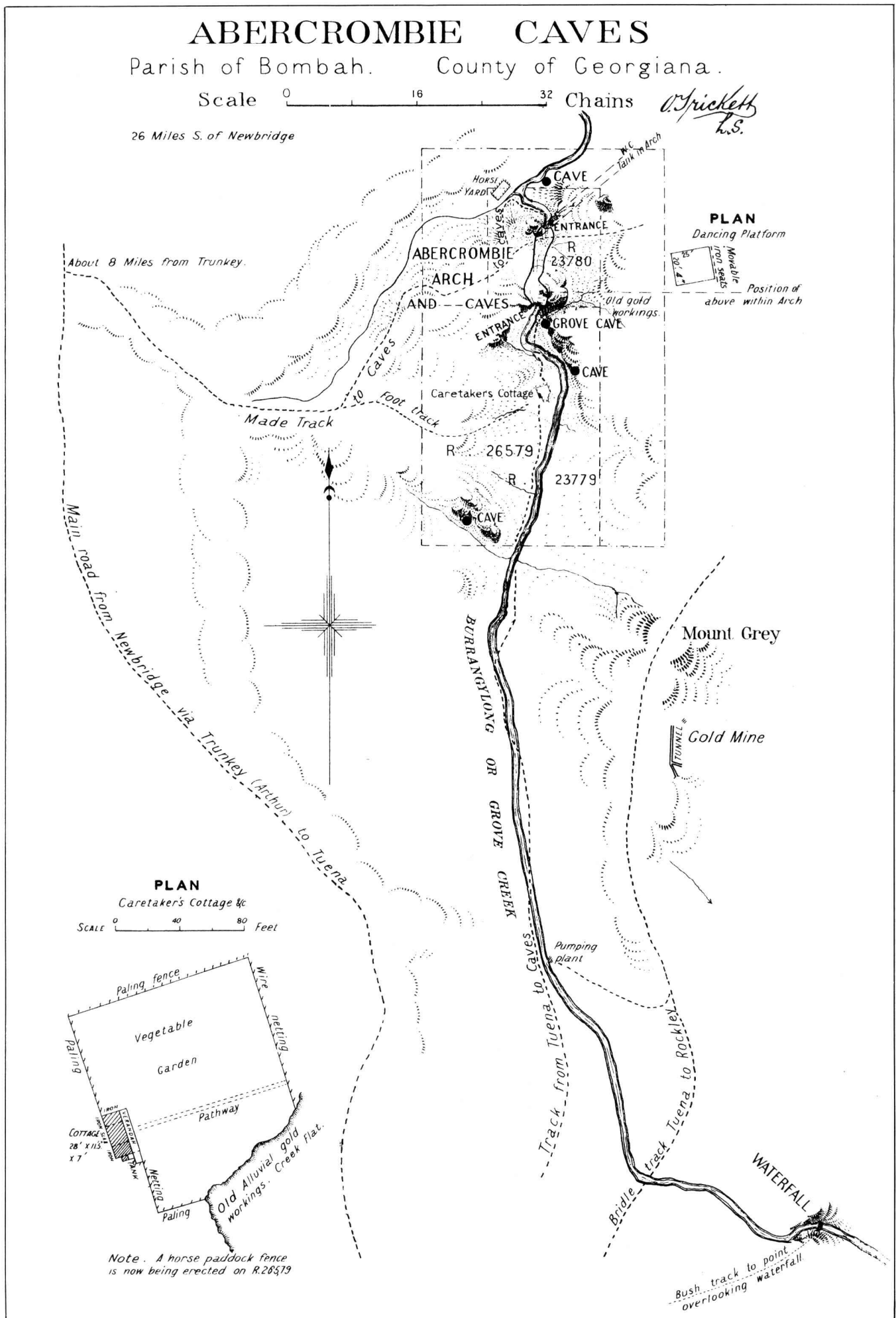


Figure 1. Oliver Trickett's map of Abercrombie Caves.

RECENT SPELEAN ACTIVITIES

Speleological activities prior to the late 1960's were comparatively minor. In September 1968, members of Metropolitan Speleological Society (MSS) then members of Blue Mountains Speleological Club (BMSC) undertook area familiarisation trips. This was the beginnings of considerable interest and documentation work, which has been, over the last 10 years, conducted mainly by Metropolitan Speleological Society, at times in association with Hills Speleology Club Limited.

Major highlights of this field work are:-

- 1970 B.M.S.C. located three Caves in the Southern Limestone, and reported a Cave in the Horse Yards Area.
- 1971 In conjunction with Highland Caving Group, B.M.S.C. used radio direction equipment to locate a possible extension to Grove Cave. This dig was pursued, resulting in a small extension being entered. This extension later became impassable, and the dig was sealed to deter illegal Cavers.
- 1972 August saw earth resistivity studies undertaken in Hill Cave. False floor was found at depths ranging between 1 to 3 metres below the silt floor.
- 1973 "Creek Cave", situated some 3 kilometres from the Arch, was discovered and mapped. This Cave is formed in shale. M.S.S. took core samples from the silt floor in Long Tunnel.
- 1974 May saw M.S.S. commence work on a plane table survey of the area. This project was completed in February, 1976.
- 1975 September trip resulted in the "Bushie" dig being commenced. This dig is still progressing at the time of writing.
- 1979 August saw a Time Capsule placed in The Grand Arch. M.S.S. collated information for inclusion.
- 1980 December trip used R.D.F. equipment to locate the end of a Cave which is located some 7 metres above Creek level in the Eastern wall of the Arch. This location is directly beneath a large sinkhole atop the Arch.
- 1981 January project was the commencement of a bone dig near King Solomon's Temple. Bone material was identified by the Australian Museum, and Channel 8, Orange tele-filmed this dig in May.
- 1982/83 Saw members of M.S.S. and H.S.C. (L.) reporting on Caves at Western Abercrombie. Invertebrates were studied at Abercrombie and reported on, copy attached (Appendix "A") and a Cave at Western Abercrombie situated on private property was gated.
- 1984/85 Saw M.S.S. compiling a Phototag register of the Caves at Abercrombie, and the development of a computer database of known Caves. Mapping work is continuing in conjunction with this on-going project.

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THE HISTORY OF WOMBEGAN CAVES 1828 - 1985

Mike Chalker and B.S. Nurse

It is possible that the Wombegyan area was known to squatters before its first recorded discovery by white men in 1828. It was certainly known to the aboriginal tribe of the area, and had a place in its dreamtime. The Arch and surrounding area would be regarded as a sacred site if any of the aboriginal tribe were alive today.

Wombegyan Caves was in the Gundungurra tribal area, which encompassed the Burragorang, Katoomba, Picton, Berrima, Taralga and Goulburn areas. R.M. Mathews (1908) describes a legend concerning the Wombegyan Caves which he obtained personally from a few remaining members of the tribe. The tale was about "Gu-rang-'atch", a mythical being, part fish and part reptile. To escape "Mir'-ra-gan", the legendary tiger cat, Gu-rang-'atch left one of the camping sites, at the junction of the Wollondilly and Wingecarribee Rivers. He burrowed under the range from Jock's Creek, re-emerging inside the "Wam'-bee-ang" (which was called Whambegyan by white people). Mir'-ra-gan followed Gu-rang-'atch and over took him at Wam'-bee-ang. Mir'-ra-gan did not want to go into any of the subterranean passage, so he went up on top of the rocks and dug a hole as deep as he could go, and then prodded a long pole down as far as it would reach. The weather worn 'pot holes' on top of Wombegyan Caves are said to have been made by several such unsuccessful attempts by Mir'-ra-gan to catch Gu-rang-'atch, who eventually escaped to "Bin-noo'-mi", the present Jenolan Caves.

Early explorers in the Southern Tablelands are known to have passed near the Caves. Wilson, Barrack and Roe terminated their exploration in January, 1795 at Bulleo. Wilson was an escaped convict who had lived with the aborigines. As punishment he was sent on the exploration, and was accompanied by aborigines, who may have told him about Wombegyan. No mention is made of this in his report. In 1802, Barrallier, also accompanied by aborigines, is known to have reached a point some 16 miles from Wombegyan as described in his 'Embassy to the King of the Mountains'. In 1822, Thomas Taylor and James MacArthur entered the area in search of new cattle stations and fixed on a site where the Taralga Road crosses the Tarlo River. About this time James and William MacArthur and Captain Lachlan MacAllister settled near Taralga.

The first official report of the existence of the caves at Wombegyan was made in 1828 by John Oxley, the Surveyor General, who was searching for grazing land for John MacArthur. In the years following, various notable personages made expeditions to the Caves. Charles MacAlister visited there in 1839 when two chambers had been explored. Conrad Martens, a well known colony painter, apparently stayed at Arthurliegh, Hannibal MacArthur's homestead on the Wollondilly River. From here he visited Wombegyan and made a sketch of the Church Cave (present day Victoria Arch) in December 1841. A painting from the sketch was completed later and hangs in the Dixon Gallery. Harden S. Melville visited Wombegyan sometime between 1842 and 1846, and a sketch of the Church Cave appears in 'Sketches in Australia'. Significant in the sketches of Melville and Martens are aboriginal figures: are they fakes to enhance the sketches or was the area still inhabited by aborigines at this date?

It has been reported that Maranda (or Miranda), the tribal king after whom one of the grottos was named, was killed in 1844 whilst fighting against the Burragorang Blacks.

The Rev. J.S. Hassal (1902) describes his excursion to Wombegyan Caves in about 1842. He started from Camden with seven other people and visited the Church, the only part of the Caves seen. In the brochure "History of Wombegyan Caves" it is mentioned that in 1842, a clergyman, Denning, made the first recorded entry into the dark section of the Caves. In 1862 Dr Cox describes a trip to this area and trips through the 'Whambegyan Church', 'Fig Tree Caves' and a visit to the 'Waterfall on Wombegyan Creek. Mr Henry Oxley was described as an excellent guide and friend. The signatures of Oxley and Hassall 1862 were noted in The Old Cave (Victoria Arch) and probably date from this trip.

In 1864 Surveyor General Davidson instructed Surveyor Deane to reserve land from lease and on 2nd February, 1865, reserve no.8 of 650 acres was notified at Wombegyan Caves for the Protection of Caves. In the same year Charles Chalker was reported to be caretaker of the Caves. He apparently lived in a cottage located at the present site of Steetley's Quarry. In 1868 the 'Illustrated Sydney News' and the 'Australian Journal' both published articles about Wombegyan Caves, both illustrated with a sketch by M.S. Moses. In this year Mr Charles Nicholas Chalker was officially appointed 'Keeper of the Caves' at Wombegyan.

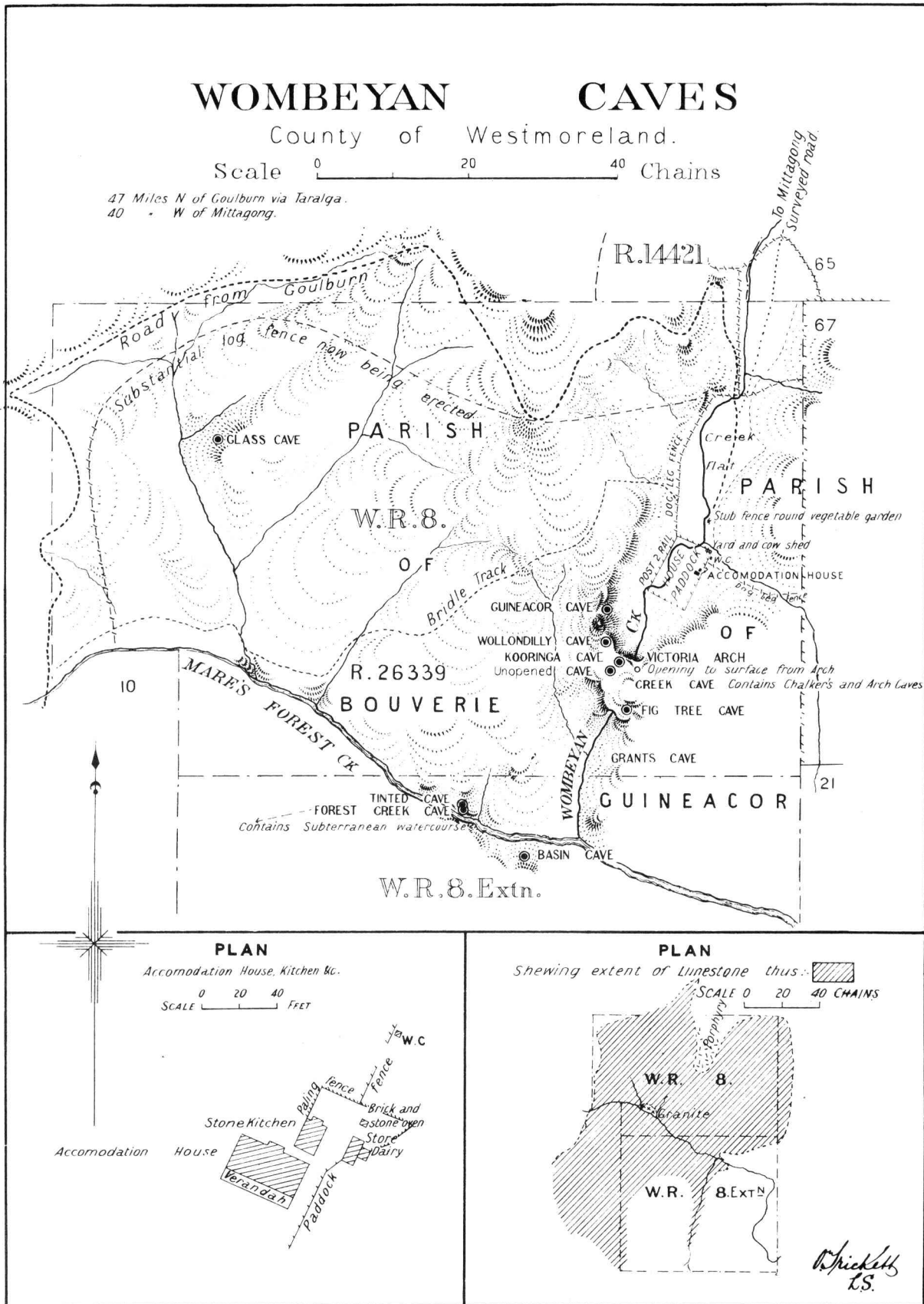


Figure 1. Oliver Trickett's map of Wombeyan Caves

In 1874 the N.S.W. Department of Mines was formed and took over all responsibility for caves in New South Wales. It was not until 1879 that Wombeyan Caves were mentioned in the Annual Reports of the Department, when Lamont Young reported on improvements, the preservation of the caves and the convenience of visitors. At this date, access was made by a vehicle road and bridle track to a free selection two miles from the Caves. Access from here was on foot or horseback. The two caves then known were the Victoria Arch and Basin Cave.

The next mention of Wombeyan Caves was in 1883 when Mr Harrie Wood, the Undersecretary for Mines, reported that plans were being made to effect improvements at Wombeyan.

In 1885 T.W. Edgeworth David furnished a supplementary report to that of Lamont Young. 'The caves may be reached by two routes, either from Goulburn....or Mittagong. The former is generally preferred by tourists. A coach drive of 30 miles along a good road brings the tourist to Taralga. From Taralga there are three ways to the caves, two being buggy road and the third a bridle path. The best buggy path is that which passes through Richlands making the distances from Taralga to the caves 19 miles. The second buggy road, which is rough and hilly, must shorten the distance by about 4 miles, while the bridle path reduces it to about 12 miles. At a distance of 8 miles the two buggy tracks converge on the summit of the Main Coast Range 3200 feet above sea level. At two miles from the caves the track reaches Queen's Gap where previously the remainder of the trip was performed by foot or on horseback.' At this time the Government had built a buggy road down the hill to within half a mile of the caves, and Edgeworth David in his report says that he inspected the Basin Cave (The New Cave) and Victoria Arch (The Old Cave). The area was still under the custody of Charles Chalker. Thomas Michael Chalker started as guide in this year.

In 1887 W. Anderson reported that plans had been prepared for a house and W.S. Leigh, the Superintendent of Caves, reported that there were about 152 visitors. In the following year T.M. Chalker discovered a new cave at Wombeyan Caves. 'He was bringing the cows home one frosty morning, when one of them put her foot in a small hole from which vapour issued. The hole was enlarged and with a rope attached firmly to his body, he descended the opening to discover a wonderful new cave'. Later, during an inspection by W.S. Leigh, Chalker discovered an extension that revealed the first section. The tender for the erection of an accommodation house was still conditional, but it was considered that its construction would probably proceed without delay.

Finally, in 1889, a good accommodation house was built. Leigh reports the discovery of a new cave found in 1888. The road to Taralga was completed in 1890 and visitors could now drive to the accommodation house. A proposed road to Bowral was being surveyed. Tenders for iron work and other facilities for the newly discovered caves were called.

The caves discovered by Chalker were improved and opened to the public. An extension to the Caves Reserve of 1000 acres for the purpose of 'a water supply and motive power' had been recommended and notified. The land runs parallel with and embraces an area 20 chains wide on each side of Wombeyan Creek. Proposed extension from the Wollondilly River to the Caves of the Bowral-Caves Road had surveyed but further work had been stopped.

By 1892 further improvements to the new cave had been approved and tenders were called for the supply of necessary iron work. Work on the proposed extension of the road from the Wollondilly River to the caves had not yet commenced. The extension of the road was surveyed in 1891 but construction was postponed because residents of another part of the district proposed another route which would tap the southern railway near Marulan. It was also proposed to connect Jenolan and Wombeyan Caves with a road. Survey was commenced on a route marked, the distance being 45 miles, 55 chains. Another cave (Guineacor) was discovered by Mr P. Kelly of Taralga and further explored by T.M. Chalker, the Keeper. This cave is situated on the brow of the hill near Wollondilly and Koringa Caves, only two chains from the latter. Mr Leigh considered the cave would prove a good addition to the series of caves shown to the public and he recommended that it be opened.

In 1893 the intention to open the Guineacore Cave was not proceeded with due to lack of funds. Instead, improvements to Wollondilly Cave were carried out and the area in front of the accommodation house planted with trees. The horse paddock was increased in area by 20 acres.

The visitors at that time were thoroughly satisfied with the facilities at the caves but were somewhat scathing about the quality of the approach road. In 1894 two men were engaged for two weeks to carry out some necessary improvements. As usual much of the work on the other improvements was held over due to lack of funds. A number of trees provided by the Forestry Department were planted in front of the accommodation house. Enquiries regarding the Bowral-Caves Road indicated that the Works Department had done nothing beyond surveying the proposed extension. Two extensions were discovered in the Wollondilly Cave, one branching off from the 'Cathedral' and the second extending in a northeasterly direction from the 'Pine Forest'.

In 1895 two men were engaged for four weeks to carry out necessary work in the Wollondilly Cave and the Fig Tree Cave. The accommodation buildings were repainted and generally improved inside and out. In 1896 the lack of available finance again led to

only sundry improvements being carried out at Wombeyan. The position of Superintendent of Caves of N.S.W. was abolished and the supervision of limestone caves in the state was taken over by Oliver Trickett in addition to his normal as Geological Survey Draftsman. In this year T.M. Edgeworth David published his report of a much earlier visit (1885) to Wombeyan Caves. In it he discusses the geology of the area and inspections of the Old (Victoria Arch) Cave and the New (Basin) Cave. There was a new discovery by T.M. Chalker of a cave with a triangular entrance and it was given the tentative name of the Arches (Tinted Cave). Broom reported on a bone breccia deposit.

Trickett by 1897 was now fully in charge of limestone caves and spent much of his time in mapping the caves and describing the areas. At Wombeyan he mapped the Caves area and produced a map of the Wollondilly cave. The entrances of the two new caves (Tinted Cave) up Mares Forest Creek were made more accessible to visitors by construction of wooden ladders. One of the caves was improved by the fixing of a door and some wire rope. The caves shown on Trickett's map of the time are Glass, Wollondilly, Koringa, Victoria Arch, Creek (containing Chalkers and Arch Cave), Fig Tree, Grants, Basin, Tinted, Forest Creek and an unopened cave. The reserve was extended to 1250 acres for the preservation of caves and from annual leave on 7th August, 1897.

Two labourers were employed in opening up the Wollondilly Cave for visitors in 1898. In the caves area a blacksmith's shop was erected T.M. Chalker again made the important discovery of the year by finding the Junction Cave. The cave's discovery was reported by Trickett, and a map was drawn.

In 1899, finally, the well graded road was opened between Bowral and Wombeyan Caves, allowing easy access from Moss Vale and Mittagong. It is thought that the road tunnel cut in sandstone on the Wombeyan-Mittagong road was constructed at this time. The previous main route from Goulburn via Taralga had also been improved by a well graded deviation. An excellent track from Caves House to the Main Cave (Victoria Arch) was built at a cost of 32.18.0. The Public Works Office supplied a new footbridge. The most expensive item constructed at Wombeyan that year was a stable 42 ft by 16 ft at the cost of 98.15.4. Plans were drawn for additions to the accommodation house. In this year Trickett produced Cave surveys of the Wollondilly, Guineacor, Koorringa, Creek, Victoria Arch and Fig Tree Caves. The reserve was changed from exempt annual lease to that of exempt annual sale on 27th May, 1899.

In 1900, during the absence of the caretaker, an acting caretaker was employed at the cost of 25 s. per week. The new additions to the accommodation house were erected and the estimated cost was to be 1250. The footways in the caves were improved and the formations protected by wire at a cost of labour 114.16.0 and 70.0.1. A footbridge provided by the Public Works was erected over Wombeyan Creek at a cost of 3.17.0. In July there were no visitors due to falls on the roads from heavy showers.

In 1901 the accommodation house was finished and considerable improvements to the caves were made. An acting caretaker was employed for 9 days. There was a deluge on the 21st January which caused an immense amount of damage. A new footbridge had to be erected across Wombeyan Creek. Roses were planted around the Caves House. A new branch of the Wollondilly Cave was discovered by the caretaker in January. This was surveyed and so was the Basin Cave. 1902 saw furniture being placed in the Caves House to satisfy a long required convenience. Extensions were opened to the Wollondilly Cave in 1903. In July of that year Trickett reports the discovery of the Bouverie Cave. After its discovery two men were employed for a week to make access to it easier. However, 130 feet into the cave the passage was made so dangerous by loose rock that the workmen stopped further attempts to open up the cave. Trickett surveyed the Bouverie Cave.

The most important development in 1904 was the opening of the eastern entrance of the Wollondilly Cave, making it possible to traverse the extensive beautiful series of caverns without retracing one's footsteps. In 1905 the ladders at the entrance of the Wollondilly and Koorringa Caves were regraded. Caves House was insured. An endeavour was made to advertise Wombeyan Caves by issue of 5,000 broadsheets and 5,000 leaflets illustrated with views. The "Guide To Wombeyan Caves" was at the printers at this time.

In 1906 the Bullio Cave was developed by two labourers. They also formed a path to the Basin Cave and improved the pathway to the Creek Cave. The new track to the Basin Cave was well graded and more convenient than an old precipitous pathway. The Bullio Cave seems to have been developed in the same year it was discovered. Trickett reports that the cave is not very large but contains interesting formations on the roof of one cavern. A shaft about 60 feet was not explored. The Guide Book to Wombeyan Caves was issued early in the year and favourable received. A Technical College teacher in cooking was sent to the Caves in December to give hints in better catering. One thousand trout were released in Mares Forest Creek by the Fisheries Commissioners. The caretaker was made a special constable and trustees were appointed to the area.

1907 was the year that the Intelligence Department took over the control of the Caves from the Mines Department. Temporary access to the Bullio Cave was provided by two labourers who were employed for one month. In this time four ladders and seven iron ladders were placed in position and some filling and excavation carried out. At this stage Trickett supplied a sketch of the explored part of the cave which seems to cover all of the present known cave. Mathews published an article on the mythology of the Gundungurra tribe which mentions the formation of Wombeyan and Jenolan Caves. The years



1908-1911 were undistinguished, with improvements being made to various caves. A track was cut to the Junction Cave and progress was made on the development of the Junction Cave. In 1909 the Reserves R26339 and R29402 were revoked on 24th February, 1909, and Reserves R43616 from sale and R43167 from lease generally for the preservation of caves, were notified on 24th February, 1909. The Trustees were E.P. Pittman, T. Furber and R. Hunter.

In 1912, Trickett reported that sufficient progress had been made with work in the Junction Cave to enable visitors to inspect the main caverns. A pump was erected in the well in the vegetable garden, from which a fair supply of water was available for cultivation. In 1913 further chambers of the Junction Cave were made available for inspection.

In 1915 Baker noted that a white sacchoroidal marble occurred at Wombeyan in enormous quantities but as a rule was somewhat coarse. In the years 1915-1917 Trickett continued his supervision and recommendation on development of caves in the area for visits by the public. In 1918 Trickett in his spare time completed models from his surveys of the Basin Cave at Wombeyan which were exhibited in the Mining Museum. He then started work on models of Fig Tree and Creek Caves.

In 1919 Trickett retired from the Geological Branch. In private time he completed surveys of the Kooringa and Wollondilly Caves and from these produce models also exhibited at the Mining Museum. The important marble deposits at Wombeyan were again mentioned but these were so far unprospected.

Wombeyan Caves continued as a tourist attraction open to the public during the 'twenties. In 1925 George Brown took over as caretaker from Thomas Michael Chalker who was retiring. Chalker had held office since 1885, a span of 40 years. Brown was to be caretaker for 10 years, until 1935. In 1926 the caves were first wired for electricity, connections being made to Wollondilly, Junction and Kooringa Caves. The Power House was connected to the caves in November, 1928. The power was generated using an alternator and motor.

The Accommodation House with all its records and contents was destroyed in a fire on 19th May, 1934. During the period 1935-39 a succession of caretakers was seen at Wombeyan: Backett, O'Connor, Len Wilcox and Archie Tate. Les A. Brown took over in 1939. In this same year the Caretaker's Cottage and the Post Office were erected. On 31st July, 1941 a lease (ML2) was granted for mining marble.

Other noteworthy events: a major flood in 1944 and the erection of the guides cottage in 1947. In 1948 the planting of exotic trees in the reserve was commenced. On 11th January, 1948, C. Stiff started as engine attendant, and, upon the resignation of caretaker Brown, was appointed caretaker on 4th February, 1948. A major flood occurred in March 1950, and a 4 inch water supply was constructed on Mares Forest Creek. It was connected on 16th December, 1950. The present tennis courts were erected in 1952, and the Kiosk was opened on 25th August, 1954.

The first visit to the area of a recognised speleological society was in 1955, by the Sydney University Speleological Society. Plantation of exotic trees was completed in 1956, the same year in which a major flood occurred in February. In July, 1957 an extension was discovered off the river in the Junction Cave by a group from Sydney Speleological Society. The new discovery is the largest known cavern at Wombeyan and was named the Olympic Cave. It is now generally known as the Olympian Cavern. During the weekend of June 4-5, 1960, divers Brian Weston and Ben Nurse swam the 160 feet siphon between Olympic Cave and Fig Tree Cave.

In 1957 Wombeyan was again visited by S.U.S.S. which produced a detailed article on the area. The Post Office was removed from the Reserve in 1958. In 1959 an investigation of some of the fauna of the area was carried out. In 1960 the weatherboard toilet blocks were completed. On 22nd July, 1960 a mining Lease (ML4) was granted for 20 years (Dept. of Mines 1981). In 1961 the rewiring of Mulwaree, Wollondilly, Junction and Kooringa Caves was commenced. 1961 also saw the worst flood recorded in the area: the tennis courts were destroyed, and the bridges and sports area covered with silt. On 7th March, 1961 ML3 was granted to Industrial Rock Mines for 5 years. In 1962 Mulwaree Cave (part of Wollondilly) was opened to the public, and the rewired sections of the Mulwaree, Wollondilly, Junction and Kooringa Caves were connected. The horse stable was demolished.

In 1964 the track to the Fig Tree Cave was widened from 3ft to 9ft. Also in 1965, it was recommended that the Glass Cave be revoked from ML3. On 28th July, 1966, ML2 lease was extended for 5 years and transferred to Melocco Bros. On 28th September, 1966 ML4 was transferred to Melocco Bros., and ML3 was renewed to 7th March, 1971. In 1967 the bridge over the Wollondilly River at Goodman's Ford was completed, removing the restriction to visiting Wombeyan via Mittagong during heavy storms. In 1968 the Fig Tree Cave was reopened after closure for extensive alterations. In 1970, work by speleological societies in the area was fairly extensive: cave numbering was carried out.

The Department of Mines informed Sydney Speleological Society that the area containing the Glass Cave was to be excluded from ML3, and that mining was to be contained within reduced area unless permission was granted by the Minister of Mines. During 1970-71, 32,263 people visited Wombeyan. The caravan park was officially opened by the



Minister for Tourism, Mr E. Willis, on 25th March 1972. This year also saw a record number of visitors enter the Caves, 35,252. In December 1973 the stone bridge over Wombeyan Creek was completed.

In 1974, the Communal Kitchen was opened and the water supply from Wombeyan Creek was completed. An additional toilet block in the camping ground was opened. Sydney Speleological Society submitted lengthy report on Wombeyan Caves to the National Estate. Many Caves were located number and tagged. A large extension was discovered in the Bourverie Cave during surveying. The Wombeyan Caves Book was commenced in 1974 and the Tourist Bureau, upon being notified on this, gave permission to S.S.S. to visit the area for one year without permits.

In 1975, further cave tagging was carried out, and extensive water tracing was done using optical brighteners. Two major new caves were discovered, Tattered Shawl Cave and Sigma Cave. A submission to include Wombeyan Caves Reserve in the National Estate was submitted in 1975. 1976 saw an increase of visitors to 37,871. In July 1977, Fig Tree Cave was opened for the first time as a self-guided tour, the second in Australia (the first being Glory Hole at Yarrangobilly Caves).

In summary there are many notable gaps in the history of Wombeyan. I hope that the history presented at this seminar will encourage much more history to be revealed.

#### ACKNOWLEDGEMENTS

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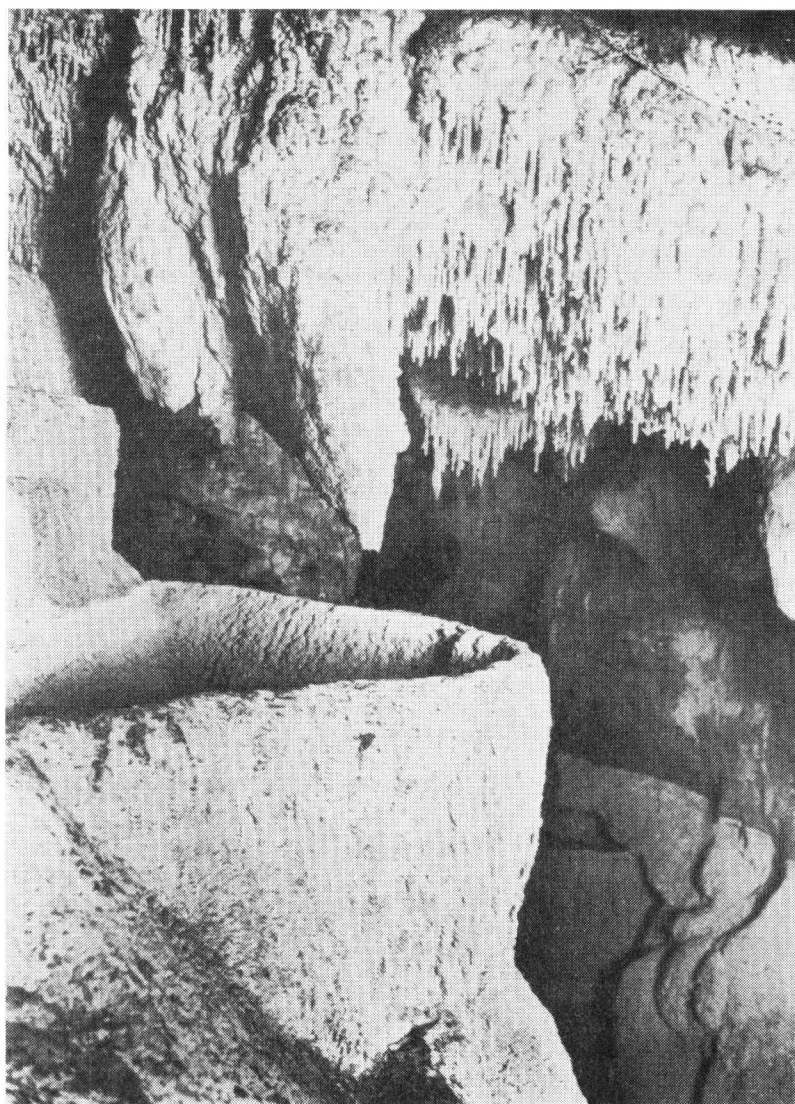


Plate 1. The Basin, Wombeyan Caves; photograph by Oliver Trickett, probably taken around 1900

THEMES IN PREHISTORY OF THE NULLARBOR CAVES,  
SEMI-ARID SOUTHERN AUSTRALIA

Adrian Davey

INTRODUCTION

The 200,000 square kilometre Nullarbor Plain is a large and relatively inhospitable tract of semi-arid land on the southern coast of Australia. It is also one of the world's largest and probably oldest karst landscapes. It contains a substantial number of caves, some of them very large.

The sheer size of the plain together with its lack of surface water have made it a powerful ecological, physical and psychological barrier to the dispersal of evolving plants and animals and to human trade, settlement and communications.

Because the plain is otherwise easily perceived as featureless, the more obvious of the caves have played an unusually prominent part in human exploration and occupation of the region.

Aboriginal prehistory of cave exploration and use extends over many millenia. Two themes are especially interesting: quarrying underground as one of the earliest, and the role of water and shade in an inhospitable environment as the most persistent.

The advent of European, Afghan and other cultures on this part of the southern coastline during the last four centuries has diversified the relevant historic themes. Victorian British discovery and exploration is the first stage in modern recognition of the caves, although long after the region was first discovered. The next and perhaps most remarkable phase brings together developments in Australian aviation and the adaptation of a grounded mariner to the land and air. Eventually the action moves on to development of organised speleology.

Other sub-themes in human interactions with the caves in this large waterless area include what may turn out to be either art or vandalism. They also include attempted grand solutions to the problem of water, by improbable engineering, as well as adventures of tourism, recreation and science.

QUARRYING UNDERGROUND

The earliest confirmed role for the Nullarbor caves is as a source of raw materials for stone-age technology. The commodity in question was chert ("flint") which occurs in irregular nodules within the Wilson Bluff Limestone - the lowermost of the three major limestone units of the Eucla Basin karst (Ludbrook 1958, Lowry 1970). At least three of the larger Nullarbor caves were the site of ancient underground quarries (Marun 1974, Wright 1971). That in Koonalda Cave N4 was in use between about 22,000 and 15,000 years BP (Wright 1971). The material evidence of the quarrying persists in the form of broken blocks of chert, sticks, fire hearths and other debris preserved in the cave floor sediments. In both Warbla Cave N1 and Weebubbie Cave N2 there are quarried exposures of chert still visible in the cave walls.

The difficulty of quarrying underground must have been considerable. Even in the best-lit of the three known quarrying sites, Warbla Cave, access to the chert involved a very precarious climb down the sheer walls of an intimidating 20m deep collapse doline. In Weebubbie and Koonalda caves, quarrying took place in virtual darkness.

At the time when quarrying is known to have taken place in Koonalda Cave, sea levels were lower because of glaciation elsewhere. This would have left the former coastal cliffs stranded inland and separated from the ocean by a broad coastal plain. Ramps of aeolian sand against the stranded sea cliffs may have obscured the chert which should otherwise have been readily accessible in the cliffs (Wright 1971, quoting personal communication from J.N. Jennings). Thus Aboriginal people may have been forced to exploit underground sources, despite the difficulties of access and lighting.

With the eventual return of sea level to its modern position at something like 10,000 years ago, fresh erosion of the old coastal cliffline would have exposed abundant

chert at the surface. Thereafter, it is likely that surface sources were quarried in preference to underground.

We know that in European contact times, Aboriginal people from a substantial distance from the Nullarbor obtained chert from the Wilson Bluff surface quarries (Tindale 1976), but we do not know how far afield the material which was quarried underground at earlier times may have been dispersed.

The chert quarrying industry in Nullarbor caves lasted for quite a few thousand years, but had already come to an end by ten thousand years ago or more. By comparison, the duration of modern activities pales to insignificance.

#### WATER & SHADE IN AN INHOSPITABLE PLAIN

The modern visitor to the Nullarbor Plain, especially in summer, can hardly avoid being struck by the lack of shelter from the sun and heat. Surface water is rare, persisting only for short periods after infrequent and unreliable rain in rockholes. The rockholes are karst solution pans and basins, usually of no more than a metre or two in diameter and up to a metre deep. They are commonly surrounded by a broad pavement of indurated limestone which serves as their catchment. Because of the precious water they usually retain for a few weeks or sometimes months after rain, the rockholes were by far the most economically important of all karst features on the Nullarbor for Aboriginal people.

Caves too contain water. Several of them descend to the water table where there are lakes of varying size. The bulk of the water is hard and generally undrinkable, but it is not uncommon for there to be a "cream" of relatively fresh water on top of the saline for some time after rain. Despite this, there is no evidence that Aboriginal people regularly used the water from the cave lakes, whereas there is abundant evidence of artefact scatters and hearths surrounding many of the surface rockholes.

The rockholes were the principal, possibly the only, means of Aboriginal people crossing the arid northern part of the Nullarbor Plain. Johnston (1941) documents one route connecting the head of the Great Australian Bight on the southern coast right across the eastern Nullarbor Plain and into the Great Victoria Desert, along a succession of rockholes. Many of these routes would only have been trafficable in good seasons.

Especially during summer, the caves offer the only available shelter from the heat of the day. Systematic studies of Aboriginal use of the Nullarbor caves for shelter have not been undertaken but there is substantial surface evidence at many caves to suggest that the caves were so used.

The evidence underground of Aboriginal shelter in caves is of several kinds. In some caves there are artefacts, mostly of flint but sometimes of rocks from well outside the Eucla Basin and occasionally of wood. Firebrands of charred stumps of Bluebush (the chenopod shrub *Maireana sedifolia* which is the dominant in the Nullarbor Plain shrubland vegetation) are also found in several places, although sometimes it is hard to rule out a relatively modern origin for these (post contact or European).

In a handful of caves there are apparently old cairns which seem to be built in strategic positions to catch water from drips on the roof. Whether they simply served the utilitarian purpose of indicating reliable drips, or were used as a collecting stand for a container, or else have some other significance, we don't know.

Some of the most intriguing evidence of aboriginal shelter in caves takes the form of cave art. By far the most abundant kind is the red ochre hand stencil (hundreds of stencils at twenty or more sites - Davey & Frank 1984), almost always in shallow overhangs or caves and rarely in darkness. Strangely, such stencils appear to be unevenly distributed on the plain, being confined to the eastern half. There is a possible correlation of these sites with the cross-plain routes referred to above. Whether their significance is "art" in the sense that modern westerners might understand it, or connected with ritual or other formal cultural affairs, or rather more like graffiti or vandalism in their cultural origin is not clear. Irrespective of the original cultural meaning of such hand stencils, they do suggest that Aboriginal people quite commonly visited the caves. Shelter from the heat of the day seems to me to be as likely an explanation for entering the cave as any other.

Another remarkable form of art in Nullarbor caves takes the form of engravings. These are of two types. The first and probably oldest accompany and are presumed to be contemporaneous with the flint mining in Koonalda Cave and consist of sub-parallel markings made with the fingers in the smooth powdery surface of the cave roof (Edwards & Maynard 1967, 1969; Gallus 1968; Wright 1971). The other type are probably not of such antiquity and are made with sharp sticks or flakes of stone. Unlike the finger markings, which are only known from Koonalda Cave, this latter type is widely scattered in a small number of caves along the southern edge of the plain (Davey 1984, Davey & Frank 1984). As with the hand stencils, we have little idea of the cultural significance of the engravings other than that they are evidence of Aboriginal people having visited the caves.

The role of caves in the life and culture of the Mirning people who occupied the southern Nullarbor Plain at the time of European settlement has not been properly studied, so we do not know whether the evidence of Aboriginal entry to and activities within caves applies to the Mirning or to earlier Aboriginal occupants of the region. There are still a few Mirning people dispersed around various Aboriginal communities in South Australia. Serious investigation of the relationship original Mirning people may have had with the caves in this inhospitable part of Australia deserves higher priority.

#### EUROPEAN DISCOVERERS AND EXPLORERS

The southern Nullarbor coast was first charted by the Dutch navigator Pieter Nuyts in 1627 (Halls 1971), but the utterly desolate appearance of the land suppressed further European interest in the region for almost two centuries, when more detailed coastal investigations were made by the French and British (De Rossel 1808, Flinders 1814).

Most of the early land exploration was preoccupied with establishing an overland link between the settlements well to the east and west of the plain (Eyre 1845, Forrest 1875), or with finding lucrative pastures or water for grazing (Delisser 1866, Jones 1880, Tate 1879). The investigations of Tate and Jones were the first to record caves and other karst features, mostly in the south-eastern part of the plain, but none of these early explorations related to the caves as other than an incidental part of the Nullarbor scene. Tate's account is the first description of Nullarbor caves, but is unfortunately very generalised, without reference to any identifiable example; no specific caves are mentioned in his travels elsewhere in his description.

The first specific references to Nullarbor caves are those of the surveyor Jones (1880), who had been sent out to the Nullarbor Plain by the South Australian government to select a site for the first trial borings for water. He notes several unidentifiable blowholes and gives a brief description of a cave near Kudna Rockhole which is probably The Catacombs N20. He also gives a description of two "immennse" caves by the native name of Murrawijinie, although which two of the three Murrawijinie caves we know today (N7-9) he is referring to is not readily identifiable. Jones also describes Albala-Karoo blowhole (N171) as being 72 feet deep, and recommends that it be the site of the first trial boring for water. Such "boring" took the form of well sinking from the bottom of the natural blowhole. Jones description makes clear that the purpose of sinking the well was to obtain water of whatever quality to run the boring plant. The boring machine was to drill to greater depth, in the expectation of finding potable water.

The map accompanying Jones' report marks numerous blowholes and small caves, many of them difficult or impossible to identify today. Koomoolookbooka Cave N6, Bildoolja Cave N31, The Catacombs and the Murrawijinies are all named.

The implication from the accounts of Tate and Jones is that none of the larger collapse dolines or deep caves containing lakes had been discovered by the 1880s. Large cave entrances such as Warbla Cave N1, Weebubbie Cave N2, Abrakurrie Cave N3 and Koonalda Cave N4 were probably first encountered by local stockmen rather than the official explorers. It is also likely that the first people to enter and explore some of these larger caves were residents from the telegraph station settlement on the coast at Eucla. An anonymous account of 1900 in the *Eucla Recorder* describes an Easter holiday overnight excursion to "Albala Kurroo" cave. This is clearly not the Albalakaroo N171 of Jones' and modern nomenclature. From the reference to "Toogana" Rockhole along the way (Toolga on modern maps), the distances quoted, the description of "that gigantic hole known as the landslip" near their destination, and the description of the cave itself, it is clear that the cave then referred to as "Albala Kurroo" is the one we now call Abrakurrie Cave N3. The landslip they refer to is now known as Chowilla Landslip N17. This confirms at least that some of the very largest of the Nullarbor caves were known by late last century.

The first definite reference to Weebubbie Cave N2, which is closer to Eucla than Abrakurrie and might therefore have been discovered sooner but for denser vegetation, is in 1901, in the report of preliminary examinations of the country between Kalgoorlie and Eucla for the then proposed transcontinental railway (Muir 1901). Two excellent photos of the lake in Weebubbie which accompany this report are the first published of any Nullarbor cave.

It is also possible that Weebubbie is the cave referred to in a somewhat mysterious news item which appeared in Scottish and French journals at about the same time (Anon 1901 & 1905). The second of these, in the *Bulletin et Memoires de la Societe de Speleologie* - and which is a slightly different version, in French, of the first - comprises the first appearance of the Nullarbor karst in international speleological literature. The item itself is a little puzzling, for it describes the discovery in the Eucla district of subterranean lakes. These are said to be sixteen miles west of several others discovered previously. No caves currently known to us correspond very closely with this description, but it may refer to Warbla, as the earlier discovery, and Weebubbie (22 miles southwest of Warbla) as the later discovery.



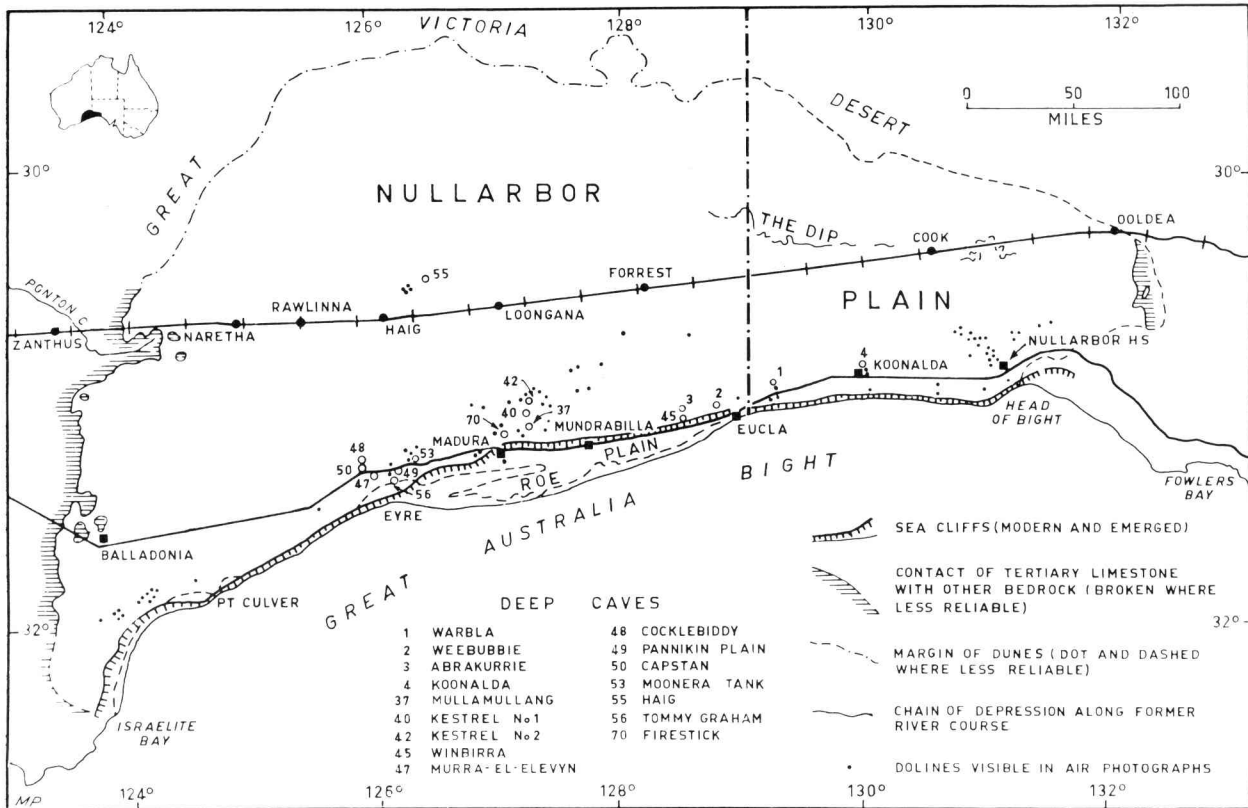


Figure 1. The late J.N. Jennings' map of cave sites on the Nullarbor Plain. Reprinted from Dunkley and Wigley (1967).

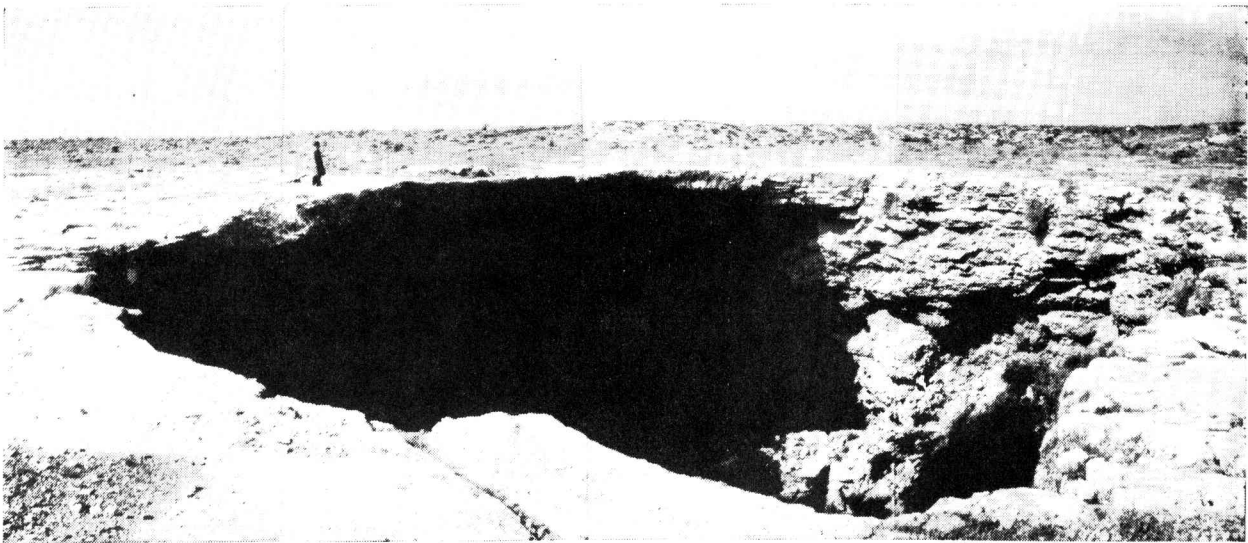


Plate 1. Collapse doline of Koonalda Cave in the Nullarbor Limestone. From Dunkley and Wigley (1967).



# A MARINER ADAPTS TO THE LAND AND AIR - MODERN SPELEOLOGY BEGINS

After the initial discoveries by early explorers and people based at the Eucla telegraph settlement, there seems to have been limited interest in the caves. That changed with the arrival on the scene in the 1930s of a remarkable man. Captain J. Maitland Thomson had been trained under sail and spent a great deal of his later working life around coastline of South Australia. In 1932, he says he heard a story of a great underground lake with water 300 feet below ground level and said to be over a hundred feet deep (Thomson 1947). Elsewhere he asys that he saw the inscription "Caves of the Catacombs" on a map (Thomson 1952)! Either way, his interest had been aroused and his marine navigation skills were adapted to the challenge of locating inconspicuous landmarks on a vast and nearly featureless plain. The first of what eventually numbered nine of his expeditions to the Nullarbor took place in 1933. Accompanied by only a few friends on most occasions, he progressively located and mapped many of the caves on the South Australian side of the Nullarbor. In particular, he relocated all of the sites documented by Jones (1880).

When BHP sponsored the establishment of the Spencer Gulf Aero Club in 1938, Thomson was the first pupil who signed on at Port Pirie, for he wanted to be able to charter a plane and fly to the Nullarbor in search of caves (Thomson 1979). He had already learned of the existence and location of what became known as the Diprose caves, in 1935, from Captain Diprose who was a pilot on a regular flight between Ceduna and Forrest. In 1939 Thomson persuaded the Spencer Gulf Aero Club to participate in his fourth expedition. They flew from a base at the new airstrip which had just been built at Nullarbor Station to permit the flying doctor to land. In the space of two and a half hours, Thomson found forty-two new caves.

The success of Thomson's explorations and the publicity given them (Anon 1936a&b; Graham 1939; Thomson 1947, 1950, 1952; Thomson & Hetherington 1948) prompted renewed interest in the Nullarbor at a time when organised speleology was just beginning in Australia. It also coincided with the arrival in Australia of geomorphologist J.N. Jennings, who quickly realised that the semi-arid karst of the Nullarbor Plain was one of Australia's most distinctive and interesting karst areas. Over the next thirty years, he made sure its significant features were interpreted to an international audience (Jennings 1961, 1962, 1963a, 1967a&b, 1983; Lowry & Jennings 1974).

Following the first conference of the fledgling Australian Speleological Federation in Adelaide in 1956, a major speleological expedition spent many weeks documenting the caves. Other expeditions and numerous major discoveries were to follow, especially in Western Australia which up until then had received less attention than the South Australian part of the plain. These culminated in the major exploration efforts in the enormous Mulla-mullang Cave N37 in the mid 1960s (Hill 1966). The bulk of the speleological work of the fifties and sixties, together with the earlier exploration, is summarised and synthesised in *Caves of the Nullabor* (Dunkley & Wigley 1967). More recent summaries include Davey 1978, 1984 and Wright 1971).

One interesting aspect of modern speleological instigation has gone unhe-raided for too long. In the early 1960s, the first aerial photographs of the Nullarbor Plain area became available, and J.N. Jennings undertook the formidable task of examining them for the Department of National Development and plotting the significant landform features. His plots duly led to further cave discoveries, especially by D.C. Lowry, who was then fortuitously undertaking extensive fieldwork on the Nullarbor Plain as part of a regional mapping and interpretation program for the WA Geological Survey (Lowry 1970).

When the first exhaustive list of Nullarbor caves and dolines (Hill 1967) was published in *Caves of the Nullarbor*, Hill carefully acknowledged the air photo interpretation contribution made by Jennings. But the reference Hill cites was not Jennings' original plotting (1963b) but instead a non-specific description by Jennings (1964) as to how he went about it.

In the early 1980s, in the course of recent resource management investi-gations, I came across the original manuscript of Jennings air photo interpretation in the archives of the Cave Exploration Group (South Australia). I duly checked the descriptions against the published list in Hill (1967). I was subsequently able to check many of them in the field, in the company of R.K. Frank, K. Mott and A.P. Spate, in 1982. What quickly became clear for the first time since Hill compiled the 1967 list was that many caves and dolines in the published list had been allocated numbers solely on Jennings' air photo interpretation and had never been visited on the ground. As we located and documented in detail Jennings site after Jennings site for the first time, we were continually impressed by the accuracy and completeness of his work. Although I haven't yet completed a proper inventory, something like 25 per cent of the sites published in Hill (1967) appear to have been first discovered by Jennings.

Without detracting from the remarkable achievements of Captain J.M. Thomson in a light aircraft and on the ground in the 1930's, it must be said that the greatest single contribution to the identification and documentation of caves and dolines on the Nullarbor Plain came from J.N. Jennings, armed with no more than air photos, a stereoscope, and his inspired faculties of discrimination and interpretation.

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THE HISTORICAL CONSTRUCTION OF NARACOOORTE CAVES

Elery Hamilton-Smith

INTRODUCTION

In 1845, Benjamin Sanders and his friend William MacIntosh set out to pursue a group of Aborigines whom they suspected had stolen Sanders' sheep. History does not seem to record whether that particular group of Aborigines were caught or not, but in the course of the pursuit, the Mosquito Plains Cave, as it was then known, was first discovered. The cave became a popular venue for local picnic parties, and then in 1858, Father J.E. Tenison-Woods wrote a description of for the South Australian Register, and this commenced to make it more widely known. In 1862, he also published (in London) a book which devoted many pages to a description of the caves, and, like many scientific writings of the time, speculated on the meaning of the sub-fossil bones in the caves. The caves came to be seen as a great natural wonder of particular import in the age of new enlightenment.

In the same year, the first of many New Year's Eve parties was held in the Mosquito Plains Cave. Shortly afterwards, on 12th. February 1863, Governor Dominic Daly visited it. His visit occasioned considerable festivity, including a Corroboree (of 52 Aborigines) and a Brass Band Concert. The Governor inspected several caves, and in one case was lowered by rope into a cave - probably the present Cathedral Cave. The Governor's visit was the first of many events which confirmed to South Australians that they, too, had a natural monument of great merit and interest.

At some stage, the major cave was re-named as the Blanche Cave, although this name did not seem to become widely used until revived in recent years.

The next Vice-Regal visit occurred in 1880, although by this time, insufficient Aborigines had survived and no Corroboree was staged ! Concerned people took this opportunity to impress upon the Governor and others that some action should be taken to avert further damage to the caves, as by now, they were very popular and had become subject to at least a degree of vandalism.

Accordingly, in 1885, the area surrounding the caves was proclaimed as Forest Reserve No. 11, primarily for the protection of the caves. A caretaker, one Daniel Battams, was appointed ; he was replaced in the following year by William Reddan, who remained at the Caves until 1919. He in turn was succeeded by W.A. Carthy for some 18 months, and then Robert Leitch was appointed and he stayed until 1948.

Meanwhile the reservation had changed its status, being transferred to the Tourist Bureau as a 'Public Pleasure Resort' in 1917. It had many changes of boundaries over the years, and in 1970 was re-dedicated as a 'National Pleasure Resort.' Finally, in 1972, the National Pleasure Resorts Act was repealed, and the Caves were placed under the management of the newly established National Parks & Wildlife Service as the Naracoorte Caves Conservation Park. Further boundary changes have occurred and will continue to do so for at least some time.

This paper will focus upon the role of Reddan and Leitch, who between them were responsible for some 59 years of the first 62 years of cave management at Naracoorte. Those who seek a more comprehensive narrative of events, both prior to the first reservation and since, should consult the Draft Management Plan document (S.A. : National Parks & Wildlife Service, 1986).

A GENIAL SON OF ERIN

These words were used by the Narracoorte Herald (1909) to describe William Reddan, who by that time had come to enjoy 'the respect and goodwill of the people of the district.' It is clear that he was a man of great energy and enthusiasm, with a strong sense of humour. He became famous as a cave guide, and did much to enhance the reputation of the Naracoorte Caves. He discovered a number of further caves, including both the Victoria and Alexandra Caves, both now popular show caves. He also took an active part in district affairs, being a founder of the Horticultural and Floricultural Society (of which his daughter was secretary for many years). At the same time, he was clearly a man of strong principles, and was respected for his determination to adhere to what he believed to be right.

He was required to establish a system of collecting payment for any guano taken from the caves for use as a fertiliser, but this was resented by local residents, who for years had been taking guano from at least five of the caves without any formality. Accordingly,

they resisted Reddan's control by entering the caves at night and 'poaching'. On becoming aware of this, Reddan sat up one night to watch the caves, and on seeing a wagon arrive, watched while the men with it collected, bagged, carried out of the caves and lifted onto the wagon a full load of guano. He then followed them to their farm before confronting them, and insisted that they not only return to the caves, but carry every one of the sacks back into the caves and empty them. Apparently the extent of 'poaching' diminished abruptly. (A. Needham, pers. comm.)

As a forester, Reddan planted trees - 19,300 *Pinus radiata*. Many remain to this day, and give a particular character to the reserve. It is said that his energetic planting at the caves with the consequent attractiveness of the reserve, gave the initial impetus to the first tree plantings in the streets of Naracoorte. He also established rockeries, planted bulbs (jonquils, daffodils and the like), erected a kiosk built in rustyle, and planted ferns, cannas, and geraniums (at least) in the caves. It is also clear that he was responsible for the Ivy and the Bridal Creeper, both of which were seen as suitable plants to adorn the walls of the immense dolines giving access to the Big Cave (as Mosquito Plains Cave was then known), but regrettably, the latter now constitutes probably the most disfiguring of the pest species on the Park. All of this planting program can be confidently attributed to Reddan, both from the literature (Murdoch & Parker, 1963 : 27,122) and from contemporary photographs and postcards.

Under his management, the caves reserve certainly became a popular venue for local residents ; the gardens were said to be as much an attraction as the caves themselves, while a picnic ground and swimming hole were established on Stony Creek at the Southern end of the reserve. Every effort was made to publicise the caves, and to attract visitors from further afield, and any visitor of importance to Naracoorte would be inevitably taken to see the caves.

The Big Cave (which was also called the Old Cave following other discoveries in the area) was made easier of access, with steps, a stone arch at the entrance, well-defined walkways and wooden handrails. There are also a number of large tables in the first section of the cave which were used to cater for parties in the cave, and the carved graffiti on these clearly indicates that they were built in Reddan's day. It is not clear who was responsible for the rustic seats (one survives) or for the elaborate system of pergolas (now vanished) on the surface. A recently discovered photograph, probably taken in the 1920's, shows the pergolas in obviously new condition, and this suggests they were either late Reddan or early Leitch, or, perhaps more likely, that they represent a second generation replacement of earlier structures.

In 1894, Reddan was successful in obtaining funds to employ six men to search for new caves, and to develop for public access any caves found as a result of the search. Probably the most active of these proved to be James Mason, whose name or initials appear on the walls of many remote corners of various caves at Naracoorte. Another was George Burford, but the names of their workmates seem to be lost.

Their efforts were soon rewarded with the discovery of the Victoria Cave in 1894. The name was decided upon during development, and relates to the Jubilee of Queen Victoria's reign which fell in 1896. The development arrangements involved digging a new entrance - which can still be seen, along with the ladder installed at the time - cutting pathways through the flowstone floor, placing the stalagmites removed during this process on display elsewhere in the cave, and enclosing the whole pathway system in an elaborate structure of steel pipe and wire netting.

This development was modelled upon the work of Jeremiah Wilson at Jenolan (A. Needham, pers. comm.) but it is still unclear as whether this was achieved by correspondence, by Reddan visiting Jenolan or by one of the Wilson family visiting Naracoorte. The result certainly bore a remarkable resemblance to the older installations at Jenolan, perhaps now best seen in the Jersey Cave. The development was completed and the cave opened to the public in 1897.

One interesting facet of this period is that Reddan and his colleagues were actually working in the cave during the earthquake of 10th May 1897. Although this damaged most of the buildings in the nearby township and elsewhere throughout the South-east (Murdoch & Parker, 1963 : 26-27), the group in the cave were completely unaware of it, and it caused no damage to the caves (A. Needham, pers. comm.).

Then, in 1908, Reddan and Mason, along with Agnes Reddan (later Mrs. Needham), dug out a depression near the Reddan residence and thus discovered Alexandra Cave. At the suggestion of one L. De Garis, a local citizen and leader in civic affairs, it was named after the then Queen to maintain continuity with the Victoria Cave. Again the cave was developed by Reddan and his colleagues, at a cost of some three hundred pounds, digging a new entrance and constructing the same safeguarding structure of wire netting and steel pipe. This time there was little need to cut away sections of floor, but in one place a tunnel through the bedrock had to be enlarged.

More significantly, Reddan constructed artificial pools below two clusters of stalactites, forming the famous 'Shower' and 'Mirror' displays. As with the garden developments, contemporary photographs taken prior to the official opening of the cave in 1909 show the pools already in place and establish absolutely that Reddan was



responsible, although a few photographs do show the 'Shower' without the pool. (Naracoorte Herald, 1909, and many postcards).

In order to attract public notice, it was decided that there should be a 'grand' opening ceremony. Unfortunately, the Governor was not available prior to the Easter holiday, and so in order to 'catch' the Easter tourists, a preliminary opening was performed by Walter Gill, Conservator of Forests, on 7 April, 1909. This was followed on 12th. May by a second and much grander ceremony performed by Governor, Admiral Sir Day Hart Bosanquet, K.C.B., C.V.O. Some 2,000 people attended ; 600 hundred candles were placed in Blanche Cave and magnesium lamps were used to show the new cave to the official party. A range of artifacts were prepared for the occasion, including a mirror with an ornate inscription "Cave Post Office" placed in the so-called Post Office area of Blanche Cave and a welcome archway of stained glass built by William Platt. (Parker & Murdoch 1963 : 122 ; Lewis, 1977 : 25-26) Regrettably, not only have these artifacts apparently failed to survive, but to date, we have not located any photographs of the day's celebrations.

Agnes Reddan (Needham) followed her father in becoming one of the well-known and highly respected residents of the district. She taught for many years at the Joanna School, performed with the dramatic society, was for many years secretary of the Horticultural and Floricultural Society, drove a T-model Ford until the 1960's, and had the bridge over Mosquito Creek named the Reddan Bridge in her honour. (Murdoch & Parker, 1963 : 103-4, 148)

On Reddan's retirement, his successor stayed only for a very short time, and was then followed by Robert Leitch. Regrettably, Leitch's contributions to the reserve are less well-known, and one of the few explicit recognitions of his work is the sign which proclaims the driveway connecting the Northern and Southern sectors of the park as being named for him.

#### AN ATHLETE OF NOTE

Leitch was already a noted athlete when he was appointed to the position at the caves. He held records in both walking and long-distance running. It is said that he would commonly run as far as 20 to 30 miles to a neighbouring town, play a football match, and then run home, often arriving before the vehicles carrying other team members.

One of his major contributions to the park was the planting of a range of native trees throughout the park. While Reddan's plantings had in large part been exotics, Leitch preferred Australian species, and so the Cootamundra Wattles and other non-endemic species which are to be seen today originate from his work. This in itself is a fascinating monument to his athletic prowess. The trees concerned are planted throughout the park, and up to two miles distant from the residence. Apparently Leitch, on rising each morning, would fill two large buckets with water, and run around his seedlings watering them.

Like Reddan, he was famous for his humour in showing visitors around the caves. Anyone who visited Naracoorte prior to its becoming a Conservation Park will probably recall the celluloid fish which were attached to the ceiling in such a position that their reflection would be seen by visitors peering into the pool below the 'Shower' display. It seems clear that this was one of Leitch's innovations. He would also place small dolls in the cave and encourage children to try and discover them, then he would tell them stories about the dolls.

Leitch was also a very conscientious man, and his family recall him working throughout whole nights in order to repair the generating plant so that there would be light for the next day's visitors. (Ray Leitch, pers. comm.) As a regularly visiting caver in the 1950's, I recall spending more than one night helping the then curator do the same thing to the same generator !

He continued the search for new caves, but is only credited with one discovery - in 1926, along with Len Gartner and Bob Haslitt, he discovered the Brown Snake Cave. Jack Farmer went to the cave immediately after its discovery and photographed it (Farmer, pers. comm.).

Another of his efforts was to arrange for the introduction of Koalas to the reserve in 1937 to create a further interest for visitors. Regrettably, the poor animals did not survive. It seems that he did what he could to maintain the heritage of gardens left by Reddan ; certainly much of Reddan's plantings survived into the early 1950's, but through a combination of neglect and deliberate removal since then, have almost disappeared.

#### THE NARACOORTE CAVES IMAGE

Reddan and Leitch shaped the way in which Naracoorte came to be seen by the public. Not only was their approach to management of the caves very similar, but Leitch did what he could to maintain the tradition established by Reddan. Much of the character of the park today still owes a great deal to their efforts, in spite of the destruction of a great deal of the physical plant which they developed.



Figure 1. William Reddan (Photograph W.A. Francis, by courtesy of the late Mrs. Agnes Needham)



Figure 2. Robert (Bob) Leitch (A family snapshot, where an accidental double exposure gives us an excellent picture of the subject. By courtesy of Mr. & Mrs. Ray Leitch)

I hold that Reddan, long before the name was officially applied to the reserve, set out to create a 'pleasure resort' as a place where families could come and enjoy a variety of quietly pleasant experiences, in an atmosphere which combined fun and a degree of elegance. He saw the traditional English pleasure garden, with its annual flowers, rockeries, pergolas and follies as a desirable model. (Wroth 1896) Coupled with this, he saw the pine as an appropriate tree for the aesthetic improvement of the reserve, and planted trees in a range of patterns - groves and avenues - which had no relation to possible production values.

(I note here that Reddan would have thought of a 'resort' in the meaning of the day, as a place to which one resorts for pleasure and relaxation, rather than the contemporary sense, which is much more a place where one is sold high-velocity pleasure, usually at an extreme price !)

Although Tenison-Woods had earlier emphasised the role of the caves as a scientific resource of considerable interest and importance, Reddan rejected this as the basis of a possible direction for the visitor experience. He did report his own discoveries of the first Pleistocene sub-fossils from Naracoorte to the South Australian Museum, but there is no evidence that visitors were ever taken to the cave from which these came, or that he even told them of these finds. Rather, he emphasised the fantasy elements of the cave visit and built his own commentary around his sense of humour. The caves were, of course, very much a counter-part of the English Garden Grotto, which was often simply an artificial reproduction of a cave as a feature within a garden, and one is left with the impression from both contemporary accounts and the names which Reddan bestowed on features, that he perceived the caves very much as one feature in the overall pleasure garden setting.

The steel pipe and wire netting seems anomalous within this viewpoint. Interestingly, the Blanche Cave, which was developed prior to any contact with Jenolan, never had this pattern of development. Its graceful pathways, with wooden handrails and carefully contrived vignettes and scenes, is a much more adequate expression of the viewpoint which I have argued as characterising Reddan's approach.

My own conclusion is that the Wilson approach to cave development (which is distinctively Australian) was imposed upon Reddan's own better judgement, partly because of the conviction with which it was presented, but also because the very appointment of a caretaker was seen as a strategy to prevent vandalism, and Reddan would have been all too conscious of the delicate beauty of the new caves.

In spite of the netting, other aspects of the development in both Victoria and Alexandra Cave showed his very real attention to the aesthetics of small grottos - the careful placement of trans-located stalagmites, the artificial pools, and the selection of observation points were all contrived to improve upon nature.

As noted, Bob Leitch did all he could to maintain this pattern. He added his own brand of humour with its artifacts of celluloid fish and dolls - again congruent with the traditional pleasure garden. But Leitch was an Australian nationalist in a way that Reddan was not. His commitment to Australian success in the sporting arena, his planting of native trees and his attempt to acclimatise the koala all point in this direction, and added a new dimension to the reserve.

TODAY . . .

Today, the visitor is greeted by Reddan's pines; perhaps (but not very often) has a picnic lunch in their shade, just as visitors did over 80 years ago; enjoys the colour added to the Park by Leitch's Wattles and other native trees; probably sees some of Reddan's bulbs and other flowers which refuse to be done away with; perhaps also sees the Bridal Creeper with some dismay; and enjoys the graceful development of the Blanche Cave very much as Reddan left it.

The pipe and netting has gone from the other caves - probably Reddan would approve of that - but with it has also gone most of the pergolas and rockeries, the tree-ferns which had adorned the Blanche Cave, the original home of the Reddan and Leitch families and the swimming hole (and hence the likelihood of seeing the finest avenue of pines). Perhaps more seriously, much of the fun and pleasure has been exchanged for science and education. Perhaps the National Parks approach is right : we do need many more people who understand and care about our environment : but I think there are some very serious questions to be faced.

One might well ask (too late) how it was that park managers were so concerned to restore or improve the natural environment that they unquestioningly destroyed valuable parts of our cultural environment ? Perhaps Reddan was right and perhaps people need pleasure resorts still and perhaps they would care more about the environment if it gave them pleasure rather than, or in addition to, education ? Do people really want all exotic plants eliminated or would they prefer the mix of local and exotic which Reddan was able to make so attractive ? Certainly the Draft Management Plan (1986) emphasises the need for historical interpretation and I think this will be a very positive and important direction - but I also find myself asking whether interpretation might be better achieved by restoring some of the past rather than telling people about it ?

Obviously, these are impossible questions to answer definitively, but they are questions which demand a more thoughtful and thorough consideration than they have generally been given. They are also questions which are raised in many of our parks. Unless park managers remember our history and make sound decisions about its place in our present, they will be remembered as vandals.

#### ACKNOWLEDGEMENTS

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Contributions from all fields of study related to speleology will be considered for publication. Suitable fields include Earth Sciences, Speleochemistry, Hydrology, Meteorology, Conservation, Biospeleology, History, Major Exploration (Expedition) Reports, Equipment and Techniques, Surveying and Cartography, Photography and Documentation. Comprehensive descriptive accounts of the exploration and morphology of individual caves will be welcomed, but simple trip reports and brief cave descriptions are not adequate. Papers overall should not exceed 20 printed pages in length. Contributors intending to write at greater length or requiring any advice on details of preparation are invited to correspond with the Editors. All manuscripts will be read by referees. Short 'Letters to the Editor', expressing a personal view or giving a preliminary report of interesting findings, are welcomed, and will be given preference for speedy publication.

### MANUSCRIPTS

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Throughout the main text major headings should be in upper case, centred and not underlined, while subheadings should use lower case, underlined and aligned with the left hand margin. Acknowledgements should be placed at the end of the text before the references, and the authors' addresses for correspondence should follow the references.

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GRAY, M.R., 1973 Cavernicolous spiders from the Nullarbor Plain and south-west Australia. J. Aust. ent. Soc. 12: 207-221.

VANDEL, A., 1965 Biospeleology. The Biology of the Cavernicolous Animals. Pergamon, London. Pp. xxiv, 524.

WIGLEY, T.M.L. and WOOD, I.D., 1967 Meteorology of the Nullarbor Plain caves. In: J.R. DUNKLEY and T.M.L. WIGLEY (eds), Caves of the Nullarbor. A Review of Speleological Investigations in the Nullarbor Plain. Southern Australia: 32-34. Speleological Research Council, Sydney.

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(by arrangement with Jenolan Caves Historical and Preservation Society, Helictite is publishing the proceedings of the first ever Australian Caves History Seminar, held at Jenolan Caves on 10th November, 1985. These papers are not subject to the normal Helictite refereeing process.)



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