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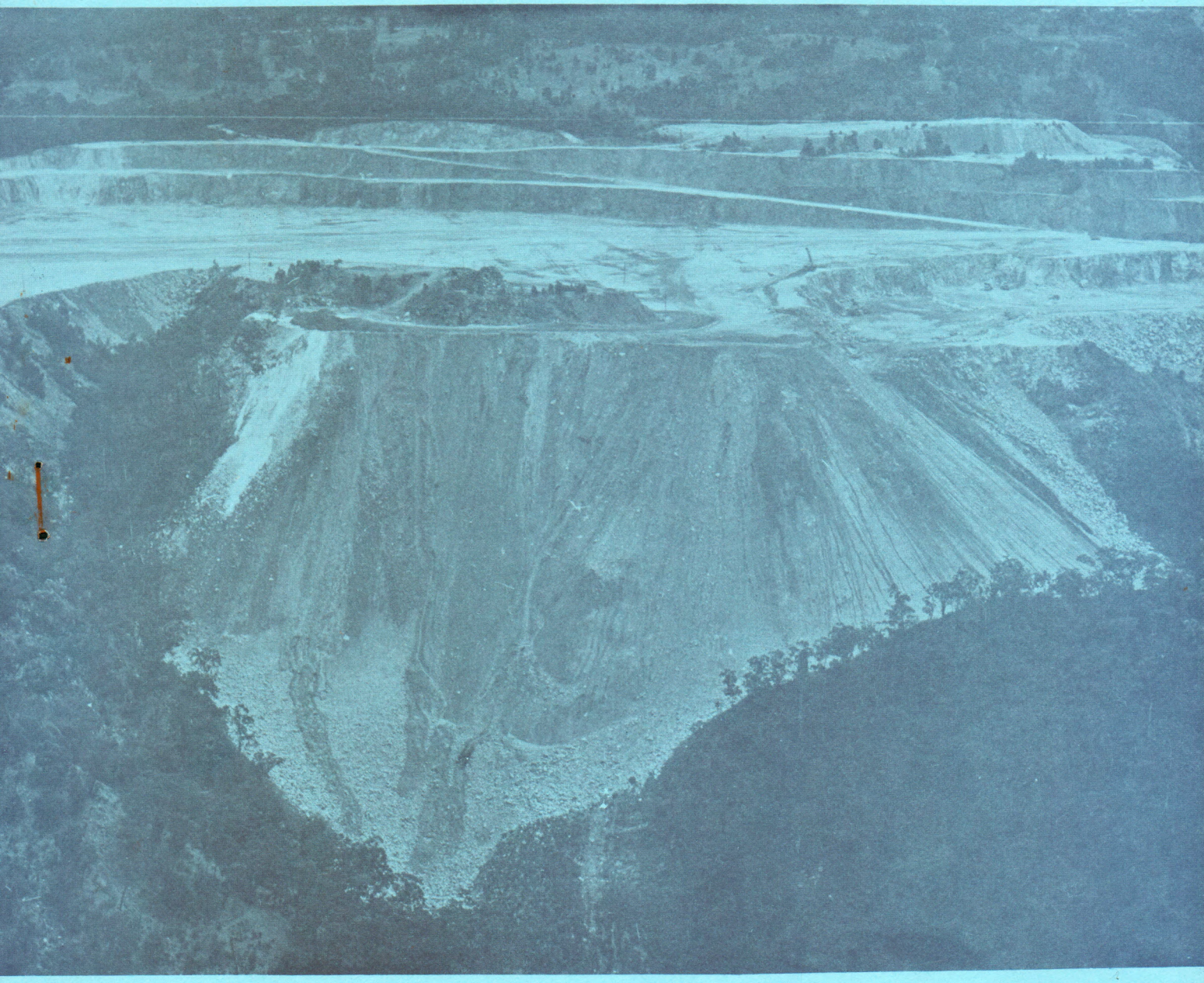

UNSWSS MEMBER FIGHTS B.H.P!

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ASF NEWSLETTER

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Number Fifty Two - June 1971

A S F N E W S L E T T E R

AUSTRALIAN SPELEOLOGICAL FEDERATION

. . . E D I T O R I A L S . . . . . .

Every time I finish a newsletter I swear it will be the last one, for it is a bastard of a job, presently demanding about 2 hours per page to solicit material, edit and type it. Procrastination of production is propagated by lack of a typewriter, and as the nominal issue date passes, model resignations are mentally conjured and telepathed to the President. But then an encouraging letter arrives from an Albert Goede or a Henry Shannon, or an article from a Ross Ellis, who knows the affliction, or a Kevin Kiernan, who should . . .

The A.S.F. currently has some 14 Commissions and ad hoc Committees working on improving the already high standard of Australian speleology. I have remarked more than once before that this country has an extremely high reputation for speleology on the professional plane overseas. Our general caving standards are also equal to the best in the world, while in some aspects - conservation and surveying spring to mind - we can probably teach more than learn. The Convenors of the Commissions and Committees do a time consuming job. They deserve your fullest support.

. . . and the A.S.F. Newsletter lives another issue!

In May I spent a profitable day at the Mining Wardens Court in Sydney, listening to the great Bungonia case. It was historical litigation; for the first time ever the "public interest" was being proffered in objection to a mining lease application. Australian speleology can be proud that it has members like Warwick Counsell (UNSWSS) who are prepared to take on the largest business firm in this country, one which loudly trumpets its concern for the environment it helps destroy. The full, unbiased, first hand report within.

The 1970 Conference of the A.S.F. in Hobart must be regarded as a major turning point in Australian speleology, after the somnolence of the late sixties. The high standard of proceedings and the unqualified smashing success of the field trips were an eye opener even to veterans. At least 3 horizontal and nearly 1 vertical mile of caves were discovered. If you weren't one of the record 116 on the scene, the new Golden Age is passing you by, kid. In the meantime, have a vicarious helping of Exit Cave within. And start planning for 1972

. . . . . .

OBITUARY - ERN MADDOCK

The Cave Exploration Group (South Australia) regrets to report the death of Ernie Maddock, President of CEGSA, on 28th June, 1971, after a short illness.

Ernie held a senior position with the South Australia Tourist Bureau, specialising in management of Reserves and Pleasure Resorts, with a particular interest in the Naracoorte Caves Reserve. A bond was developed in the last few years between Ernie and CEGSA that led to a veritable explosion of cave discovery in the area under his help and incentive.

His work with the Tourist Bureau led in turn to massive development work in the establishment of better facilities there, including a roadside museum - a section of the Fossil extension of the Victoria Cave being opened to the public - land extensions to the Reserve itself, and the establishment of a wildlifeReserve there, to name but some.

Ernie could only be described as a practical human conservationist who held a sensible feeling for the earth and its people. His loss will be felt by many and the Naracoorte Caves Resdrve stands as too humble a memorial to contain the ashes of this good man.

- A.L.Hill, 3/7/71

CONSERVATION ACTION

EXTRACTIVE INDUSTRIES LICENCE CLAIM NO. 527 AT BUCHAN

BY NICK WHITE VSA

This application was lodged on January 13, 1971. VSA formally objected to the application on the basis of the caves within the boundary and is at present negotiating with both the Mines Department of Victoria and Altarama Minerals with a view to conserving the major caves involved.

The application covers portions of Crown Allotments 22A, 23 and 24B covering 90 acres in the parish of Buchan. This is in the "Potholes" at Murrindal where the Rocky Camp member limestone is of suitable composition for making glass, paper and steel. The Rocky Camp limestone outcrops in the southern portion of Allotment 22A and is bounded to the north by McLarty Member and to the south by McLartyMember and Taravale limestones. The southern part of Allotment 22A is a hillside , thus providing an ideal quarry site from the point of view of economics.

Our objection is based on the very significant caves involved; briefly :

M41	Honeycomb Cave	- most eautiful & extensive pothole at Buchan, depth 230ft.
M48	Jampot	- one of hardest potholes at Buchan, depth 210 ft.
M54	Ians Hat Cave	- deepest in Victoria
M56	Oolite Cave	- pothole with interesting passages and decoration, with total depth of 185 ft.

A number of other minor caves also lie within the proposed quarry area. Whilst none of the caves involved is significant in terms of biology or paleontology, they are geologically important and include some of the largest and deepest potholes at Murrindal. Honeycomb, for instance, warrants conservation at all cost. Work is continuing in surveying and photographing in a more detailed and systematic manner. VSA is not publicising this matter while fruitful negotiation remains.

SURVEY STANDARDS COMMITTEE

by E.G. Anderson
(SUSS/UNSWSS)

At the Eighth Biennial Conference of the A.S.F. I was appointed convenor of an ad hoc Comittee to thoroughly review the recommended survey standards of the Federation. I intend to prepare a provisional report for circulation to member Societies and persons particularly concerned with cave surveying. The basic aspects which I shall be considering in this report will include :

1. The imminent conversion to metric measure and paper size. The metric system is already employed in the Australian Mapping Program and the International System (SI) Units has been recommended by the Standards Association of Australia (AS 1000-1970). Scales and measurements shown on maps are affected and the recommended drawing sheet sizes requires revision.

2. The appreciable pressure to devise a better survey grading scheme and one more suitable to the Australian approach and attitude to cave surveying. Clearly the present (CRG) system is incomplete, inconsistent, inappropriate to Australian methods, and not soundly based on an up-to-date error theory. Its saving virtue - simplicity - results largely from the basic principle of consideration of instruments and methods. This may be an essential basis for any practical scheme. Methods exist for assessing accuracies of fundamental measurements and their effect on and propagation in a survey. Provision for grading of the mapping of detail and morphology requires consideration.

3. Report of the International Union of Speleology Commission (for Uniformity of Terminology and Conventional Signs). It is not at all surprising that the Cave Research Group have paid scant attention to the International recommend-ations. In general the proposals are excessively complex and internally inconsistent, and include innumerable transgressions of the fundamental principles of any other system of technical symbolism. Indeed, Collins (1970) suggests that a statement of the principal is sufficient and tables of conventional signs are unnecessary. I am inclined to the view that a small set of very basic and well established symbols - unique to the speleological cartographer - is necessary and this should be accompanied by a statement of guiding principles for the extensions of the basic set. By this means wemay avoid being so presumptuous as to modify and replace the well established conventions of the geologist, geographer, draftsman and cartographer - which is the unfortunate result of the IUS Report. Under this heading must also be included some consideration of the standards for survey and cartographic terminology.

The above summary is based on many informal discussions with several persons concerned with cave surveys, published papers and letters and comments in Australian and overseas literature over many years as well as my own ideas and opinions. Comments, ideas, opinions and additions to the above are solicited from interested persons for inclusion in my provisional Report BY END OF OCTOBER. Please forward to

* E.G.Anderson, c/o School of Surveying, University of NSW, Kensington, NSW 2033 *

R E F E R E N C E

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CONSERVATION AND BUNGONIA

BY WARWICK J. COUNSELL UNSWSS

Caves have been found in only part of the Bungonia limestone, and caving is only one of its uses. This article is an attempt to place this heavily trogged area back in context and to report on some of its conservation problems.

DESCRIPTION OF THE AREA

The bricked area in figure 1C approximates the extent of the westerly dip of Silurian limestone and its interbedded shales. Resting unconformably on the folded slates etc. of the Tallong beds to the east, it is in turn overlain in the west by tuffs and lavas of the Tangerang Volcanics. Large grained crystalline calcite is a dominant feature of the contact metamorphic zone of the granodiorite to the north, while several miles to the south the limestone becomes lenticular and eventually disappears.

The granite country north of the limestone is drained by Barbers Creek and its tributaries, Marulan and Tangerang Creeks. All descend 1,500 ft by a short (less than four miles long) steep sided gorge between Long Point and South Marulan, to the Shoalhaven River.

West of the limestone the northward flowing Bungonia Creek descends from the plateau by a series of magnificent waterfalls. It is joined by the equally spectacular Jerrara Creek before it turns eastward to cross strike between the vertical walls of the Bungonia Gorge where over 1,400 ft of limestone is exposed.

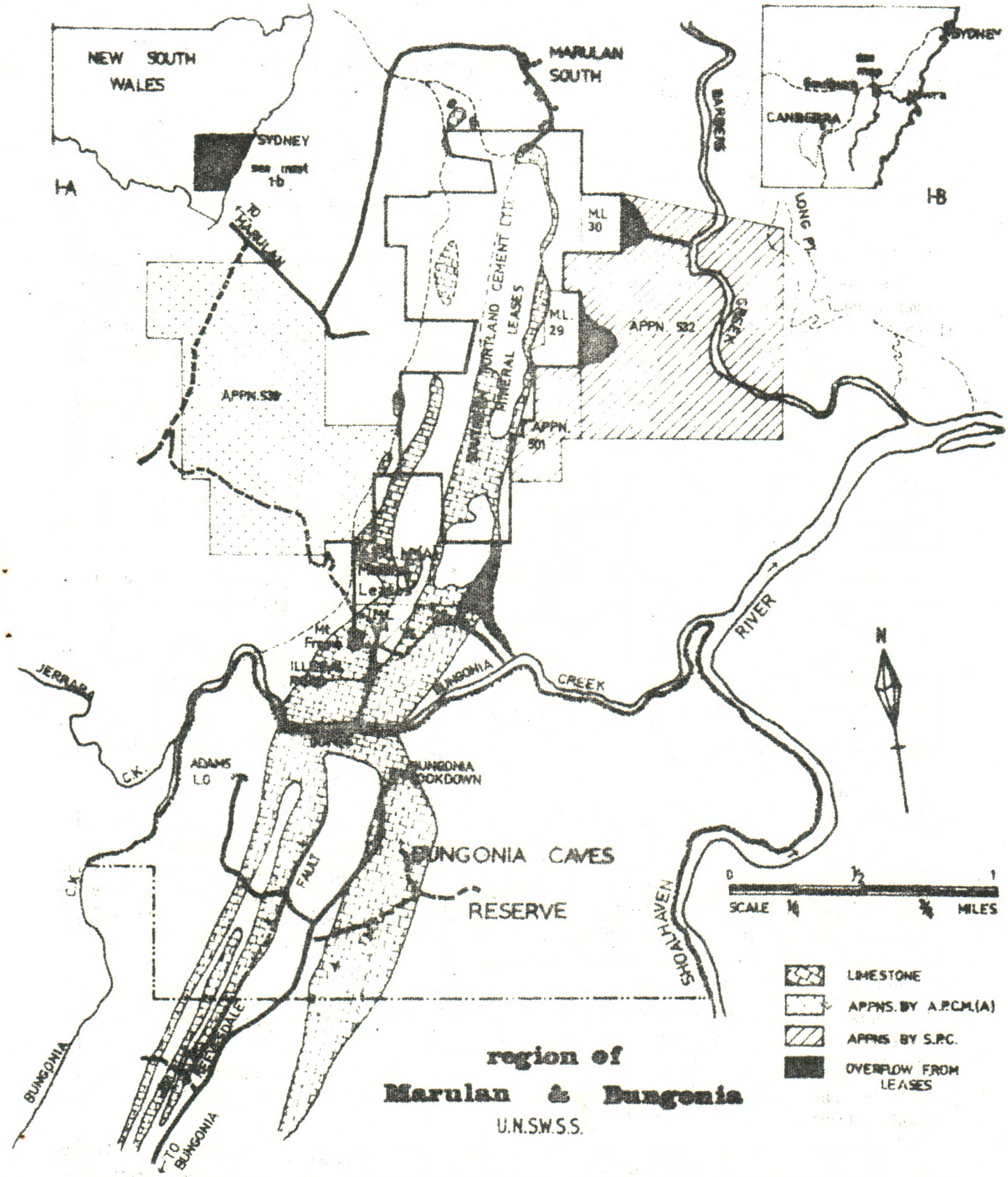
UTILIZATION

The extreme north of the limestone complex is being quarried by Southern Portland Cement Ltd., a subsidiary of B.H.P. and one of two companies recently merged to form Australian Portland Cement. The other quarry north of the Bungonia Gorge is that of Commonwealth Portland Cement Ltd, a subsidiary of Associated Portland Cement Manufacturers (Australia), holders of Special Lease 444 at Colong - Church Creek.

The Jerrara, Bungonia and Barbers Creeks have huge floating populations of bushwalkers, scouts and casual hikers who enjoy the accessibility of the magnificent waterfalls and deep pools. The Bungonia Gorge has, as well as the countless who scramble down the steep slopes to wander through, an even greater number of admirers who view it and its surrounds from nearby lookouts.

South of the Gorge and these lookouts lies the Bungonia Caves Reserve, where huge depressions representing the direct catchments of some of the major caves form a striking feature of the plateau. The four deepest caves on the Australian mainland (B24, B4/5, B31 and B44 - up to 485 ft), the longest dark pitch on the mainland (B13 at 134 ft), and the Bungonia Gorge, combine to make this one of the most important karst areas in Australia.

The numbers of cavers using this area cannot be accurately assessed, but a rough survey over 17 weekends suggests an average of 100 persons per weekend visiting this 1,390 acre reserve. While this number does include casual visitors, bushwalkers



region of

Marulan & Bungonia

U.N.S.W.S.S.

COMPILED FROM MAPS DRAWN BY THE DEPARTMENT OF MINES, THE DEPARTMENT OF LANDS, AND WARWICK COUNSELL.
GEOLOGY ADAPTED FROM THESES BY B.H.PUNTER (1950) AND T.G GOULD (1966)

cavers, it is still remarkable that an area made inhospitable through shortage of water and lack of toilet facilities remains so attractive.

CONFLICTS

In the very north, the graziers who are "off" the limestone have prosperous properties and, not unnaturally, refuse to provide land to S.P.C. for dumping of mullock and overburden. This company has thus been forced to dump into the Barbers Creek Gorge, offending bushwalkers and others visiting Long Point.

The Commonwealth Portland Cement Company has had little trouble negotiating for a dump because the nearby land is poor and undeveloped. Its quarry, however, is so close to the Bungonia Gorge that direct spillages occue frequently. These endanger the lives of bushwalkers and (since these "accidental screeslopes" are plainly visible from the Bungonia Caves Reserve) disgust the many thousands who visit the area each year.

Within the reserve itself, those casual visitors who are not going to revisit the area are disinclined to keep the place clean or to take their rubbish home with them. There are some who feel obliged to collapse some of the caves by blasting. The Scouts and non-A.S.F. cavers who seem to take the blame for all vandalism are, as elsewhere, viewed with suspicion by "speleos" who, by sheer weight of numbers themselves contibute most significantly to the pollution and despoilation of the Reserve.

Further south there has not been any real tussle between farming and caving. But the soil is so poor here that there is an ever present willingness of graziers to dispose of their land to the limestone miners.

While the conflict between mining and caving is far from the most important conservation problem facing cavers in New South Wales today, is is nevertheless so dramatic, so very tangible, that it captures the imagination of the people far more than does the problem of sewerage disposal or fauna protection. For this reason, after a somewhat lengthy introduction I will relate some of what has happened at Bungonia in the conservation sphere in the last year or so.

THE ILLEGAL ROAD AFFAIR . . .

At a meeting at Bungonia on April 26, 1970, a member of the Bungonia Caves Reserve Trust, and a local property owner, expressed concern about a road which had been recently constructed around the eastern slopes of Mount Frome (from near the Commonwealth Portland Cement quarry) to a saddle only 300 ft from the north wall of the Bungonia Gorge. It was believed that, as the north side of the Gorge was covered by Reserves, this constituted an infringement.

Research at the Mine Department in Sydney, obtaining lease plans, maps, gazettal notices and proclamations took until early August, when enough was known about the lease situation north of the Gorge to ensure results.

On August 6, a letter was sent to the Mines Department complaining of apparently illegal activities south of ML 24, ML 25 and ML 26 in the vicinity of the Bungonia Gorge.

On Sunday, August 9, Ian Wood, Ron Allum, Diane Counsell and myself, all from the University of New South Wales Speleological Society, and Rob Watson from Sydney University Speleological Society, visited Mr Ron Brewer (M.L.A. for Goulburn) to advise him that a road had been constructed around the eastern slopes of Mount Frome,

apparently off existing leases and that it was their intention to survey it. Mr Brewer asked that we come to see him at Parliament House, Sydney, on the following Wednesday bringing photographs and a map if possible.

It was possible to drive to the back of Mount Frome and, carrying cameras, a theodolite and other surveying gear, to walk along a road which had been recently cut into the slopes by bulldozing down trees and pushing boulders and overburden over the edge. This road led to the saddle which had been flattened by the bulldozer and further cleared by cutting down almost every tree in sight. A Landrover and large drilling rig were on this cleared area, which was so perilously close to the edge of the gorge that uprooted trees, and boulders were poised ready to fall 800 ft into the Gorge below.

The two drill operators explained that they were employees of Commonwealth Cement Industries (also A.P.C.M.(A.)) and that they would be drilling at this site for several more weeks, seven days a week. They asked whether our party were bush-walkers or "that Colong mob", and when informed that we were cavers, were obviously relieved.

They remained unperturbed as photographs were taken and triangulation off a few landmarks with the theodolite was used to fix the position of the drill. A traverse along the newly constructed road to a benchmark identified as the corner of a lease completed the survey.

Back in Sydney a map was prepared at a scale of 4 chains to an inch. Several of the most damning photographs, e.g. showing their Landrover (number plate and all) with Bungonia Lookdown in the background, were printed and a letter outlining activities, observations and conclusions and requesting "urgent" investigation of the matter was written. These were taken to Mr Brewer at Parliament House on August 12 for delivery to Mr Lewis, Minister for Lands.

On Monday, August 17, a set of photographs and copies of the map and letter were delivered to the Department of Mines in Sydney, and on Wednesday, August 19, similar copies of everything went to the Mulwaree Shire Council with a covering letter urging action to protect the Bungonia Gorge.

About September 10, information was obtained that Mr Lewis had handed the matter over to Mr Fife, Minister for Mines.

On September 14, a short letter from Mulwaree Shire Council advised that action had been taken "to have operations outside mining leases ceased forthwith" and that drilling had ceased.

About November 6, Mr Fife advised that operations in the vicinity of Bungonia Gorge were "under investigation"!!

On December 17, further communication from Mr Fife contained the following statements :

(i) that "Associated Portland Cement Manufacturers (Australia) Ltd had inadvertently constructed the two access roads and drill site because of a misinterpretation of instructions issued to site personnel".

(ii) that "Mulwaree Shire Council drew the Company's attention to the fact that the road and drill site were within reserve R2755 from the leasing provisions of the Mines Act, and on September 8, 1970, it issued instructions to the Company to cease operations in the area".

(iii) that "the diamond drill has now been removed to a site within the boundaries of the lease area and the two access roads have been sown with grass seeds. If not used the roads will soon be overgrown and will not be conspicuous from Adams Lookout. Instructions were also given to the quarry foreman to clear the access roads of any material that could constitute a danger to bushwalkers".

Roughly the same letter was received from the Department of Mines on January 28, 1971.

I suppose it all boils down to this; the Bungonia Gorge took 45 Million years to form. In a week of "misinterpretation" someone destroyed a valuable part of it... the fine? - several pounds of grass seed. Now may I draw the comparison? The human body takes about 20 years to form . . . a moment's misinterpretation?. . . The fine?.

DUMPING IN BARBERS CREEK - CREATING A PRECEDENT

On the 9th September, 1970, Southern Portland Cement Ltd applied for an area indicated on map 1C as 400 acres covering $\frac{3}{4}$ of a mile of the length of Barbers Creek gorge, to be used for dumping from the South Marulan quarry.

Fortunately, Milo Dunphy (Colong Committee) and myself were able to lodge (separate) objections in time. This was an historic moment for conservation in N.S.W. For the first time, a mining lease application was being objected to in the public interest. Hopefully, the general public was to be given a say on the question of despoilation of crown reserves land by a mining company.

Any applicant for a mineral lease must take possession of it by fixing one or more posts (depending on the area involved) and posting an appropriate notice on one called the "datum post". Details of the lease application are then lodged with the nearest Warden's Clerk, in this case at Goulburn. Notice of the application and an "invitation" to potential objectors is posted - not in the newspapers - but on the notice board at the local court house

Objections must be lodged within seven days, and although anyone may object, no one does normally because it is nearly impossible to find out about applications soon enough.

If objections are lodged, a Warden's Enquiry in open court is automatic.

If there are no objections from the public, government departments and authorities are given the opportunity to object. Without public enquiry the results of these objections tend to reflect the wishes of the more dominant ministers regardless of whether they represent the best interests of the public.

The Minister for Mines makes the final decision to grant or reject an application.

A REPORT ON PROCEEDINGS

The hearing opened at Goulburn Court House on February 16, 1971, with a legal argument to decide whether public interest was an allowable ground for objection. Fortunately the Mining Warden, Mr K.S. Anderson ruled that it was and allowed the case to proceed.

Mr R. Meagher (counsel for both objectors) introduced Professor C.H. Munro, a civil engineering consultant, to give evidence on the devastation of the Barbers Creek gorge and the impossibility of preventing same if dumping were allowed to cont-

inue. He spoke of unstable dams being formed which would collapse and send a flood down the gorge. His estimates of the cost of preventing loss of life ranged between two and four million dollars.

Douglas Stott, a surveyor from B.H.P., under cross-examination by counsel for the objectors admitted that one existing dump had already reached Barbers Creek 1,200 ft over the lease boundaries, and another was 700 ft off the leases.

On February 17, Dr J.G. Mosley, assistant director of the Australian Conservation Foundation, described the area of which Barbers Creek was a part as the Grand Canyon of Australia, and likened dumping into the gorge to desecration of a cathedral.

Mr J.N. Jennings, Professorial fellow in Geomorphology at the AustralianNational University and past President of the Australian Speleological Federation, gave evidence on the great difficulty of stabilising dumps on steep slopes and the consequent movement of dumped material into Barbers Creek.

Mr D.K. Thistlethwayte, ex-chief chemist of the Metropolitan Water Sewerage and Drainage Board warned of the consequences of allowing large amounts of fine material to contaminate the water of Barbers Creek and the Shoalhaven River.

A joint inspection was held on the 18th February, and the hearing was adjourned until the 18th, 19th and 20th May, 1971, in Sydney.

On resumption in May, Professor J.J. Veevers of Macquarie University made the court aware that the mullock was a potentially valuable resource and should be dumped in an accessible place on the plateau to avoid creation of an unpredictable situation in Barbers Creek gorge.

Warwick Counsell described the appearance of Barbers Creek and the existing dumps to the court. He told of conservations with executives of the company on 25th November, 1970, which indicated that no research had been carried out on the possible effects of dumping into the creek, and that silt was not their (S.P.C's) problem but the Water Board's.

Counsel for S.P.C., Mr M. Gleason, introduced a soil mechanics engineer, Mr Longworth, with a report outlining a proposal to dump into a short steep gully feeding Barbers Creek. This would take 42 million tons of rubble and pollution of Barbers Creek would be somewhat prevented by the construction of a rock wall filter at the toe of the dump. The report admitted that clays could not be disposed of into this dump without seriously affecting its stability. A forester then discussed the revegetation of the dump on ML 30 (which reaches Barbers Creek) and the continuous revegetation of the "big" dump during dumping operations. There would be a considerable cost involved and stabilization of the surface would be achieved.

Apart from a marathon cross-examination of an S.P.C. engineer, Mr K. Howard, who had given evidence on the unavailability of alternative dumping sites, the rest of the time was taken up with legal argument between the Crown Solicitor and counsel for the objectors. The Minister for Mines was withholding documents which had been sub-poenaed, claiming privilege on the grounds that they were not relevant to the case.

On resumption of hearing in July, a Sydney engineering consultant, Mr S. Hesp, presented a report which was the major alternative to the Longworth proposal, and on it resetd a good deal of the objectors case. The report showed that for only about six cents per ton increase in price of cement, all the mullock could be dumped on flat land adjoining the quarry, avoiding further despoilation of Barbers Creek.

A supporting report on costing was submitted by another Sydney engineer, Mr T. van Dugteren. Cross examination of Mr Hesp by Mr Gleason (counsel for S.P.C.) amid claims that a flat dump would adversely affect the quality of life in the township of South Marulan. This marked the end of formal evidence.

On 8th July, 1971, after summing up by both Counsel, the Mining Warden advised that he would reserve his decision pending a further site inspection. The inspection descended to the Shoalhaven River via Long Point and observed the relevant parts of Barbers Creek before being lifted out by helicopter.

The Mining Warden is expected to announce his recommendations to the Minister for Mines before the end of September.

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* * * * *

SPELEOS SEEN . . . . on the Speleo scene

No. 4 Alan Hill

Born Sydney 16/3/27, went to school with Bill Woof of Colong fame. Worked 10 years with ACI - only war service was the Battle of Bondi at Kings Cross. Early (1946) member Sydney Bushwalkers. Remembers Yerranderie on a geology excursion and Colong when it was a pleasant one hour rattle through. Organized (?) trips to Tasmania including Frenchmans Cap, and around Australia in a Dodge Weapons Carrier. Moved to South Australia around '54 chasing uranium. Vice-President of Adelaide Bushwalkers who used to think bushwalking was a bus to Mt Lofty and walk home. Organized Centralian trip '57 - Ayers Rock, Mt Olga and all points west. Met CEGSA before CEGSA, with Tindale of S.A. Museum and Elery H-S. Inaugural Sec. of CEGSA 1956, saw first ASF Meeting Christmas 1956 in Adelaide. President CEGSA 1959-60-61, Honorary Life Member 1961. Saw massive development at Correls Cave on Yorke Peninsula, also Kangaroo Island, Naracoorte region and Flinders Ranges. Mainly concerned with mapping and dipbotodonning but also proposed geomorphological theory on lateral solution in porous limestone on KI. In 1965-66 Records andLibrary man and first unpublished papers on Naracoorte. CEGSA King again 1966-67. Created stirs like "choofer problem" and "tourist barrier". Finally made Nullarbor in Jan. '66 to N37 (ed. Mullamullang Cave Expdditions 1966). Got caught with "Caves of the Nullarbor". Had a ball in Tasmania 1970-1, now confined to armchair,contemplating 27 unfinished maps, 7 unfinished papers and an unfinished house.

(note: Ben Nurse (President of SSS) was also asked for some autobiography, and I stress that this section has been written by the authors, not by me, but he hasn't replied. Now don't be coy, Ben - people do want to hear about you.) - ed.

- sorry, Kevin , no room for Lake Padder this issue but plenty big spread next time -

CAVES OF AUSTRALIA

NO. 4

MULLAMULLANG CAVE

by A.L. Hill

(CEGSA)

In January 1964 the whole Australian caving world caught its breath at the news that the SUSS Nullarbor Expedition had found a cave over 2 miles long. By 1967, now over 6 miles long, Mullamullang was losing the hypnotic attraction that justified the 920 mile bash from Adelaide, twice as far from Sydney.

What's happened since?

Mullamullang Cave is located about 16 miles due north east of Madura, W.A. and is one of the most recent of the 17 "deep" caves to be discovered (Anderson 1964). It had the rare distinction of being first located remotely by stereoscopic photograph examination in Canberra (Jennings 1964) and immediately became both the longest and deepest on the Nullarbor.

Initially there were four major expeditions to the cave, starting with the 1963-64 SUSS Nullarbor Expedition which found it and entered the first 2 miles. Easter 1965 saw a small WASG party continue past the point now called the "DropOff" adding another ½ mile to the Junction and Lake Cigalere. Later in 1965 a SUSS trip established the first underground camp (at White Lake) and continued beyond the Junction to the Dome. The 1965-66 CEGSA trip had a complement of 45 cavers for intensified deep work including a 20 man team at Camp One, 2½ miles in, for 7 days. Follow up trips by CEGSA in 1966 brought the mapped length to 6 miles with much more known. Easter Extension was found and in time connected back to Franks Station in the main passage.

And so by 1967 the cave had been comprehensively documented with three major publications (Anderson 1964, Hill 1966, Dunkley & Wigley 1967).

Thus far most of the work had been physical and exploratory and with the temporary satisfaction that no new extensions would be easily forthcoming, other aspects came into focus. In meteorology a 1967 trip continued earlier work in N37 with comparative studies at unnamed blowhole N73, some 3 miles further north east, resulting in two papers on cave breathing in Mullamullang and the Nullarbor in general (Wigley 1967a, 1967b).

Levelling was done, giving approximations to the water table of 15-20 ft above sea level (Wigley & Hill 1967). This cave water table is important as a gradient to sea level, in understanding cave genesis, and it is understood that Anderson is still working on more accurate surveys.

The micro fluctuations in water table observed in Cocklebiddy Cave by Lowry (1970) were recognised in N37 and at Naracoorte (unpublished) by the author. This phenomenon was also recognised and described as due to atmospheric pressure byWard (1946) and the writer feels it may be a significant factor in explaining lateral solution at th water table. Much work remains in this field and N37 would be an ideal observational laboratory. The high salt content of the ground water (9500ppm) poses a barrier to rapid solution of the limestone but the entrance has a high intake of frsh rainfall; thus a 'cream' of fresh water (Ward 1946) could well into the cave making solution possible. The water intake is so high that from

residual mud on the walls and roof of the Southerly Buster it appears the cave could conceivably fill to the roof at this point.

The geological history of the Nullarbor generally has been described as early as Tate (1879), thence King (1949), but probably the most significant paper at present is Lowry (1967), particularly in relation to N37. Lowry has spent much professional time on the Nullarbor, concentrating on the caves, which offer a simple means of examining the stratigraphy at depth. A new member of the Nullarbor Limestone, the Mullamullang Member, has ... identified between 37 and 58 ft below the surface. The underlying Abrakurrie Limestone is over 320 ft deep at Mullamullang, and the Wilsons Bluff Limestone is never reached, being below water - table.

The geomorphology has been both generally described for the Nullarbor by Jennings (1967) and in detail for other caves in the area. For Mullamullang the geomorphology is best described in detail by Hunt (1970) in a paper first read at the Sixth Biennial Conference of the A.S.F. in 1966. There is a deep fissure south east of Franks Station that opens into what appears to be a wide flat solution passage, intersecting the main passage at right angles. A new broken route from the other end of this solution passage connects with Easter Lake. his solution passage could not be located on the opposite side of Franks Station although the writer has no doubt it is there; confirmation of this is by the nature of the secondary settlement of the centre of the rock pile at Franks Station and the whole structure in the area supports some of these principles outlined by Hunt.

Geophysical work at N37 was undertaken in 1968 by Heffernan and Cohen who did not publish the results. Gravity metre traverses were made over known ... of the cave for which predicted anomalies appeared, and confirmation of an extension of the cave south west of the entrance was made b similar traverses, No to this extension has yet been found t rough the south doline, but it remains a frustratingly tempting prize.

In the biology field the cave carried a common beetle of the Nullarbor caves and two common species of bats (Hamilton-Smith 1966). Of far more interest are several new species first collected in N37, the first of which is the famous Nullarbor Caves Cockroach (Mackerras 1967). Later expeditions subsequently collected at least two species of cave spider currently under study.

The most recent expedition to Mullamullang took place in May 1971 when a party from CEGSA finally ascended the Dome. This is the terminal chamber in the cave with a previously inaccessible roofhole some 300 ft above water level. It was finally accomplished by the brute force of progressively pegging in two 20 ft lengths of rigid aluminium ladders, but with disappointing results - no obvious continuation. This abrupt end has attracted geological interest since slight wind movements have been detected in the foot of the Dome, and its overhanging wall shows signs of shear as if faulting had taken place. There is no evidence of this on the surface although there is a small doline nearby. If the Dome is to be passed, the only possibility appears to be in a north east extension of the Ezam. The ladder was also used to enter 200 ft of passages with a strong air movement at 6100N 7900E near the Dropoff.

Th s Mullamullang stands as one of Australia's most significant and best documented caves. Its remoteness makes continuous exploration and research difficult but estimates suggest its length could reach 10 miles when all minor passages

are surveyed in the Ezam, Easter and other regions. The cave has already opened many avenues of research, many of which are still in an infant stage. Much more work remains and the cave favours large parties and small alike. It is on private property in cattle country and permission must be gained for entry. Perhaps the most significant discipli for Mullamullang work at present, since the cave has so much to offer, would be in conservation. Any ideas?

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A.S.F. EXIT CAVE FIELD TRIP AS SEEN BY

PETER MATTHEWS V.S.A.

(The editor feels really sorry for those who missed out on seeing
Australia's greatest cave on the post-A.S.F. Conference Field Trips)

. . . Thursday, December 31, 1970 and we were re overing from the Cave Man's Dinner and loading up the cars for the field trips. By 6.30pm we had reached the start of that famous "Exit Track", and were ready to plunge into the bush off the lonely road south of Hastings.

The trip was very ably, though unobtrusively led by Brian Collin, one of TCC's men of action,assisted by Alan Keller who looks like a character straight out of Li'l Abner but has been described as one of Tasmania's best bushmen. The party consisted of

TCC	Brian Collin, Allan Keller
UNSWSS	Ian Wood, Andrew Pavey, Tony Culberg, Alan Rogers, Rick & Diane Counsell, Ron Allum
VSA	Nick White, John Bennett, Peter Matthews
SUSS	Chris Cosgrove, Jim Seabrook, Ted Anderson
UQSS/SUSS	Henry Shannon, Beverley Riley
CEGSA	Harvey Cohen

As one who hadn't had experience of the Tasmanian bush before, I found the track in very interesting and took it fairly slowly to enable a bit of a look and to take a few photographs. The track starts in forest with plenty of logs to climb over or crawl under. Next comes a swamp where you push your way through clumps of sword grass 6'-8' high. This suddenly gives way to a ti-tree forest, fairly open underneath but with a solid canopy 12-15 ft up; the track, however, is invisible beneath the flowing waters of the swamp which are the typical peaty brown colour and prevent you from seeing whether the next step you are going to take is ankle deep or thigh deep. Interesting though.

After that, the track breaks out into open country recently burnt out; it's still swampy though and here the track is even more uncertain in its depth below the surface of the ever flowing brown water. Eventually, the track entered its last phase, with good solid ground to walk on, in dark green rain forest.

In to Base Camp

By 8.30 pm everyone had arrived at the cave mouth and the forward party of six moved off into the cave led by Allan Keller.

Tasmania had just had three days of solid, non-stop rain and the river was up. So instead of wading it at the entrance we had to do a rop traverse around the wall. After that we climbed up and past the steel grille door into the Wind Passage and then back to the river where it flows through a cavern of overwhelming dimens-- ions, and with glow worms. In the middle of the cavern the river rushes between the wall and a mountain of a boulder; here it is spanned by a bridge consisting of two saplings tied side by side and to a spike in the rock at each end. A fall into the water here would be rather embarrassing so a flying fox was rigged to ferry.

It is on entering this chamber that you first realize the cave you are in is up to the standard of those European caves you've always drooled over. And what makes it so disgusting is that it's only a day trip from Hobart!

The cave continues on with the same dimensions, but the sequence between here and the rockfall has become a bit hazy. We reached the rockfall which for many years had held up progress. The pace slowed up a bit as we ferried packs through two or three tight spots.

The cave opens out again but not as big and soon we were standing on the slope at the foot of Mini-Martin, a series of shafts reaching to the surface 720 ft above. Dropping down the slope, we crossed the river for the last time and climbed up through jumbled rocks in a large cavern to the Inner Base Camp about $\frac{3}{4}$ mile from the entrance. It was 11 pm and had taken us $2\frac{1}{2}$ hours, much to Allan's disgust. An hour is the usual time. Still, the second party didn't arrive until 1.30am, a period of $5\frac{1}{2}$ hours, much more to Brian's disgust.

New Years Eve was not without a bit of excitement as right on the magical hour of midnight someone's choofer decided to spurt a three foot flame out of the safety valve and would not be tamed. Eventually the desperate owner grabbed the thing with a pair of pliers and hurled it in a magnificent flaming arc right across the cavern to erupt in a ball of flame on the opposite bank. John Bennett then wandered over to it and in his usual nonchalant manner, turned it over with his foot to see if it were really dead.

Friday January 1

By 11.15 am half the party was up and about and now that it was morning we could take stock of our surroundings. The camp area was quite roomy, being about 100 ft square and about 30 ft high; the roof was flat, horizontal bedrock with no water drips - quite remarkable considering the weather outside. The floor consisted of a fine sandy mud deposit now trampled hard, and quite dry; its surface was level except for a wide V - channel which divided the area in two, leaving a bank on each side perfect for camping. The toilet was 'over the back' in a dry area and conditions were such that after a few months all trace disappears. All in all we thought we were in the currently the best campsite in Tasmania - no rain, leeches, no mosquitoes, no wind, no flies and it was not raining. There were no camping fees or transistor radios, either. Those cave men weren't so dumb!

By about 2.30pm we were ready to move off. One party went with Allan to look at the North-Eastern Passage starting just north of the camp where Allan had previously found a stream he hoped would lead to Mystery Creek (entrance) Cave. It was choked off. I went with Brian's party to look at the Western Passage leading off from near the campsite. It was about 3,500 ft long, typical cross-section 50-100ft wide and 50 ft high, and contained an unbelievable number of streams, 15 ft straws and some of those amazing Exit avens. These avens really are a sight to see - 30 ft diameter, vertical walled, water cascading down, and the top not to be seen even with all carbide lamps stoked and trained upwards. Apparently they are common in Exit Cave and occur at the boundary of the horizontal bedded caprock at the top of the hill where it meets the limestone. Mini-Martin and Midnight Hole are on this boundary. By 6.45 we were back at camp. The river was down about 6 inches from where it was when we arrived last night.

Saturday January 2

7.00 am and we are awake. We weren't really surprised when Brian told us the river was up a foot overnight. With the river so high, we were virtually marooned at the campsite so we filled in time by looking at a couple of the nearby sights, the Devils Stovepipe and Edies Treasure. The latter is a still, dead end fissure with low side passages. The floor is strewn with heaps of long transparent crystal needles up to about 10 inches long and 3/16 inch thick. They are lying on a non-flooding earth floor and the rock above is bare. The only explanation seems to be that they were formed just where they lie, from air borne material. Although they are lying one on top of the other, each one is quite separate.

By 2.00pm the river had dropped sufficiently for Brian to make an attempt to leave the cave. He did in fact get out, although about an hour earlier Peter Robinson, Serbe and Co. (VSA) failed in an attempt to get in - a real stroke of bad luck, forcing them to return through the swamp, rain, leeches, mosquitoes and all. What made it all the worse was that it was that afternoon we made the big discovery.

By 5.45 pm the river had dropped sufficiently for a party of seven led by Allan to push upstream from Base Camp. Twenty minutes and many river crossings later we were 3,000 ft further into the cave and entering the Grand Fissure. Up to this time the cave had been trending NNW but now we were teeing into a vast hall running ENE-WSW. What a beauty! Big, even for Exit. We turned right, for the passages which went closest to Entrance Cave. TCC has offered two dozen bottles of beer to the person making the breakthough linking the two caves. Although one would expect this area of the cave to have been pushed fairly hard, we were determined to give it a go and see for ourselves.

After a rockfall at the end of one passage had been pushed uneventfully, gaining only one chamber and a few hundred feet, we all proceeded to a chamber at the end of the Mud Passage where Nick and I had reported a stream flowing down a rockfall which was normally dry. The Mud Passage itself was quite interesting - about 1000 ft long, the first two thirds heading west, the remainder north, and a dead flat floor with about $\frac{1}{4}$ inch of water flowing over its entire 8 ft width.

Henry Shannon preceded me into a 8 ft high room at the end of previously known section and we both headed to a likely looking spot among the rocks on the north side of the room. I took time off to argue with Ron Allum that our spot looked more likely than his perhaps more logical idea of pushing along the anticline in the roof; he stuck with his idea and disappeared. By this time, Henry had started to poke his head into some holes so I continued over and started to do likewise. Henry's luck prevailed however, and it was one of his which went. We both clambered through. John Bennett had caught up by this time and came through too.

The three of us stood, far from speechless, at the top end of a vast hall- over a hundred feet from floor, to ceiling, vertical walls nearly a hundred feet apart, and the far end of it nowhere to be seen - just blackness. It was one of those rare moments. Probably even John was impressed.

We didn't stand there long; somewhere in the distance water was falling out of the roof, and we headed down the rockfall towards it. Halfway up the side of the next rockfall we found it, and an eventually blind lead was followed in from here.

At this point I suggested we should start a rough survey to guide our explorations and so we could see later how these extensions fitted on the Exit map. We had a Silva compass, a pencil and Henry's little yellow map of Tasmania(the name

tag everyone wore at the Conference). Nevertheless in this little two inch triangle of card Henry managed to squeeze about 1,000 ft of surveyed passage.

We followed 100 ft of dried mud complete with crazy paving of cracks and a 'doline' about 20 ft across - rather like one would imagine a desolate lunar landscape. The passage dropped to about 2 ft high with scalloped bedrock roof and walls and a width of about 15 ft. This section gave the passage its name of Pressure Tunnel. Eventually the roof lifted again at a tremendous fan-shaped deposit of flowstone sloping down from an apex at a gap in the left hand wall and extending across the chamber. The entire deposit, possibly 75 ft across, was covered in flowing water from this gap. Investigating, I found the source of the water to be a sizeable cascade coming down one of those amazing avens.

Joining this stream was another coming in from the right which skirted around the foot of the deposit before disappearing. Our tunnel continued on the other side of the deposit above where the water disappeared. The water briefly rejoined our passage before it headed off down a passage to the left. We moved straight ahead to a dry passage which suddenly wound down steeply to a 10 ft drop into a quite reasonable sized stream. It was muddy and had obviously come from the surface. Excitement!!

We clambered down into the stream. For some reason Henry wanted to go down - stream; John and I thought upstream was the more logical direction. We went upstream. After a few meanders - rockfall! Damn! John gave it the once over and pronounced no way on. It was 9.45pm. We built a cairn and topped it with a little card from a flashbulb packet with our names and the date, and had a snack.

At about 10.30pm we heard voices and soon Allan Keller and party arrived - really upset they'd been when they saw our footprints ahead of them. For the next quarter of an hour, the air was filled with excited voices, each trying to drown the others out; we were sure we were very close to Entrance Cave - it even was 'just the other side of that rockfall'. Still, it had been a long day, and we started to head back to camp, and our party still had to complete the link in the survey between the end of the previously known cave and where we had decided to start surveying. We got sidetracked into several minor chambers on the way back but eventually finished the survey.

At 1 am we were back at Base Camp. 2.30am and one three course meal later we all hit the sack. It had been a good day. One lone figure remained up long after everyone else had drifted off - it was Henry, plotting up his survey figures, so we could see them in the morning.

Sunday January 3

We were up at 10.30 am in time to meet Brian coming back from outside. He reported a fine day which offered good prospects for the river level behaving.

Superimposing Henry's traverse on the main map we discovered that we were nowhere near Entrance Cave but had passed it well to the west. Brian estimated we were very close to another swallet altogether which they had not previously bothered to investigate. The two dozen bottles began to recede. If we wanted to get to Entrance Cave we would have to push all east - trending passages from our extension.

At 12.45 pm we headed back to it. The original team of Henry, John and I, augmented by Nick White and Bev Riley, would push all extensions, while most of the

others would carry out a more accurate survey with prismatic, abney and tape.

Several leads were followed unsuccessfully. Moving to the final rockfall, we met up with the survey party and some others. Lying on a rock was skeleton of probably a possum. We were apparently fairly close Ron Allum and someone else stripped off and pushed the rockfall at water level but had to give it away. John Bennett pushed a passage which still goes on the other side of a pit. he couldn't cross.

Moving now to the north-west of the chamber we eventually found a way down the loose slabs and followed to the south. Suddenly we came upon a hole dropping about 30 ft to a good stream. Then just as suddenly, the survey party appeared in it! Talk about instant surveying! What had happened was that our new extension had been whipped from under our noses from a parallel direction. There was virtually no doubt that the stream we were following was the one which came out near the main T - junction of the Grand Fissure.

Monday January 4

We awoke at 10.30 am to hear Brian saying the river had risen about 2 ft over night and was now 3 inches above its highest so far. We obviously wouldn't be leaving for a while yet - what better excuse to turn over and go back to sleep. At 1pm we were served tea and pancakes in bed, courtesy of Henry and Bev. Most people were moving around talking by 2.30pm. The river was dropping again. For tea, Nick John and I shared soup, Rosella savoury mince (de-hy) with peas and Deb, and lemon cocomut pud - quite a hearty meal.

By 7.45pm the river had dropped 6 inches and was now navigable again. However Brian considered that as we had no urgent necessity to be out of the cave it was worth risking another rise in the river and waiting until morning, rather than with either setting up camp in the rain, slush, leeches and mosquitos, or finding our way through the swamps in the dark and still having to set up a similar camp at the other end. We had no objection to staying. The plan was to get up at about 3 am and arrive at the entrance about daybreak. The concern about river heights arises because a one inch change near the Inner Base Camp means about a one foot change at the critical points near the entrance.

Tuesday January 5

We were in fact out of bed by 3.15 am and very glad to see that the river had fallen by a further 6 inches. By 5.30 am the first party of 13 was ready to leave with Allan. Reaching the entrance at 7.20am, we had been underground 107 hours, or 4½ days. We headed straight back to Hobart to prepare for the Mt Anne trip, where the previous party had lowered a stone on a string for 400 ft before it touched the bottom. (this artcle extracted with minor editing from "NARGUN")

* * * * * * *

AD HOC COMMISSION ON TERMINOLOGY

The Convenor of the ad hoc Committee on Terminology has requested Societies for their views on currently recommended terminology in speleology. Adopted by the A.S.F. in 1960, this Report summarizes much more comprehensive lists circulated earlier. Those interested are invited to contact Mr J.N. Jennings, Research School of Pacific Studies, Australian National University, PO Box 4, CANBERRA

(Mr Jennings will be overseas until November 1971)

AUSTRALIAN SPELEOLOGICAL FEDERATION COMMISSION ON LONGEST AND DEEPEST CAVES

BY ROSS ELLIS. SSS

As Convenor of the newly formed A.S.F. Commission on Longest and Deepest Caves in Australia, I am requesting the help of Australian cavers in compiling a reasonable sized , accurate listing. Anyone with information relevant to the Commission is invited to send the details direct to me at

52 Bundock St, RANDWICK, N.S.W. 2031

or ring me at home on 39 5610

DUTIES OF THE CONVENOR

According to the Terms of Reference and Procedures for A.S.F. Commissions, the Convenor of the Commission on Longest and Deepest Caves has the following duties :

1) To compile and regularly update a listing of the longest and deepest caves in Australia according to surveyed data.

2) To forward such data from time to time to the appropriate Commission of the International Union of Speleology.

Another unspecified duty is to prepare the up-dated listings for publication in the A.S.F. Newsletter. Australian cavers will then be able to see what theCommission has been able to come up with and will be able to correct or add new information to the listings.

HOW YOU CAN HELP

I would appreciate help from people in all states of Australia as I am not conversant with accurate lengths and depths of many Australian caves. The people who can help most, of course, are the surveyors. If anyone has surveyed any cave with at least 3,000 ft of passageway, or which is over 240 ft deep (whether it is drawn up or not), it would be much appreciated if they could total up the passage length and/ or depth and let me know.

The only way that I can compile a reasonably accurate list is if I receive help and information from the people who know about the caves. I can compile the information, but only if I have something to work with. I leave it to you to fill in the blank spaces and correct the preliminary lists at the end of this article.

WORLD'S LONGEST and DEEPEST CAVES

As most of you are probably aware, the longest cave in the world is Flint Ridge system, U.S.A. (72.90 miles - 117.32 km.), and the deepest is the Gouffre de la Pierre Saint Martin (3,871 ft - 1,180 m.). The southern hemisphere depth record is held by New Zealand's Harwood Hole (1,210 ft - 370 m.), while the longest cave in New Zealand is Gardners Gut (6.27 m. - 10.10 km.).

Australia does not contain limestone areas with the cave potential to outclass the world's deepest and longest caves, nor perhaps even to be listed among them. Most of the lists I have seen average approximately 20 caves, and our longest and deepest caves start at about half the size of those at the bottom of such lists. Even so, with a bit of luck, the Tasmanians may break the southern hemisphere record in Khazad-dum, at present 950 ft deep, while new passages appear regularly in ExitCave our present longest. Great prospects also await a well planned and equipped expedition to New Guinea.

I hope to prepare a list of the top 25 (or possibly more) caves in both categorities and will present this in a form similar to that used by White (1970). While on the job, I would like to update lists of other statistics of Australian caves, such as the deepest sheer drop, largest single cavern etc.

CRITERIA FOR MEASUREMENT

The following criteria for measuring the length and depth of caves are those set out by the International Union of Speleology in its Commission on Largest Caves (see a translation by Kermode, 1968).

Longest Caves :

> "The basis for comparison for the longest cave is the 'total length', that is to say, the length of all passages, shafts, caverns etc., measured and plotted on a map. The passages must be measured along their longitudinal axis. The 'total length' is the sum of the true lengths and not reduced to plan or horizontal level. When there are several neighbouring caves in one region - perhaps a unit in the genetic sense - it is not acceptable to talk of cave or single system, when one cannot readily verify the connection between these caves by exploration."

Deepest Caves :

> "The basis for comparison for the deepest cave is the 'level difference', that is to say, the difference in altitude between the highest point in an explored and measured system, and the deepest point reached and measured in the same system. It is not acceptable to give as figures of 'level difference', the difference in altitude between the highest sinkhole in a karst region and the lowest resurgence of that region, when there is no explored and measured connection between these two points."

Longest Sheer Drop :

> "The sheer (vertical) drop is defined as the 'vertical distance between the mouth of a shaft or chasm and the point touched by a plumb-bob attached to a horizontal across the mouth of that shaft or chasm.' In practice,it almost always is a ladder or winch cable which serves as the plumb-bob. If the ladder or cable touches the side tangentially and is deviated from the vertical by an occasional bulge, it can be ignored, on condition that the vertical axis of the shaft or chasm is still itself strictly a sheer drop."

I . U . S . COMMISSION LISTS

The Commission on Longest Caves is compiling four lists and has set a qualifying length and depth for each. They are as follows :

a) The longest caves (more than 3,000 m. - about $1\frac{7}{8}$ miles)

b) The deepest caves (more than 200 m. - about 656 ft.)

c) The deepest sheer drops (more than 150m. - about 490 ft.)

d) The highest caves (more than 2,500 m. above sea level - about 8,840 ft.)

PREVIOUS LISTS of AUSTRALIAN LONG and DEEP CAVES

Although I have not extensively searched Australian speleological publications for lists of long or deep caves in Australia, the ones that I know of at the moment have been on the deep caves. No comprehensive list of the long caves of Australia has appeared as yet, although the two longest have been described in a brief article (anon 1971a) and several other contenders were named. A list giving the four longest pitches has appeared (Kiernan 1971), the longest of which is the Entrance Pitch in Kellers Cellar, Tasmania, at 420 ft. Another lists singularly the longest, deepest largest and highest Australian caves, their contents and other related information. (Ellis 1966).

PRELIMINARY LISTINGS

A list of 25 contenders for the longest and 25 for the deepest caves in Australia has been prepared as far as information I have at present permits. Most of the measurements are only rough estimates, particularly in the case of the longest caves (to the nearest 100 ft.). References which give any indication of the actual total passage length are very rare. Fortunately, the deepest caves are better documented. The lists are by no means complete or accurate, and are published here to get the ball rolling. I feel sure there will be a considerable amount of reshuffling and new names will no doubt be added.

Surveyors, don't let your state down. Let me know the accurate length and depth of caves in your areas. In the revised list, a matter of a few feet could make the difference between being long or short, deep or shallow.

It is hoped that a revised, more accurate list might be prepared by later on in 1971. This list will then be sent to the I.U.S. Commission on Largest Caves. Your co-operation is requested.

Provisional list of the Longest Caves in Australia

1. Exit Cave	Tas	10 miles +	13. Hogans Hole - Fossil Cave	NSW	5000
2. Mullamullang Cave	WA	7 miles +	14. Cutta-Cutta Cave	NT	4500
3. Mammoth Cave	NSW	8000 ft	15. Dip Cave	NSW	4200
4. Royal Arch Cave	QLD	8000	16. Easter Cave	WA	4000
5. Victoria Cave	SA	7000	17. Eagles Nest system	NSW	4000
6. Niggle Cave	QLD	7000	18. Southern Tourist Caves (Jenolan)	NSW	4000
7. Cave Spring Cave	WA	7000	19. Markham Cave	QLD	4000
8. Colong Cave	NSW	7000	20. Olsens Cave	QLD	4000
9. Northern Tourist Caves Jenolan	NSW	6000	21. Mt Hamilton Cave	VIC	3900
10. Croesus Cave	TAS	5400	22. Scrubby Creek Cave	VIC	3550
11. Newdegate Cave	TAS	5400	23. Camooweal Four Mile Cave	QLD	3500
12. Khazad - Dum	TAS	5300	24. Punchbowl - Signature Caves	NSW	3500
			25. Punyelroo Cave	SA	3000

Provisional List of the Deepest Caves in Australia

1.	Khazad - Dum	TAS	950 ft	13.	Fossil Cave - Hogans Hole	NSW	400 ft
2.	Tassy Pot	TAS	800	14.	Mullamullang Cave	WA	390
3.	Mini-Martin - Exit Cave	TAS	720	15.	Drum Cave	NSW	345
4.	Midnight Hole - Mystery Ck. Cave	TAS	665	16.	Pillingers Creek Cave	TAS	325
5.	Growling Swallet	TAS	560	17.	Bone Pit	TAS	320
6.	Kellers Cellar	TAS	510	18.	Marbla Cave	SA	310
7.	B 24 (unnamed cave)	NSW	485	19.	Herberts Pot	TAS	300
8.	Tatans Lair	TAS	470	20.	Murra-el-elevyn Cave	WA	290
9.	Revelation Cave	TAS	450	21.	Weebubbie Cave	WA	280
10.	Rift Cave	TAS	430	22.	Tommy Grahams Cave	WA	280
11.	Argyle Hole	NSW	420	23.	Erebus Cave	TAS	275
12.	Grill Cave		410	24.	Speaking Tube	QLD	250
				25.	Niggle Cave	QLD	245

All depths and lengths in the above two tables are minimum known or estimated figures.

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DOWN UNDER ALL OVER

----- NEWS FROM AROUND THE SOCIETIES

BMSC has continued systematic work at Abercrombie under President Ian Bogg, numbering caves, and at Tuglow and surrounding areas

CEGSA has hit Mullamullang again and managed the impressive feat of climbing the wall of the Dome at the far end of the cave (an account of the 140ft climb is being solicited). The south doline was pushed further down but seems to end frustratingly another 40 ft down. Perhaps the most frustrating part of the trip was having to travel 230 miles up and down fences trying to get the 30 odd direct miles from Madura to Mullamullang. Easter was spent on Kangaroo Island and most of the other work has been done at Naracoorte where Victoria Cave continues to grow.

CQSS "The Explorer" newsletter has completed its first year of publication most successfully. Well edited and comprehensive, it must be the biggest provincial club publication in the country. Its first year chronicles no less than 44 trips, 19 new caves discovered, 21 digs under way. It is barely six months since release of "Mt Etna Caves" by UQSS, yet already CQSS reports nearly twice as many caves at Limestone Ridhe as were listed there.

MCG have written to say they are neither asleep nor inactive. A limestone outcrop at Millthorpe, near Blayney, has been investigated and about ½ acre found - more trips to be held. 3 small caves found at Apple Tree Flat near Mudgee, and further trips are needed to investigate more limestone nearby. Three trips went to Colong where passages up to Pulsating River have been explored systematically. Vandalism seems to be increasing rapidly. Surface trogging turned up several possibilities

(correspondent : Keith Oliver)

ISS Tasmania has left ts imprint on the one ISS Newsletter to have reached me this year. Bendethera, however, has continued to receive most of the local support. Bungonia has been hit several times and assistance was given to Boy Scouts training for speleologist badges.

(by the way, ISS, there is no need to be coy about your newsletters, which come on average once a year. Readers <u>are</u> interested in hearing about your activities)

KSS Reports 24 members this year. They have hosted trips by UQSS, NUSS & SSS this year in the Macleay Valley. Luxury caving was had by light aircraft ostensibly delivering goods to floodbound people in February, but the opportunity was taken for aerial inspections of limestone outcrops. In association with NUSS, several caves at Windy Gap have been surveyed and co-operation between KSS and NUSS continues at the previous commendable level.

NUSS

have done most of their caving in the Macleay; mapping and digging have proceeded apace. Other trips have been less than successful: "five yards later the gearbox expired, and with it the trip" (Colong) The Newsletter, "Cave" devotes a great deal of space to conservation, and not just of caves. Lake Pedder, Myall Lakes and the rest have received their due as well.

SSS

52 trips are reported for 1970-71, a most successful year in which a record volume of publications was produced. Top area has continued to be Bungonia in preparation for a publication, but for a comprehensive view of the Society's activities, see JSSS for March 1971, p. 64-67. Perhaps the main talking points this year have been the seminars on Jenolan and Wombeyan which attracted interest from other societies. Although little new seems to have been said, interest has been stimulated by pooling of knowledge and further such meetings are planned on other areas.

SUSS

Activities have centered at Jenolan with 11 trips mapping about 7,000ft of passages in Mammoth and Wiburds Lake Caves. The latter may yet top one mile in length. In Mammoth, a 300 ft passage 'overlooked' after its discovery by SUSS in 1961 was relocated in March. On the surface, an extremely high accuracy traverse and level by Ted Anderson has pinpointed Mammoth Cave on to the national grid and given cave levels relative to the Blue Lake base level.

UNSWSS

Aside from the more publicity prone members (see elsewhere this issue), there has been great activity in the ranks. Major interests continue to be Tuglow ('only been at it 14 years, sonny') where the end escapes exponentially as the surveyors return, Bungonia (80 odd caves surveyed with SSS), and Wyanbene. Membership has increased rapidly. 'Contract' surveying and caving with other societies is a new service (Ian Wood, Ted Anderson, Andrew Pavey) - with both SUSS and SSS at Jenolan, CSS at Cooleman, TCC in Exit and Mt Anne. Newsletter 'SPAR' has been regularised in a new format. Perhaps the most exciting discovery lately has been a unique troglobite at Wee Jasper, Rarustcaver albertus.

(correspondent : Andrew J.Pavey)

UQSS

seem to have been everywhere, certainly Sydney has been suffering a surfeit of them lately. Tasmania, Yarrangobilly, Jenolan, Wyanbene, Moore Ck, Northern Territory . . . Queensland has not been entirely neglected though and the old stamping ground at Mt Etna / Limestone Ridge has been visited frequently. The Society's big guns are now swinging around to Texas, where a publication similar to that on Mt Etna is planned.

VSA

Principal results of the year's work for 1970-71 :

1. recording of five lava caves at Warrion near Colac
2. survey new extension in Scrubby Creek Cave
3. numbering of new caves in Potholes area, Murrindal, and commencing mapping
4. further exploration and cave numbering on Mitta Mitta River.
5. mapping of the upstream section of Dalleys Sinkhole
6. new exploration in Timboon area near Port Campbell, one significant cave found.
7. limited access to certain Reserve caves for scientific purposes

(from VSA Record Keeper, Peter Matthews)

Area Reports

B U N G O N I A

Both UNSWSS and SSS have been particularly busy at Bungonia since the last summary (ASF Newsl. 48, March 1970). Most of this work has been concerned with surveying and positioning on the surface map of all the caves at Bungonia. Numbering and tagging has continued and in one weekend 45 caves were tagged, the total number of caves is now 91 including other items of speleological interest (dolines etc.), with probably another 20 or 30 small caves still to be done. 82 caves have been surveyed. At leastAt least 2 new discoveries have resulted. B 24, the deepest surveyed cave on the mainland (see ASF Newsl. 51, March 1971) and B 72, a quite large chamber near the gate, outside the Reserve. The surveys have produced a number of discrepancies e.g. Grill Cave (B 44) is apparently 5 ft lower than the Drum (B13) but water tracing has proven water flows from B 44 to B 13! Similarly, B 24 is apparently below the Efflux (B 67) which is morphologically unlikely so further surveying may be necessary. The Drum and Hogans-Fossil Extension (B 4-5) have been 'levelled' by UNSWSS using a water filled manometer but figures are not yet ready. Cave temperatures seem uniform at 17.8°C. On two occasions, 4 out of the 5 deep caves at Bungonia have been reached in one weekend by combined UNSWSS / SSS parties; this probably represents the hardest sporting caving on the Australian mainland.

Recent water tracing has not been successful. 3 lbs of fluorescein placed in Main Gully by CSS / UNSWSS had not been detected at Main Gully Efflux after a whole month. Similarly 1 lb placed in the sump of B 24 was not detected at the B 67 Efflux because a flood swept away the charcoal bag. Other recent achievements:

SSS/UNSWSS : Descend north side of canyon from South Marulan by abseiling waterfalls then walk down to Bungonia Creek and back up Gorge to cars.

MSS : commenced a dig in entrance chamber of Argyle Pot (B 31), starting down a solution pit but now extending horizontally. Flying fox arrangement to remove the estimated 10 tons or so of soil. Plans to transport it right out to the surface in near future. Small bones found. Dig continuing.

UNSWSS : traversed pitch in top of the Drum and connected with bat chamber. This had been done previously by SUSS and SSS but is not well described.

SSS ; Digging in Hollands Hole (B 35) to reveal another 100 ft or more, dropping 100 ft or so. Is it another J 41?

(correspondent : Andrew J. Pavey)

T U G L O W

At present BMSC are surveying Moonmilk Cave (T 4), discovered by them a couple of years ago, and they are digging in T 5 as well as tagging entrances in the area. They have also surface trogged Hollanders River and Budthingeroo Ck and although not finding anything exciting, they have come up with a number of small caves. Further prospects are dim.

SUSS visited Tuglow late last year and inspected Horse Gully Sinks which are the water supply for Tuglow Main Cave, A small cave was surveyed in the outcrop due south of the stream sink which is at the start of the alluvial flat in Horse Gully Creek. Limestone outcrops on Tuglow River were also looked at. These outcrops are marked on the Lands Department maps and have been heavily trogged since the time of Oliver Trickett.

UNSWSS have visited the area twice recently in an attempt to finish the survey of the three main caves - Main (T 1), Window (T 2) and Pleistocene (T 3). T 2 and T 3 are complete and T 1 is on the drawing board, literally. This survey was started in 1958 and, including several surface traverses, has utilized 350 survey points of which over half are permanently marked. Temperatures were recorded in the Main Cave with the ambient air temperautre being 12.4 C, whic is to be expected since the cave is about 3,100 ft above sea level.

Tuglow remains a very popular caving area for 'sporting' trips by Boy Scouts and others - "no group mate, just friends, thought we'd give this caving lark a go". It is now part of Kanangra-Boyd National Park.

(correspondent : Andrew J. Pavey)

C R A C R O F T

Tasmanian speleos, tired of just finding new caves, have now taken to finding new caving areas. One such is the Cracroft area in south we Tasmania.

Dolomite has long been supposed to outcrop in the headwater area of the Cracroft River at Mt Bobs. In 1890, Henry Judd, an early Tasmanian pioneer, publ-ished a paper in which reference was made to a cave in this area.

In late February, a TCC - Manuka Club party walked into the area, about 8 miles as the crow flies but in reality somewhat longer due to the thick scrub and high mountains, and found cave entrances, some big, some draughty, in large dolines. The party also noted that the rock appeared to be Gordon Limestone rather than dolomite, which does not have a very good reputation among Tasmanian cavers, and this has since been proven correct.

Then at Easter the cave reported by Judd, since named Judds Cavern, was redisc-overed. At the impressive entrance was a pine plaque into which was engraved the date 1881, and the names Judd, Clarke and a third no longer legible. The cave itself was explored for half a mile (!) to a siphon. The passage is generally 10-20 ft high and 50 ft wide with no decoration. It is an efflux cave. An access track has now been marked and the cave can be reached in a very hard day's walk. The general area appears very promising for deep pots, with limestone of 1000ft local relief.

(correspondent : Kevin Kiernan)

L A K E M A R G A R E T

This is another new area, situated in western Tasmania north of Queenstown. Caves were reported by a TCC member who spent the summer in the area with a geologic-al mapping team. The caves occur in Gordon Limestone outcropping in a creek gorge and contain decoration and glow-worms. They are of large dimensions but are generally fairly short. A TCC Easter trip was thwarted by transport problems.

B U B B S H I L L

A trip to this area by SCS turned up only the scungy little holes for which the area is famed, but TCC at Easter found the only reasonable sized cave known there. The cave, Timothys Watch Hole, has a 90ft entrance pitch and 1500 - 2000 ft of passage developed on several levels with a stream in the lowest, well decorated.

(correspondent : Kevin Kiernan)

STOP PRESS
**** *****

Sydney - Friday 17th. September,

The Metropolitan Mining Warden, Mr. K.S. Anderson today made public his finding in the Warden's Court of enquiry: Warick J. Counsell and the Colong Committee versus Southern Portland Cement Limited. This finding is in the form of a recommendation to the N.S.W. Minister for Mines who will take the final decision and the following is taken from its text:

"I recommend to the Minister that the application proceed for consideration toward the grant of a lease. I recommend that the lease be exclusive of such of the area east of Barber's Creek as is not actually required for affording access from one part to another of the area west of the Creek."

"That the ML 30 dump be stabilised and revegetated as soon as possible. That all areas affected by dumping or by works ancillary to dumping be progressively re-afforested and revegetated;"

"That as far as possible, consistent with safety the public should be allowed access to the leased area. In particular the public should be allowed access to the bed and both banks of Barber's Creek. Suitable warning signs should be erected advising of any danger in any area. Consideration might also be given to a condition requiring suspension or restriction of operations in the leased area during weekends. long weekends, and the Easter, Christmas and New Year holiday periods;"

"That operations be carried uot so that no contamination or pollution of Barber's Creek is occasioned."

SUMMARY:
Having thus reported the entire proceeding in an unbiassed manner as possible, now is an appropriate time to sacrifice some objectivity in order to assess what has been achieved by this important test case.

The irresponsible manner in which this subsidiary of B.H.P. has dumped overburden from its South Marulan Quarry is clearly proven. For more than six years they allowed material to stray 1200 feet from their leases, to seriously obstruct the bed of Barber's Creek and to despoil the landscape. The dump depicted on the front cover reaches 600 feet to 700 feet off the lease and yet at the time of this application up to 1000 tons per day were being added to it. No attempt has ever been made either to prevent material trespassing or to bring it back within their leases.

Unassisted natural regrowth was considered sufficient for these unsightly and illegal dumps despite photographs which show that in the years 1963 to 1971 virtually no revegetation took place.

It is clear that until objections were lodged they intended dumping mullock in this new lease in the uncontrolled and unrestrained manner which they had been using for more than a decade. Objections and the subsequent enquiry forced them to consult a soil mechanics engineer to devise a scheme for the use of only 65 of the 400 acres applied for. At the same time they decided to offer to revegetate the ML 30 dump at considerable expense in order to convince the Mining Warden and the objectors that they intended to turn over a new leaf (not lease). Progressive revegetation of the dump in use and a $65,000 rock wall filter to limit siltation of Barber's Creek supported this new attitude.

We have come a long way, and I agree with the Mining Warden in his observation that: "the only mitigating circumstances regarding the Company's past actions and attitudes is that it is only in the past few years that community consciousness of environmental and ecological questions had heightened."

Warwick J. Counsell

March 1971

number fifty - two

C O N T E N T S

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