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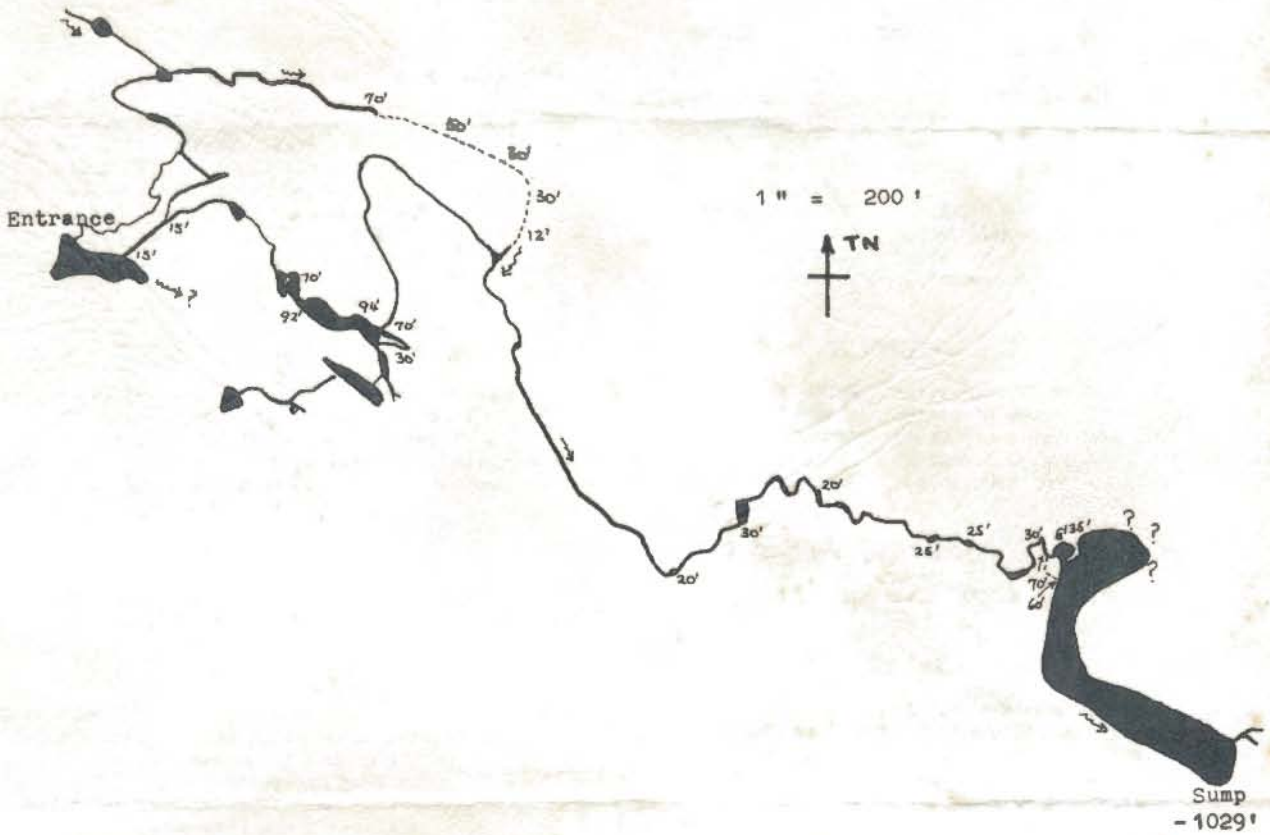
ASF NEWSLETTER

AUSTRALIAN SPELEOLOGICAL FEDERATION



Khazad Dûm

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ASF NEWSLETTER

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Australian Speleological Federation

Edited by John Dunkley, 22/53 Alice Street, Wiley Park, 2195, New South Wales, Australia

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

Number 56
June (winter) 1972

Press Date :
20 June, 1972

C O N T E N T S

EDITORIAL AWARDS, 1971

The quality of speleological publication in Australia improved immensely in 1971 and it was most difficult to make decisions - keep up the good work!

Best Club Newsletter

Criteria used to judge this section were: consistency of layout and departmentation, uniformity of page size, proper pagination, acceptably good printing, material to be neither too puerile nor pitched at an inappropriately high technical or academic level. Functional value is regarded as more important than regularity. The Journal of SSS, while highly irregular in quality of reports and articles, led the field in most of these criteria, and therefore takes first prize. The team work required to keep it going deserves high commendation. Runner-up is Down Under (UQSS), the contents of which make more interesting reading, but it suffers from problems of departmentation and layout. Most improved publication by far is Spar (UNSWSS), the maps in which merit specially favourable mention. Most newsletters showed technical, qualitative and quantitative improvements over previous years and in general the publications front seems to have stabilised considerably. The editor did not receive any Southern Cavers during the year, but past performance suggests that it would be a prizeworthy magazine if the publishers were not so coy about it.

Best Article submitted to ASF Newsletter

What is joy to one is anathema to another, but articles for ASF Newsletter are chosen on the basis of their general interest. Criteria for evaluation then include topicality, arrangement of material, a journalistic style appropriate to function, and proper documentation. Length should be appropriate to content. In order of merit, the best original articles were :

Caves and Karst of Junee-Florentine, Tasmania by Kevin Kiernan (53 : 4-10)
Mullamullang Cave by Alan L. Hill (52 : 11-13)
Easter Cave by Lloyd Robinson (54 : 12-14)

Cave of the Year

There was only one nomination : the prize goes to KHAZAD - DUM

Consolation Prize

MOST PROLIFIC CORRESPONDENT : Kevin Kiernan (but thanks to the many others)

N O T I C E S

NINTH BIENNIAL CONVENTION

The Ninth Biennial Convention of the Australian Speleological Federation will be held at New College, University of N.S.W., Sydney, from 26-30 December, 1972, with field trips to follow. Preliminary registration forms are enclosed with this issue.

DEATH OF ALAN HILL

We deeply regret to report the death of one of Australia's most colourful cavers, Alan Hill (CEGSA) in June 1972. The next issue will contain a more suitable tribute.

ON CAVE NUMBERING AND OTHER THINGS

In August 1970 the NSW Coordination Committee of ASF asked Greg Middleton and Ross Ellis (SSS), on their own suggestion, to prepare a report on a cave numbering system for NSW. This report was duly presented to the Committee in March 1972 and accepted with a few very minor amendments designed to ensure compatibility with data processing techniques. Both Mr Ellis and his society have written stating that they do not endorse these amend - ments and that they will use another scheme. It should be noted that a) the amendments in question were moved by the SSS delegate; b) the SSS delegate voted in favour of them; c) the voting was unanimous.
Consequently this newsletter will continue to adopt the Committee's recommendations.

ASSOCIATION BETWEEN H.C.G. & S.T.C.C.C.

Highland Caving Group wish to advise that they have discontinued their previous close association with the Sydney Teachers College Caving Club

. . . AND IN THE NEXT ISSUE

Apologies for again having to defer the material on south-east South Australia - but this will definitely be in the next issue, along with exotic information on Caving Areas of South East Asia, Fanning River Caves (Queensland) and other interesting articles.

E X I T C A V E , T A S M A N I A

An illustrated lecture drawing attention to the unique features of Australia's longest cave. In addition to its exciting possibilities for the sporting caver, Exit is of immense interest to geomorphologists, biologists and others.

ASF NSW COORDINATION COMMITTEE INVITES YOU TO HEAR AN AUTHORITY ON THE SUBJECT:

Speaker : Albert Goede

President, Tasmanian Caverneering Club
Lecturer in Geography, Univ. of Tasmania

Venue : The Womens College, University of Sydney (off Carillon Ave, Newtown

Wednesday, August 16, 1972 at 8 pm.

A.S.F. PUBLICATIONS

Aside from this newsletter, the A.S.F. publishes a Proceedings of the Biennial Convention, and the book Speleo Handbook

Speleo Handbook : currently out of print. Machinery for a second edition has been set in motion and the book should reappear in 1973

Proceedings, 7th Biennial Convention

Available from Cave Exploration Group (South Australia). Price $ 1-40

Proceedings, 8th Biennial Convention

Available Tasmanian Caverneering Club
Price $3 incl. postage

ORA CAVE, NEW BRITAIN

by R. Michael Bourke

When you see a doline 1500ft deep marked on a map and a fellow speleo (one Alan Keller) has flown inside the lip of the doline *in a helicopter* - well, it is worth a look-see even if it is in a rather remote area...

The doline is a mile long, ¼ mile wide and approximately 800ft deep, with a further 500-800ft to where the water emerges. Itsis in the middle of New Britain, north of the Pomio patrol post on the south coast. The nearest village is Ora, marked as Timomo on some maps. The Kanu River wartime army map covers the area and is the one with "sinkhole approx. 1500ft deep" and "sinkhole approx. 1250ft deep" marked.

To get to the area, I flew Rabaul to Jacquinot Bay on April 10, 1972, and then by tractor, launch, truck and walking to Waterfall Bay. From here it is a two day walk into Ora village and a further 3 hours to the doline. I came out the same way but substituted a chopper for the launch trip, the entire trip taking eight days.

The doline is on a range about 4000ft a.s.l. above Ora and the Esis (pronounced Isso) River. The topography of the range consists of continuous dolines covered in tropical forest with some moss forest. Numerous small dolines were entered, all of which were blocked. It is difficult to estimate accurately the depth of the doline, as dense vegetation covers the near vertical sides. Nevertheless, it is an impressive sight. 200ft down, I was stopped by cliffs and lack of time, but it appears possible to get down at the northern end. By hanging over a cliff, a large cave mouth could be seen, perhaps 50ft high, and a horizontal entrance taking water. The roar of falling water was quite loud. The villager people call the water in the doline "Ora number two", although they said they have no name for the doline or the cave.

The water emerges in a huge jet from a cliff about a mile away to form one source of the Esis River. The resurgence is approximately 1000ft below the top of the cliff and 200ft from the bottom (Alan Keller pers. comm.). The difference in height between the bottom of the doline and where the water emerges would be at least 500ft and hopefully it may be possible to follow the stream all the way; the size of the cave entrance and the volume of water emerging suggest that it might be possible. Potentially the cave depth with avens would be 1300-1500ft. On the army map there are two cave entrances inside the doline, one at the northern and one at the southern end. I did not see the former.

There is an airstrip almost completed at Nutuve Mission and so any future trips one could fly from Rabaul and walk to Ora village in one day, thus saving 2-3 days. The area itself is inhabited by the Kol people and is quiet backward. A cargo cult is established and as my trip was linked with its arrival, I received royal treatment. So if you would like to see a truly primitive area and have a go at a potentially big cave, get in touch. A trip is planned ex Rabaul in August 1972.

above: Outflow cave, Franz Josef Glacier, January 1972 (photo: J.Dunkley)

left: Andrew Skinner on a 90ft pitch in Khazad-Dum (Peter Shaw)

bottom: Franz Josef outflow cave. The left wall appears to be bedrock, the roof and right walls are ice (J. Dunkley)

GLACIER CAVES IN NEW ZEALAND

by C. HENRY SHANNON

There are real live glaciers to be seen in New Zealand, and the sight of them is sufficiently staggering to warrant spending good caving time in such tourist infested places as the Hermitage. There is after all some interesting caving to be done there - inside the glaciers themselves. For all practical purposes a valley glacier in New Zealand is a karst terrain even though it is not customary to think of a glacier in these terms.

As everyone should know by now, glaciers are moving masses of ice by which the unmelted surplus snow comes down from above the snowline to warmer country where it eventually melts. They are poetically described as "rivers of ice" but this is not the whole story; the moving ice, to be sure, is what makes it a glacier but there are thundering great caves running through the ice, and the rivers running in the caves account for most of the flow in cusecs. Near the foot of the glacier the component of the flow occurring as ice decreases to nothing and the entire flow goes through the caves.

In the vicinity of the Hermitage there are three big valley glaciers and also a great number of smaller hanging glaciers. All have big streams running out of them in summer, though in winter the flow stops at least some of the time. The New Zealand glaciers are going through a bout of recession which has been going on since about 1920, but the valley glaciers at the Hermitage have shrunk downwards rather than backwards, because they are extremely thick: if the Tasman glacier melted quickly it would leave behind a deep lake.

The melting of the ice has left moraine debris all over the lower part of the ice which looks rather messy but is easier to walk on than the white ice (crampons change this). Also a 400' fall in the ice surface has left unsupported the lateral moraine till which now keeps sliding down on to the glacier. The glacier caves are now closer to the surface than they used to be, and there are cenotes with muddy water in them where the meltwater stream shows through. There are karst windows where the cave has collapsed in the Hooker and Mueller Glaciers. Small sinkholes occur all over the ice.

I spent most time at the Hooker Glacier. At the snout there appear to be two streams, one on each side of the river which comes from the third spring which in turn emerges from the side of the glacier a mile upstream. Neither of the springs at the snout looked enterable, particularly the one across the

river from the ice wall. This spring looks like a deep phreatic efflux, and it comes up through gravel as a mound spring. The water fizzes slightly, and is comparatively clear. The spring in the ice wall might normally come out an enterable cave but it was blocked up with fallen ice. The third spring was coming from a cave I went into - a somewhat risky business because rocks keep falling down over the entrance. The cave runs off and disappears around a corner. The walls of the cave are sculptured in a scallop pattern much bigger than normal, 1 to 2 feet across.

The main elements of the wall sculpture were the same as in limestone river caves. River niches were present in a series going up 15' above water. A very big one was forming at the present water level; I would guess by looking at the water that it went in for 10 feet.

Perhaps the aspect of ice cave speleology most useful to us is the speed at which cave development occurs. In limestone we have to infer that incut niches form, say, from outgrowth of meanders. In glacier caves you see them growing.

I suspect that winter would be the best time to mess about in these caves. The Mt Cook guidebook shows the Hooker River nearly dry at that time - I suspect that the caves just drain rather than block up. As it is, summer you are pelted with rocks at the entrance,get exposure and/or drown if you slip into the river, drown if rain melts the ice, and virtually drown if it's fine and the ice melts. Perhaps this is why the caves have apparently had little investigation.

The colour of the ice is white shading pale blue the further in you go. The ice is very slippery but I was able to get in on several gravel drifts for 100'. I wonder that any more could be done with ice axes and crampons - I would not like to tangle with the water, the current is really fierce and because of the rock flour content you can see only a few inches into it.

Leaving the cave in the middle of the glacier I crossed moraine covered ice to a big depression containing an exposed portion of the other large river. It came from an even more impressive cave with a veritable barrage of stones from the clifftop above. I went in 150' but, lacking light, did not try a harrow branch which might have brought me to the next reach of the river. The river running out ran 400 yards through a gorge to a small cenote containing floating ice like a revolting fruit punch. There was a much larger cenote further on.

In the white ice areas the whole surface studded with crevasses which owe most of their volume to meltwater erosion. The two rivers I followed probably drain the surface of the glacier and are separated by a medial moraine.The other one may come from the ice-bedrock contact. The hanging glaciers may be easier to explore because of their steep gradients and bedrock floors. The outflow of the Franz Josef was in a ferocious state when I saw it - in addition to the forms of sudden death available at Mt Cook there was the prospect of being skittled by icebergs, which also littered the banks for a mile downstream. John Dunkley was able to get inside in better conditions and got some photographs. There do not seem possibilities around Mt Cook for the type of swallets seen by John with Ted Anderson at Franz Josef.

I was left wondering whether the potential of the ice karst in New Zealand might dwarf the tremendous prospects of the limestone caves.

POSTSCRIPT ON GLACIER CAVES

by John R. Dunkley

Henry Shannon's note on glacier caves appears to be the first from this part of the world, though there is a small foreign literature, mention of such phenomena being made last century (Russell 1893).

In Europe a cave in the Rhone Glacier, Switzerland, is open to tourists. In America the best known example is probably the Paradise Ice Cave system on the Stevens Glacier, Mt Rainier, Washington, about which there is fortunately literature accessible to speleologists (Halliday & Anderson 1970, Anderson & Halliday 1969).

Some 2½ miles of passages are known in the Paradise system, traversible from snout to headwall of the glacier. Due presumably to retreat of the glacier and its relatively steep gradient, the caves are reasonable stable over periods of at least a few years, enabling them to be opened to tourists.

Shannon suggests that springs at the snout of the Hooker Glacier indicate phreatic speleogenesis. Although supporting the rôle of phreatic water in the early stages, Halliday's observations in America are that accessible glacier caves are much too large to have been enlarged phreatically, even in seasonal peak flow. The mechanism of enlargement seems to be aerogenic: passage of warm seasonal air with seasonal reversal due to barometric differentials.

With some difficulty, the author investigated the snout cave of the Franz Josef Glacier in January 1972. The entrance is about 30' high and 50' wide, from which a turbulent milky torrent of the order of 50 cusecs issued forth. Large blocks of very slippery ice littered the vicinity and Ted Anderson assures me that rocks and ice blocks were tumbling over the snout while I was inside. I went in about 50' and without a light could see perhaps another 150', the tunnel continuing with undiminished size. Ice blocks piled on the banks of the stream would permit further progress without getting in the stream if one had an ice axe, crampons and a good deal more nerve than mine; it was the most dangerous cave I have ever set foot in. With Ted Anderson I also had a look at a large swallet formed where a waterfall from a hanging valley tumbles straight into the ice. This had a bedrock floor, looked no more dangerous than many a limestone cave as in Tasmania, and might well be assailed with rope and jumar and guts.

Ideal conditions for accessible glacier caves would seem to include: glacier to be fairly small, in retreat, hanging rather than in a large valley, and at not too low an altitude, Best time for exploration would be in winter, possibly at night. This rules out the Tasman, Hooker, Mueller, Godley, Murchison, Fox and Franz Josef among New Zealand's better known glaciers. Permanent fluvial tributaries of the

latter two are a likely hazard, as is their exposed position on the NZ West Coast. There are numerous small prospects elsewhere: the Malte Brun Glacier looked quite a likely possibility, viewed from a few hundred feet away. It is reasonably easily accessible and the whole Malte Brun Range would be drier and less prone to storms than the West Coast.

As Shannon notes, most karst features of erosion, transportation and deposition are observable in glaciers with the time dimension much foreshortened. The main glaciospeleogenetic process is, of course, the result of melting rather than solution. Nevertheless, glaciers may give some insight into the real nature of speleogenesis - the process of mass transfer.

Two other forms of ice caves, not analogous to limestone ones, have been described. In Alaska's Casement Glacier, caves have been formed by modification of the ice flow in the lee of an obstruction; these sound like little more than crevasses to me. Mitchell (1969) describes caves in the crater rim of Mt Rainier formed by steam vents, which were explored to a depth of 160'. Analogous possibilities exist, one would imagine, on Mt Ruapehu, New Zealand, but I would recommend exploration of these as even more a death wish than looking at conventional glacier caves!

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R. Michael Bourke — UQSS, now resident in New Guinea. Conservationist from way back.

John R. Dunkley — Editor ASF Newsletter, President SUSS, caved extensively in all states & in Africa, Europe & NZ .

Phil Robinson — TCC, participated in many trips to Tassy Pot, Khazad-Dum etc.

Lloyd Robinson — ISS/SSS/WASG, possibly best known for rediscovery of Easter Cave and work in other caves of S.W. WA.

C. Henry Shannon — Professional hydrologist, UQSS/SUSS, caving since 1959, mainly interested Jenolan, Texas, Windy Gap, Tasmania, New Zealand.

CAVES OF AUSTRALIA

NO. 5 : KHAZAD - DUM

by Phil Robinson

The Junee resurgence near Maydena has been known for many years. It averages a flow of 30 cusecs rising to over 150 in flood conditions. Early trips of TCC in 1946 explored 150ft of passages by rubber boat to a large sump which was dived in 1965 to a depth of 55ft and length of 550ft. Hopes of finding a way into the system from above led TCC to search high above Junee Cave in the densely forested slopes of Mt Field National Park (see article by Kevin Kiernan in ASF Newsletter 53. Many deep potholes were discovered, the deepest and most aqueous being JF4 (later called Khazad-Dum). Other major swallets include Cauldron Pot, with an impressive 150ft entrance waterfall, and Niagara Pot, severe, 450ft deep and still unexplored.

In 1969 sorties in JF4 were soon halted by a fierce volume of water. Another entrance, JF5, was found 200 yards away. This contains a 30ft entrance climb and two dry 60ft pitches before joining the main streamway of JF4. Just before Xmas 1970 a traverse at the base of the first 60ft drop led along and down to a small ledge above the next waterfall, to a dry 100ft pitch. Lack of gear stopped further exploration at this point and it was left for the resources of a fully equipped task force from the 1970 Hobart Conference of the Australian Speleological

During the first week of field trips a major find was made 150ft from the entrance. A high level lead was sighted, entered witha scaling pole, and followed down several dry passages and pitches, enabling us to bypass three waterfalls and to rejoin the main stream at -450ft. The major problem was now the notorious 92ft free hanger - not a long pitch, yet after hours of wet caving it became quite an obstacle. By the second week of ASF Field Trips the system was down to -630ft (survey by L. Kavalieris, NUSS) and once again progress was halted by several short waterfalls.

Departure of the mainlanders did not dampen enthusiasm. One week later TCC pushed down Serpentine extension to -500ft and later linked it with the main cave . In a 17 hour bash on 27/1/71, a joint TCC/SCS party of 8 descended four waterfalls of 30, 15, 25 and 25 ft to yet another extremely wet 30 footer leading out to a deep wet waterfall into the unknown. The Australian depth record had been broken at 830ft but exhaustion was creeping in - the 92ft ladder pitch was a major hazard on the return and one man was hit on the ankle by a rock falling 40 ft. It took nearly a month for all to recover.

On 27-28/2/71 another combined team will never forget the 21 hour round trip in which progress continued to yet another great waterfall which Kevin Kiernan was able to descend only 30ft before being hauled out half drowned. Time prevented checking of a deep dry shaft and as it was, exposure and weariness due to the tackle resulted in two cavers nearly falling down waterfalls. Some swore never to return but it was decided to have one more push before winter. But the chosen day dawned grey and misty after a week of rain and all hopes of reaching 1000ft before the snow came were dashed. Instead, a new access track was cut, making the trip in much quicker, and Albert Goede's fluorescein reappeared after only 12 hours in Junee resurgence, 1250 ft lower and 2½ miles from Khazad-Dum.

With the snow melting and the weather brightening, a bolting trip on 30/10/71 followed crashing waterfalls down to the 580ft level beyond which the torrent could not be avoided. A telephone was laid down to 450ft.

Two attempts by TCC in early December were thwarted by bad weather. The situation was increasingly frustrating - so much tackle, so much wasted effort. The gear was left in the cave on Dec. 12. The next weekend was at last clear and with the system already laddered to 700ft the six waterfalls were quickly descended to the large dry shaft awaiting exploration. This proved to drop 135ft into an enormous chamber some 200ft high and up to 200ft wide. Down over boulders to the streamway 30ft high and wide, sand banks, a crawl, and then the sump, a disappointing 20 ft across, but still the deepest in Australia.

Success of the final expedition was attributed as much to the support team of 15 as to the assault team of 5. Careful planning and preliminary rigging enabled us to reach the bottom and return in 14 hours on the Saturday. Derigging the following day took the support party only 3-4 hours.

It was decided to have one more trip to survey, photograph and finish exploration, bottoming the cave and detackling in one day. But Tasmanian weather struck once again, and the gear had to be left at 580ft on March 11, 1972. Fine again, March 25-26, and the bottom was reached and surveyed to -1029ft. Crawls were pushed near the sump and a steep 50^{o}-60^{o} slope opposite the last pitch led up into a large upper passage containing the only decorations so far found in K-D. Lack of time...

So exploration in the final chambers is incomplete. The old upper level could well lead past the sump and hopefully on into the postulated Junee master cave. The crawl near the sump have not been fully pushed thoroughly either. A full expedition is the answer to really explore the lower reaches as there is insufficient time to explore it in one weekend. So much frustration laddering and deladdering weekend after weekend, delayed by bad weather etc. The sandbanks at -1000ft provide a good campsite. Supplies could be ferried in by a support team and a telephone is already down to -450ft. Fit and capable potholers and cave divers are welcome. Time set is Australia Day long weekend, January 1973. Please contact TCC (address inside cover).

C A V E S A F E T Y

RECOMMENDATIONS FOR PRACTICE

by Lloyd Robinson

Introduction

At the ASF Committee Meeting in January 1966, I was appointed Convenor of the ASF Safety SubCommittee (later changed at the December 1970 meeting to the Commission on Cave Safety). The scope of the Committee's terms of reference are

1. To prepare a guideline document on caving safety for approval by the Committee and circulation to member societies.
2. To maintain a register of all cave accidents and to compile summaries of these for publication in the Federation newsletter.
3. To foster liaison between societies and/or liaison councils in respect to search and rescue organizations or procedures
4. To represent Australian speleology on the appropriate commission of the International Union of Speleology

At the January 1972 meeting the Guideline Document on Cave Safety as detailed below was presented and accepted by the Committee. The recommendations are for the information and not necessarily direction of societies.

Pre-Trip Organization

1. No-one to go caving alone. Desirable minimum size of party - FOUR
2. Each caving trip to be under the control of a trip leader possessing qualities of responsibility discipline and temperament needed to ensure the safety of the party and protection of the caverns.
3. Suitable helmet, clothing (one piece boiler suit) and footwear to be worn when underground.
4. First aid kit to be carried on all trips and kept at the camp.
5. Two totally independent forms of lighting to be carried by each person.
6. Inspect for wear and damage all equipment (i.e. safety lines, abseiling ropes, cable ladders, climbing aids, winch ropes etc.) whose failure could result in injury. Ensure such equipment does not suffer chafing during transport or come into contact with chemicals e.g. battery solutions.

Above Ground Organization

7. Don't take underground anyone whose ability is affected by drugs or liquor.
8. In the event of all persons on a trip going underground at the same time, leave some indication campsite of whereabouts and expected time of return.
9. When entering caves where flash flooding could prove hazardous, ensure effective communications with the surface for weather change warnings.
10. Care should be taken to avoid becoming lost or separated above ground when visiting remote caving areas (Bendethera, Nullarbor, Kimberley, Camooweal, Tasmania etc.).
11. Ensure radio transmitting equipment is switched off when using explosives.

Ascents and Descents

12. A safety line should be used in any situation where a fall could result in injury. The trip leader should make the decision considering :

    a. Experience of the party
    b. Physical condition of party at the time
    c. Difficulty of rescue should a fall occur
    d. Difficulty of the obstacle

    On pitches in excess of twenty-five (25) feet a safety line should be mandatory.

13. A belay man should be experienced in same and securely positioned.

14. Only one person at a time should descend or ascend a cable ladder, rope or winch.

15. At least three (3) members of a party should be experienced in knots and the use of climbing equipment where the trip involves the use of such equipment.

16. Alternative means of contact to be used on pitches where unaided voice contact is difficult,

17. Care to be taken with safety line to avoid damage by sharp projections or boots.

18. Abseiling underground should only be used where other methods are impractical (optional clause)

19. Don't use abseil ropes as safety ropes or vice versa.

20. Helmet mounted naked flame light not to be used when ascending or descending a pitch.

21. Use only metal cables on powered man winches.

22. Do not engage in horse play, rock throwing etc.

Cave Diving

23. Do not attempt to force siphons alone or without proper diving equipment. A diving party to consist of at least five (5) persons: lead diver, follow-up diver, emergency diver, telephonist and runner.

24. Divers must be attached to a suitable guide line in all siphons or near-siphons.

25. Communications to be established through all siphons by the lead diver and maintained by an outside party where the trip leader considers it necessary.

General

26. Safety lines, abseiling ropes, cable ladders and man winch ropes not to be used for other than their intended purpose. e.g. towing cars.

27. Dry out ropes etc. and store in a cool dry place out of direct sunlight.

28. Do not uncap carbide lamps in confined places.

29. Ensure reserve supplies of carbide do not become damp.

30. Carbide lamps are not reliable indicators of foul air. Use matches or candles as indicators if foul air is suspected. If still in doubt more sophisticated detection equipment should be used.

31. Do not use copper in modifying carbide lamps.

32. Do not construct cable ladders of materials likely to cause electrolysis e.g. copper ferrules on steel cables.

33. Internal combustion engines not to be used underground or on the surface where exhaust fumes are likely to enter a cave.

34. Persons using explosives should be experienced in their use. Extreme care should be exercised to avoid explosive fumes, especially underground. Advice should be sought on explosives that give off less toxic fumes for underground use.

35. Ensure that cords used to carry whistles, lights etc. around the neck will break with reasonable ease should they become caught during a slip or fall.

36. The Trip Leader should ensure that no member of his party is coerced into a situation beyond his capabilities.

37. Advice should be sought from local clubs as to caving hazards when visiting unfamiliar areas.

INTERIM REPORT OF THE AD HOC COMMITTEE ON SURVEY STANDARDS

by Edward G. Anderson

Terms of Reference

To carry out a thorough review of the guideline document on survey standards. This document was prepared by R.T. Sexton and adopted by the Federation in December 1962 (Sexton 1962).

Activities

A statement of intentions and preliminary request for opinions (Anderson 1971) brought absolutely no response apart from a few unprepared verbal comments by nearby colleagues.

Preliminary Proposals

Personal research and experience has led me to believe that the following alterations to the existing standards are both necessary and feasible. However, I would like to see some practical demonstration of national opinion before I draft the relatively complex technical details of the final recommendations. Following the system of existing standards, the preliminary proposals are:

1. Scale

Introduction of the International System of Units in accordance with the appropriate Australian Standard (Standards Association of Aust. 1970) for all new work (this is possible without immediate replacement of survey equipment). Publication of all maps and surveys completed in the Imperial system to include additional metric scales and information.

2. Survey Grading

Introduction of an Australian grading scheme, based on the assessable or known accuracy of instruments and techniques commonly applied in this country. Such a scheme should specify clearly the expected accuracy of both the survey control and the detail mapping. Comparison with the existing (CRG) standard is desirable and a trial period, allowing for minor alterations, may be considered necessary. However, a definite decision to change to an Australian scheme must be finalized before any such pilot scheme is introduced. (Refs.: Ellis 1963, Butcher 1964, Jennings 1964, various J.Syd.Speleol.Soc., Trans.Cave Res.Grp.Gt.Britain 8 (2) & 12 (3) & various ASF Newsl.).

3. Drawing Sheet Sizes

The introduction of metric sizes must be taken into account. Further, the concept of publication of maps in books and technical papers is to be encouraged, rather than the storage of a few personal copies (usually large scale sheets) in club or personal record collections (see also the section on Cave Survey and Map Record Keeping below).

4. Symbols

Some minor modifications to the existing standard may be desirable, to more closely align with Australian common usage, and to allow for increased interest in and knowledge of morphological principles, among cave mappers. Generally, the basic set of symbols for ordinary mapping purposes should be kept to a minimum. Updating of topographic map symbols to conform with National Mapping Council recommendations is necessary.

5. Information to be recorded on the Final Map

Apparently no changes are necessary, except perhaps a slightly different emphasis on the importance of the survey datum. (see National Grid References and Datums below)

Three further sections seem necessary, as follows :

6. Cave Survey and Map Record Keeping

A number of systems of centralized record keeping are feasible :

a) At the very least an annotated map index should be instituted at the national level.

b) If a relatively standardized form of map publication could be introduced, the further step to either a centralized file or collective publication on a regional basis, or ultimately a "caving atlas" would be greatly facilitated.

c) Micro- or 35mm film slides files are being considered.

Standardization of sheet sizes, form and presentation are all important prerequisites of any of these systems of information storage and retrieval.

7. Surveying and Mapping Terminology

There exists an urgent necessity to standardize the technical terminology used on published cave maps and surveys and in separately referring to them. Virtually all of the appropriate terminology exists and is commonly employed in the surveying, cartographic and engineering professions, and correct usage must be introduced to speleological activities to reduce existing confusion and the possibility of imminent chaos.

8. National Grid References and Survey Datums

It is now feasible for the Australian speleologist to relate all cave surveys to at least one of the National or State Reference Systems. Such a concept permits complete integration and coordination of surveys within and among areas and provides absolutely permanent identification of all caves included in such surveys. An arbitrarily assigned cave number does not facilitate relocation of the cave - a National Grid Reference does. I intend to recommend that every effort be made to put all our caves on the Australian Map Grid. To facilitate this effort I will further recommend that the Federation establish a permanent Commission to both coordinate this work from a central location and provide practical assistance and advice in both control surveys and computational facilities.

ANDERSON, E.G. (1971) : Survey Standards Committee. ASF Newsl. 52 (June 1971) : 3

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ELLIS, B.M. (1963) : Assigning a Grade to Cave Surveys. C.R.G. Newsl. 88 : 11-15**

ELLIS, B.M. (1964) : Mendip Cave Survey Colloquium. C.R.G. Newsl. 90/91 : 22-24

JENNINGS, J.N. (1964) : Cave Surveys and their Grading. C.R.G. Newsl. 90/91 : 18-22

SEXTON, R.T. (1962) : Cave Survey Standards. (in) Speleo Handbook, Australian Speleological Federation (P.Matthews, ed.), 1968, : 31-34

STANDARDS ASSOC. of AUST. (1970) : Australian Standard 1000-1970, The International System (SI) Units and Their Application, Sydney, 1970.

** also reprinted in ASF Newsl. 26 : 2-5 (Dec. 1964)

DOWN UNDER ALL OVER

. . . NEWS FROM AROUND THE SOCIETIES

CEGSA Main caving activities in the last year or so - Corra-Lynn (formerly Corrells) Cave gated, digging renewed in Sellicks Hill Cave (Only 30m. south of Adelaide), gates installed on Mt Simms & Woodendinna Caves. Alarming damage noted in remoter area caves such as Flinders Ranges. At Naracoorte Victoria Cave continues to dominate the news, while newly discovered Sand Funnel Cave has gone 1200ft, and a 300ft extension has been located in Wombat Cave. At Easter the area was invaded by groups from CEGSA, VSA, Monash University, Flinders University and Broken Hill.

CQSS Continues as by far the most active provincial member society. New caves, shafts pits, pots and "44 gallon drum size" caves continue to turn up at Mt Etna and Limestone Ridge. Discussions have been held with senior personnel of Central Queensland Cement Pty Ltd which has completely barred the public from its leases on Mt Etna. Brief reconnaissances have gone to Ambrose and Horrigan Ck, but only the 44 gallon drum type of cave is reported so far.

CSS At Cooleman a doline next to Little Devils Sinkhole has been excavated and descended 40ft to a rubble block, fluorescein tracing has been carried out in the Frustration and New Year Cave area, and general surface exploration in the remoter parts of the district. The newsletter, The Very Latest", has struggled back to life again.

NUCC Another Speleograffiti has at last staggered through the perils of typewriter, duplicator and Post Office, together with a short note from President John Brush. Seems there were 22 trips to 11 areas in 1971, so the club hasn't been as defunct as might be expected from the lack of news. Wyanbene has been the main area, with 5 trips to continue mapping, and some new discoveries.

SUSS Until 1970 it was believed that Wiburds Lake Cave, Jenolan, was of the order of about 2000ft long as claimed in the ASF's Speleo Handbook. At this stage the only extant maps were a series by Henry Shannon (UQSS/SUSS) compiled as exploration went on over the years; indeed, much of the work in this cave has been done by UQSS. A year or so ago, however, the "hidden giant of Australian speleology" (Pavey 1971) began a high grade survey of the cave under the direction of Jim Seabrook, and needless to say, the Parkinsonian factor emerged again as the total cave length rose as rapidly as the existing bits could be surveyed. The magnum opus is now nearly complete and boasts over 6000ft of passage. Most of the Society's work this year has been at Jenolan, in fact, surveying and water tracing (the Blue Lake turned green at the height of the Easter tourist rush!). Hydrological work continues also at Cooleman.

BMSC & MSS BMSC and MSS have been at work in Abercrombie again. Among other surveying jobs, a map has been completed of Stable Cave, and the dig in Grove Cave continues to grow; the length now exceeding 40ft. Some surface work is planned to thoroughly check out a reported smaller limestone outcrop about ½ mile from the Arch. At Jenolan and at Bungonia MSS have been testing gas analysis equipment and at Jenolan digs are being pursued in the Southern Limestone with great vigour.

TCC Assaults in Khazad Dum and elsewhere at Junee-Florentine have not lessened work elsewhere. In fact, Speleo Spiel reports 61 trips in 1971-72 club year, with each club member averaging 8 trips a year. One member went on 29 trips! Some 41 exploratory trips reflect the fact that Tassie is still the caver's paradise. Recent advances include "unnamed" cave no. 22" (ASF Newsl. 54) - 25oft deep, 1500ft long, going strong, now named Gormenghast (roll on those euphonious and onomatopoeic names!). Niagara Pot is also still going strong at 450ft deep and horizontal development is opening up.

UQSS Wringing articles from members is about as easy for club newsletter editors as would be an exclusive interview with Howard Hughes on business opportunities in caves. It's a new twist, though, when the editor of Down Under demands that members supply him with material not so much to fill an empty newsletter, but rather to prevent Henry Shannon from using it as a vehicle to publish his complete unabridged works! Whether with or without Henry, Down Under continues to be a mine of information on new discoveries and work all over Australia and seem to suggest a new speleological law - the frequency of appearance of cavers interstate and abroad is inversely proportional to the speleological opportunities in their own state.

UNSWSS Members have been active lately. Two were in NZ at Xmas (see report in ASF Newsl. 55) while there has been a spate of exploration and surveying. Most notable success includes discovery of Coroners Cavern in B31, Bungonia, Nangwarry sandstone caves at Nowra, a sandstone cave at Newnes. Several other sandstone caves at Avalon, Palm Beach and Hilltop have been visited and surveyed and a paper is planned for NIBICON. Several trips have been run to plan cave gates due to increasing vandalism. Perhaps the worst example was the destruction of Khights Knobbly Knob in Tuglow Cave. Current projects include hydrology at Bungonia and speleochemical investigations of colouring matter in speleothems. The newsletter SPAR has been enlarged with maps and a different cover photograph in each issue. UNSWSS has joined the popular scramble to form a company as a moneymaking offshoot, and "Speleotours, Ink" has been running "tourist trips" to outlying rarely visited caving areas. These trips enable members to see different scenery, have a good time, and undertake familiarization as well as prospect for new caves. "Speleotours" will probably be contacted to run in association with NIBICON

VSA Perhaps the major achievement recently has been the drawing up of a detailed policy document on preservation of Scrubby Creek Cave. This challenging sporting cave with a well deserved reputation for grottiness has revealed an outstandingly beautiful side passage. Recognising that neither secrecy nor gating are effective permanent solutions, the new policy requires that all visitors be accompanied by an approved guide whose qualifications will be sufficiently stringent to ensure that the long term interests of the cave are well safeguarded.

WASG Quite a deal of news has arrived from Western Australia thrrough various private channels this year, and it seems they are not as inactive as had been thought. The "Western Caver" has maintained production, though irregularly, printing mostly trip reports and reprints of interstate material. The January-February 1969 issue (published in March 1972), however, has a most useful collection of otherwise inaccessible reports, both recent & historical, of expeditions to the Nullarbor, including non-speleol gical ones. Elsewhere, there has been activity as far afield as the Kimberleys and Portuguese Timor. In the south-west, a new large outflow cave has been discovered and entered for several thousand feet, and surveying has gone on in Easter Cave and elsewhere.

ISS KSS NUSS SCS SSS

No information, newsletters or anything else from these clubs this year, or at least mot since the last issue. Come now, we are surely not to believe that large clubs like SCS and SSS have really not done anything since March?

NSA and NTSS are believed defunct and OSS regrets to report a very poor year.

REVIEW

Australian Caves and Caving by Wolfgang Kahrau
Periwinkle Colour Guides, Lansdowne Press Pty Ltd, Melbourne, 1972
112pp, 16 colour plates, many maps, charts, tables etc. Price $1-50.

Reviewed by John Dunkley

This is one of a series of soft cover pocket books on aspects of Australian natural history. The author, a member of the Victorian Speleological Association, has caved extensively at Buchan. An outline of the types of caves and the development of limestone caves is followed by a brief and rather facile overview of Australian caving areas. Scientific aspects discussed include fauna, fossils and artifacts, surveying and water tracing. About half the book is devoted to equipment and techniques but the chapter on how to explore a cave precedes that discussing the equipment needed to do so.

The balance of material leaves much to be desired. There is a mere half page on quite minor aspects of conservation and nothing at all on the broader issues, yet the author devotes three times as much space to a laborious, unillustrated account of prusikking methods. Even then, he doesn't appear to have heard of jumars. The section on surveying is unusual in such a small book but much of it will be out of date in less than a year due to metrication and revised standards. Just as well, perhaps. The necessary revision will give the author a chance to correct the neat Imperial/Metric dual scale on p. 98, which converts at the rate of about 1ft = 0.6 metres!

The bibliography is notable both for the irrelevance and inadequacy of the 14 books listed. It is inconsistently indexed partly by author, partly by title, and only 2 have publication dates. "British Caving" is a serious enough omission, but why is "Speleo Handbook" left out in view of the fact that some of the material for this book was undoubtedly taken (unacknowledged) from it? Instead of these fundamental references, the list contains "Devonian Brachiopods and Pelecypods of the Buchan Caves", "Paleontology of Victoria" and some others whose sole claim to fame appears to be that they too are Periwinkles!

Typographic and spelling errors are far too common ("A loop is a turn which does not (sic) cross itself" - p. 66), and there are some errors of fact (the first Australian speleological society was formed in 1946, not 1948 - p. 27). And nails and tricounis are no longer worn by responsible cavers because of their effect on cave walls and floor (p. 50).

The colour photographs have reproduced fairly well, but the half-tones suffer from lack of contrast on poor paper. There are some excellent ones, but many appear to be included largely to relieve textual monotony. A commendable feature is a list of member societies of the Australian Speleological Federation, although Southern Caving Society has been left out.

This is, as far as I know, the first popular book on caving to be published in Australia and it raises some important matters of principle. Do we want to encourage caving even more? Personally, I would rather not preach to the unconverted in the way this type of book does, but popularization is inevitable and it would be myopic to ignore these developments. If this review appears harsh, perhaps it is worth emphasizing that the book discusses speleology in its various aspects without sensationalism and without appealing to the adventurous spirit. The journalism is quite sober and sensible, and on the whole the book meets its aim reasonably well.

N I B I C O N

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C O M I N G