

Price: 10 cents

BULLETIN OF THE SYDNEY UNIVERSITY
SPELEOLOGICAL SOCIETY

*Lumen
in
Tenebris*

SUSS



FOUNDED 1948

Box 35, The Union,
University of Sydney,
N.S.W. 2006.

Registered in Australia for transmission
by post as a periodical - Category B

P R E - E X A M P A R T Y

This is an invitation to all
members to come to a pre-exam
party on Friday, November 3
kicking off at about 7.30 or
8pm.

V E N U E:

22 Bondi Road, BONDJ JUNCTION

Your host will be Wendy Mackenzie

ALL WELCOME ➤ B.Y.O.G.

DON'T MISS IT FOLKS

N O T E : There will NOT
be any general meeting in
November. Next one is on
December 6.

F O R T H C O M I N G A C T I V I T I E S

October 27 - 28 CLIEFDEN Keith Oliver 6231768

November 3 PRE -- EXAM PARTY Wendy Mackenzie
Location will be house on the corner at 22 Bondi Road,
Bondi Junction. Just turn up from about 7.30 onwards.
Everyone will be there, don't miss out. A good way to
relax before the final assault this year.

10 - 11 YARRANGOBILLY Rik Tunney
(no phone number unfortunately -- write to Rick if interested
at P.O. Box 176, FAIRY MEADOW, NSW)

10 - 11 CLIEFDEN Keith Oliver 6231768
Further exploration and surveying, probably in Cliefden
Main Cave.

10 - 11 JENOLAN Bruce Welch 991013
Mammoth Cave - an attempt to follow up Waterfall Passage in
the northern section of the cave. Possibilities of big
discoveries in this section as there is some evidence of
another entrance in this part of the cave.

NOTE : Don't forget, there is NO meeting in November due to examinations

December 1 - 2 WOMBEYAN Denis Ward 6442497
Exploration and surveying. Definitely limited numbers
only, first in first served.

6 G E N E R A L M E E T I N G
Badham Room, the Old Union, Sydney University at 7 pm.
G E N E R A L M E E T I N G

December - LONG VACATION TRIPS : There have been rumours of a
January trip to Tasmania -- enquire at the next meeting for details.

Further trips to Cliefden will be available on the following dates :

24-25 November, 8-9 December, 26 Dec - 10 January, 2 - 3 February,
2-3 March and 12-15 April, 1974. All of these trips are organised by Keith
Oliver for Highland Caving Group, but SUSS members have received an invitation
to attend if interested. For any of the dates above, contact Keith Oliver
on 6231768 if you want to go.

For possible additional trips during December - January period, tryp Tony Austin
on 6606276 at home.

Members are reminded that restrictions placed by cave owners limit some trips
to 12 people. It is essential, therefore, to let the trip leader know if you
are coming on a trip, and if you subsequently cancel your place.

More abseiling and prussiking.

The following article appeared in the August issue of 'Speleo Spiel' and was written by Peter Shaw.

Rope: Shaw recommends American Blue Water II caving rope. For a further discussion of the rope see the December (1972) issue of Spiel.

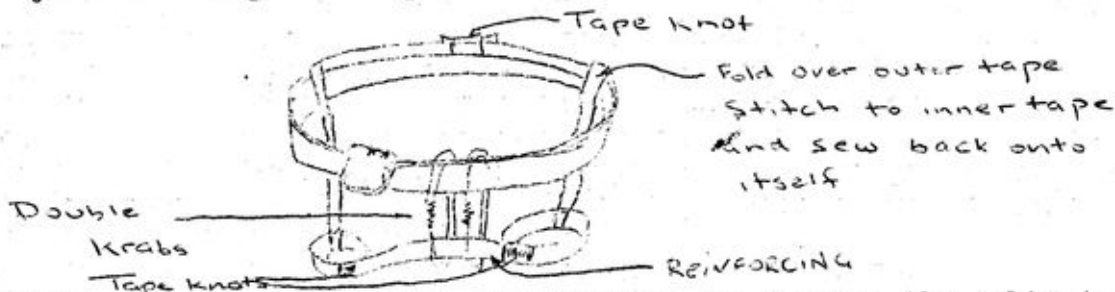
Rope Protectors: At the top of pitches, tackle bags are being used and are satisfactory. However, the slit plastic tubing is unsatisfactory and substitute methods of protection are desirable. It should have the following properties:

1. Lightweight,
2. Compact,
3. Easy to place and remove,
4. Will not allow the rope to slide out of position.

Several lines of enquiry are open at present. One is to fasten canvas pads to the rock using pitons, small bolts or natural anchorages. Another is to wrap canvas around the rope and fasten it using bulldog clips, press studs or something similar. Another idea yet to be tried, is to rivet sections of split tubing to a piece of matting, thereby combining the advantages of the matting and the split tubing. The matting would prevent the tubing from turning over which is the main disadvantage.

The Shaw Mark II Sit Harness.

This harness has the advantage that it can be made using an ordinary sewing machine. None of the sewn joints are of crucial importance. Firstly, make up a comfortable swami seat using 2" terelene webbing tied with tape knots. Next, make a waist loop of the same webbing, such that when doubled and passed around your waist, the two ends can just be clipped together using a krab. With two short pieces of webbing, sew connecting straps, as in the diagram. These straps should not be right behind you, but slightly towards the sides. Two krabs, in parallel, should be clipped from the swami seat around both sections of the waist-loop. The purpose of the two krabs is to facilitate any manouvres such as changing ropes, changing from abseil to prussik or knot passing. If desired the centre of the swami seat can be reinforced by stitching an extra piece of tape to it. The connecting tapes are sewn so as to allow the outer tape to move. The waist-loop can then be adjusted using the tape knot at the back.



Chest Harness: A chest harness can be made by sewing the adjusting part of a seat belt to a piece of two inch webbing. Shoulder straps can be made using 1" webbing. If these are tied in loops

and then threaded on the chest-loop rather than sewn to it, the chest jumar can be removed.

Foot Loops: Foot loops are used in conjunction with C-links, so that you have foot loops which are comfortable when prussiking, but which need not be removed at the top of each pitch. They are worn either for the full time spent underground or only for the vertical section. A C-link is threaded onto a piece of 2" Webbing, which is then tied with a tape knot so that it fits comfortably onto the foot. Either a piece of perlon or cord or something elastic is tied to the loop as an ankle strap.



Abseiling Devices: For the last six months rappel racks have been used by members of the club. Whaletails have just been purchased and a detailed valuation should soon be possible. At first glance the whaletail appears to be the better of the two. It is a better heat-sink, spreads the wear over more bars and is faster to put on the rope. It is more difficult to lock up than the rappel rack. When the whaletail wears out it must be replaced; whereas individual bars can be replaced on the rappel rack. Although mainlanders claim that the whaletail wears less, I don't think this will be substantial until the whaletail has been tested in Tasmanian conditions, where the ropes appear to get much dirtier than do those of the Sydneyites although I don't know what New Zealand conditions are like.

The Shaw Three Jumar Four Phase Super-Duper, Whizz-Bang Prussiking System: (accept no substitutes).

This system, as well as allowing four separate prussiking methods to be used, is all that is necessary to change ropes, pass knots, change from abseil to prussik and vice-versa. Its disadvantage is that it requires three jumars. The principal advantage is that the four prussiking methods can be speedily interchanged in the course of the one pitch; thereby allowing the technique to be adapted to suit the changing nature of the pitch. This system worked well on the eighty metre pitch in Tassy Pot, where you have a free section, a sloping wall, a steep wall and then a broken sloping wall. If you ever find while interchanging systems, that you're tied up and can't move your arms, or that you are not attached to the rope, I can accept no responsibility.

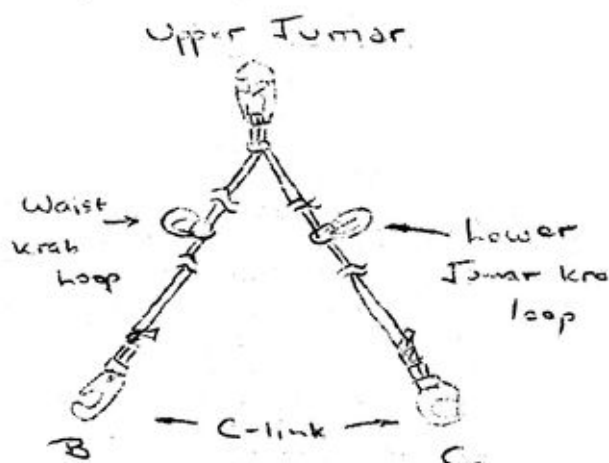
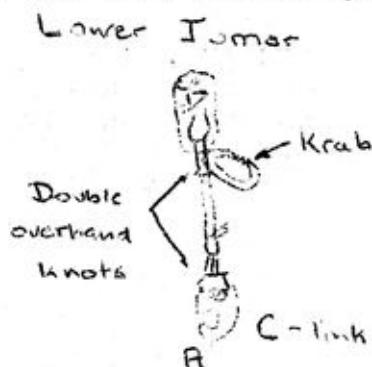
The basis of the system is the chest jumar, which is threaded onto the chest harness at the top, and clipped into one of the two sit harness krabs at the bottom. This is very uncomfortable to walk in, but gives the best results when prussiking. Unclip the jumar from the bottom krab when moving between pitches. There are two objects in keeping the chest jumar tight - it keeps your body vertical, ensuring that no energy is wasted in coming to a vertical position before moving up; it also ensures that, when moving up, you do not have to take up any slack, before the jumar moves up also.

While the second object could be achieved by using an elastic shock cord looped around the neck, the chest harness is still necessary to keep the body vertical on free pitches. If all the pitches

are against the wall or have only short free sections, it would be more comfortable to use the elastic neck cord and dispense with the chest harness.

The two remaining jumars I am going to designate as upper and lower. The foot tapes can be attached to your foot in whichever order you prefer.

The lower jumar tape is made by tying a double overhand knot in each end of a piece of 1" webbing. One end is attached to a jumar and the other to a C-link. The tape should be long enough such that when the C-link is clipped into one of your foot loops, the jumar is just comfortably within reach. Clip a krab without a screw-lock through the loop formed just below the jumar.



The upper jumar tape is made up as per diagram by tying a double overhand knot in the centre of a piece of tape and attaching it to the jumar. Further loops are then formed for the waist krab and the lower jumar krab. C-links are attached to the ends for connection to the foot loops. The lengths of the respective sections are extremely important. When the lower jumar krab loop is clipped into the lower jumar krab, and a downwards force is exerted on C-link A and C, the two C-links should be parallel. When a downwards force is exerted on C-links B and C the two C-links should be parallel. When the waist krab loop is clipped into the krab on your sit harness the jumar should be at arms length. When C-links B and C are clipped into your foot loops, the upper jumar should reach to just above the chest jumar. When making up the tapes remember that the knots will tighten up and the tapes will stretch slightly when a load is applied to them.

1. Inchworm System: For free drops only. Clip C-link B and the upper jumar onto a spare krab as they are not used. Clip the waist krab onto your spare sit harness krab, the one not attached to your chest jumar. Clip the lower jumar krab loop onto the lower jumar krab and C-links A and C onto each of your foot loops. While one hand steadies you on the rope above your chest jumar, stand up on the lower jumar. As your weight is taken by your chest jumar, pull up the lower jumar with your lower hand and repeat the process. The main

rope should be inside the lower jumar, within the circle formed by your legs and the two foot tapes. If one arm gets tired change hands.

2. Leapfrog System: For free drops only. The lower jumar is not used. Clip C-links B and C to each of your foot loops and the jumar onto the rope above your chest jumar. Sit back on your chest jumar and push the upper jumar up the rope with both hands. Stand up on your feet, allowing the chest jumar to slide up, repeat the process.

3. Walk-Up System: For 80-90 degree smooth walls. Clip C-link B to spare krab and the waist krab loop onto your spare sit harness krab. Clip C-links A and C to your foot loops and use a walk-up technique, stepping up onto each jumar in turn. This is a very fast technique if you can get a rhythm going, and the lower jumar runs properly.

4. Semi Leapfrog System: For all pitches against the wall, except as above. The lower jumar is not used. Clip the waist krab loop onto your spare sit harness krab and C-link B onto a spare krab. Clip C-link C onto one of your foot loops and the upper jumar onto the rope above your chest jumar and sit back on the chest jumar. Push the upper jumar up the rope. Either use two hands on the upper jumar if the wall is very steep, or use the hand on the opposite side to whichever foot is being used. The spare hand and foot are used to fend you off the wall. Stand up on your foot and repeat the process.

Changing Ropes: If the waist krab loop is not attached to your spare sit harness krab, do so. Attach the upper jumar to the new rope. Unclip C-links B and C and the lower jumar krab as necessary. Prussik down the old rope using the lower jumar until all your weight is on the upper jumar. Transfer your chest jumar and then the lower jumar to the new rope and prussik up slightly, so that the chest jumar is taking the weight. Reset whichever system you are using and continue.

Passing Knots Upwards: Prussik up until your chest jumar is just below the knot. Attach the waist krab loop, if it is not already so. Unclip C-links B and C and the lower jumar krab loop as necessary. Push the upper jumar as far up the rope above the knot as possible. Pull the lower jumar up. Remove your chest jumar from the rope and stand up on the lower jumar, at the same time pushing the upper jumar up the rope. Replace the chest jumar and carry on.

Passing Knots Downwards: When several feet above the knot, attach the waist krab loop and clip the upper jumar onto the rope. Abseil down until your weight is taken by the jumar and remove your abseiling device from the rope. Prussik down the rope using the lower jumar, until the upper jumar is just above the knot. Thread the abseiling device onto the rope, immediately below the knot. Stand up on the lower jumar and clip the abseil device onto your sit harness, thereby taking your weight on the abseil device. Remove both jumars from the rope and continue abseiling.

Changing from Abseil to Prussik: Attach the waist krab loop and clip the upper jumar onto the rope. Abseil down until your weight is taken by the jumar and remove your abseiling device from the rope. Attach your chest jumar and set up a prussiking system.

At All Times: Never unscrew a sit harness krab if it is being used to attach you to the rope. That's why two parallel krabs are used on the sit harness.

sussussussussussuss

BUNGONIA

(21 - 27/8/73)

Party: Tony Austin (L), Cathy Lawlor, Graeme Smith, Mark Mason, Duncan and Jenny Coles, Tony Sweetman, Kim (?).

The aim of this trip was simply to visit a few of the larger caves which we had so far neglected and introduce yet a few more people to the wonders of Bungonia caving. Unfortunately we accomplished neither objective successfully.

The first day of the trip was spent, as it usually is, travelling. Cathy and I had to drive down to Sydney from Newcastle where we met Mark and picked up Graeme. By the time we had arrived at our usual campsite, cleaned it up and established camp it was time to call it a day. So much for Tuesday!

No trip to Bungonia is complete without a trip to the Grill so early Wednesday morning saw us on our way to find that ever elusive right hand passage. We found an interesting passage which looked as though it would fit the bill but could not explore it due to the particularly high level of bad air in the cave. We then amused ourselves exploring the myriad of passages at the end of the chamber containing the Horizontal ladder. Later reference to the map when we reached camp seems to indicate that the passage we found is still not the sort-after R.H. branch.

Wednesday afternoon was spent over at Hogan's cliff with the mandatory laddering and abseiling practice.

The weather was overcast the whole time - looking as though it could rain at any minute so we decided to give the B4-5 Extension a miss and have a bash at Drum (B13) instead. The 150' entrance pitch was quite impressive and makes an exciting abseil. I might add that we laddered the pitch and the first two people descended these ladders before an abseil was attempted - the cave often has bad air in high concentrations right to the top of the pitch and it would be rather dangerous to abseil into this without prior warning. We found the air to be excellent and rapidly descended to the sump. The air was still good and the sump was the anticipated green colour (is there a sump at Bungonia which isn't) After a bite to eat and a general 'look-see' we made our way out with a quick detour to examine the extension at the base of the 67ft pitch. We noticed a large number of long-dead bats littering the floor and walls just before the entrance to the extension.

The ascent of the 150ft pitch was an education - it is a long way; especially if you are using a self-belay! We must have spent the best part of eight hours in the cave so we were not all that sorry to leave it. Jenny and Duncan arrived that night.

Friday morning Mark left for Sydney and as we were low on water Duncan and I drove everyone into Goulburn. It was raining

when we returned so after lunch a group of us adjourned to B50 for a quiet game of 500 by candlelight. It was then decided to have a look for/at Powell Pot in B4. We found the way into the Pot with little difficulty but the squeeze before the pitch proved to be quite a challenge with only Graeme and I being able to get through. As we couldn't be bothered carrying all the gear through the squeeze we did not descend the pitch. While we were in the cave a group of speleos from NSWIT were preparing for the public inspection of the area to be held that weekend. They provided much amusement for all!

Saturday morning was spent as far as possible from the hordes of tourists that had descended on the area by diving down underground to have a look for Addytum in B16-51. Needless to say we did not find it and thus had to continue through the cave carrying 170' of ladder and 300' of rope! Saturday afternoon was spent showing some friends from Canberra B50 and the Root Chamber in B35. By this stage every cave which didn't have guided tours through it was full of Scouts/cavers/tourists or kids with bike helmets and tow ropes. Needless to say a fair bit of time was spent pulling people away from the deeper caves. That night we all attended a concert organised by M.S.S.

Sunday morning we did a general tour of the Beck's Gully region and found a few small holes other than the ones that we had seen on previous trips. That afternoon Graeme, myself and a friend of Graeme's did B1 but could get no further than the Egg Cup chamber as the air below this was really bad. Undaunted we sat down and discussed speleopolitics for a few hours before emerging after night fall.

By Monday Cathy, Graeme and I were the only ones left and it had been our intention to have a look at the B4-5 Extension - this being a major aim of the trip. Thus we were more than disappointed to be awoken that morning by the sound of heavy rain. It had been raining since midnight and there was about two inches of water everywhere so any thought of doing the Extension was out of the question. The rain looked as though it had set in for good so we decided that we would call it quits and leave. Breaking camp in the rain was no fun and the trip out was not helped by the swollen streams encountered on the way. Surprisingly - no-one ended up with pneumonia.

Tony Austin.

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DID YOU KNOW? That it is forbidden to use carbide lamps in caves covered by a National Parks and Wildlife permit. Spent carbide left in a cave (or around the camp for that matter) is not only an eye-sore but is harmful to the ecology. Not-so-spent carbide is also harmful to cavers when it gets wet. So, if you use a carbide lamp anywhere either bury the waste or better still take it out with you.

JENOLAN TRIP REPORT

11 - 12 August, 1973

A late start from Sydney brought us to Hampton just in time to drive through a swirling snowstorm which dropped about 5-6" of snow along the summit road and gave the touri a real thrill.

A rather chill breeze welcomed us at Jenolan. Steve Oppen showed me another untagged cave which he had located and mapped, on the eastern side of Serpentine Bluff area. This was tied in to several other high level caves in the same bluff together with some eroded cave remnants. Meanwhile, Spike and Gary went up to Wiburds Lake Cave and continued exploration upstream of the rockpile in the northern part of the cave. A quick look was had at J86 on the way back.

Dinner was taken in accustomed luxury and at unaccustomed expense (yes, we did pay!) in Caves House, after which we sat around and fiddled for three or four hours while every man and his dog had a say in the affairs of the Historical Society.

Next morning Geoff Francis turned up, having had an exam on Saturday. We finished the Serpentine surface surveying with a traverse up the tributary valley between Serpentine and the next bluff south.

John Dunkley then had a look at J27. This apology for a cave turned out to be a slot 2ft wide and 50-60ft deep, descending at an angle of 70-80° and was not funny. Getting back was quite a chore. J43 was also entered rather briefly and found to be much the same, though a little easier to negotiate. Both represent incised canyons and may well be associated with the roof channel at the entrance to Mammoth Cave. The levels look right.

J83 was then visited. We contemplated doing a Grade 7D traverse there and then but, lacking the equipment, settled for a grade 4D with Suunto. It was no great drama throwing in the occasional cross-section and plotting up longitudinal and projected long sections. In fact the whole job was done in 30 seconds and only a further 30 seconds later the plotting was finished. The major ramifications of this cave turned out to be: gross length (using definitions suggested by the Commission on Longest and Deepest Caves of the Australian Speleological Federation), gross length, to repeat, 0.800 metres. Mean passage width was 0.2 metres as was mean height. Let's see you get through that one. A cave? Why not put number tags on all the wombat burrows too? Even a wombat could not even have got into this one.

- John Dunkley

JENOLAN TRIP REPORT

25-26-27 August, 1973

Starters: J. Dunkley, L. Muenzenrieder, A. Happ, B. Hyde, B. Welch, S. Oppen, G. Matthew, T. Fardouley, B. Cooke and two others, plus Guides Ron Newbould, John Callaghan, Noel Rawlinson, Ernie Holland, John Georgeson and Phil

A very late start from Sydney on Saturday saw us arriving at Jenolan at 5pm, in time to make some arrangements with the Guides. We obtained a key from Mr Harman and went in via Binoomea Cut at 6.30. While waiting for Ron to have tea, John, Bruce and Terry resurveyed the abandoned path from Grand Column to the Sounding Board, using the forestry compass as a theodolite so as to check a suspected inaccuracy in the 1972 survey caused by proximity to metal wires.

Ludwig and Andy carried out a theodolite traverse from the Junction Box to the Grand Column. When connected to Ted Anderson's control traverse from Binoomea Cut to the Grand Arch via Baal, River and Lucas Caves, and to Ludwig's triangulation traverse of the Southern Limestone, we will be able to locate the Barellan accurately in relation to the surface.

Finally, at about 9pm we were ready to go into Barellan. Progress was relatively slow with the large party, especially as had to wade through the pretties section in socks or bare feet. After arriving at the second river it was decided that there was little point in pushing to the far end of the cave; the archaic 'ladder' hanging down above the lake was enough to deter those who still thought it worth a push. Instead, we pushed downstream to the limits of previous exploration. Here in 1972, John Dunkley and Ron Newbould had shone a torch 50ft down a low, water filled passage. As it transpired, that was about as far as the cave went anyway.

Fired by enthusiasm (there are not too many wide open leads like that at Jenolan these days), Bruce, John et al. splashed down the river which turned out to be only 6-8" deep and with 18" of air space. Further in there was room to stand but the water quickly deepened and a sump was reached after barely 50ft. Bruce et al. splashed around for a while without locating any continuation. A steep mud slope on the right hand side was climbed and found to lead back to an area already known. Very disappointing end to a very promising lead.

On Sunday night the party split. With John Callaghan one party decided to follow up a report by Ron Newbould of a high level passage from near the gate to beyond the first river crossing, discovered by himself and John Culley in 1964 or thereabouts. The entrance to this turned out to an excruciatingly awkward Z-bend vertical squeeze that rapidly started ripping buttons and back pockets from trog suits. A superbly decorated horizontal passage led off above, giving way to a succession of muddy rock piles one of which was very fresh and was dripping water. Meanwhile, Noel Rawlinson's party were checking the other end of the thing, above the chimney at first river crossing. At one stage voice contact was established between the parties but no negotiable connection could be found at the high level. Following this we tried without success to locate a further high level route said to come out at one stage above the Ladys Leg. We could not find it and after some surveying in the area, we pulled out about 1am.

Jubilee Cave - On Monday Jubilee was entered with a view to placing magnetic bearings on the compass-theodolite traverse, and to add more to the map generally. The horizontal passage leading west from the bridge to Alabaster Hall was used for this purpose; Ernie Holland is to add to the map more passages known to exist in this area.

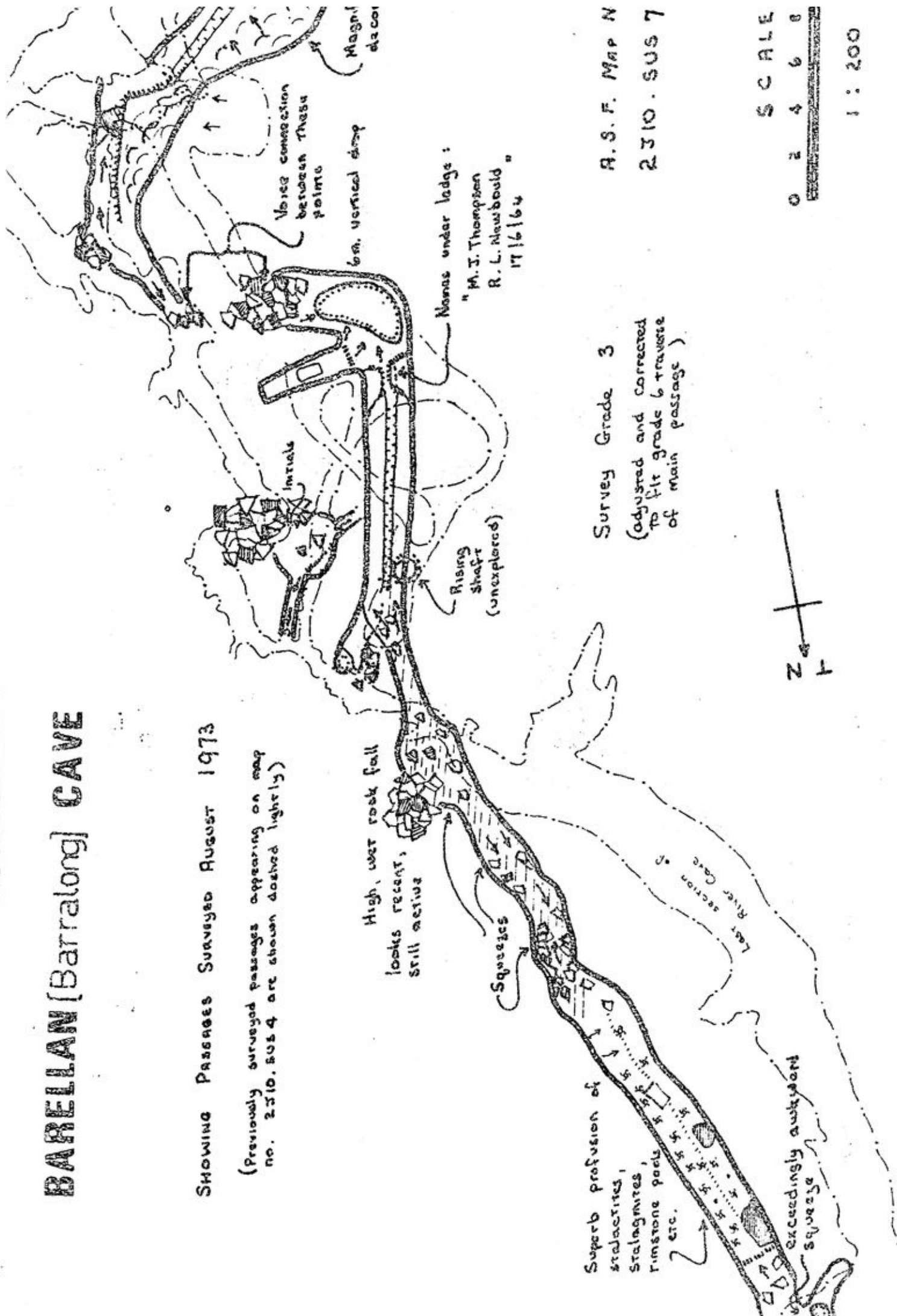
We then traversed the left branch of Lily of the Valley. There is no doubt that this is the passage by which a former underground river conveyed water out of Water Cavern, through Nellies Grotto area to the Imperial Cave. After some quite large passages somehow reminiscent of Mammoth Cave, the connection to the Water Cavern is blocked by a large rockfall. It is possible to thread through the rockfall and emerge in a chamber 30ft in diameter, in the 25ft high roof of which is an immense rock half the size of a house, with no visible means of support. There were no leads and although the steps down to Water Cavern are very close, we were unable to establish a voice contact with Ernie.

John Dunkley

BARELLAN [Barralong] CAVE

Showing Passages Surveyed August 1973

(Previously surveyed passages appearing on map no. 2310.SUS 4 are shown dashed lightly)



Survey Grade 3
(adjusted and corrected
to fit grade 6 traverse
of main passage)

A.S.F. Map N
2310.SUS 7

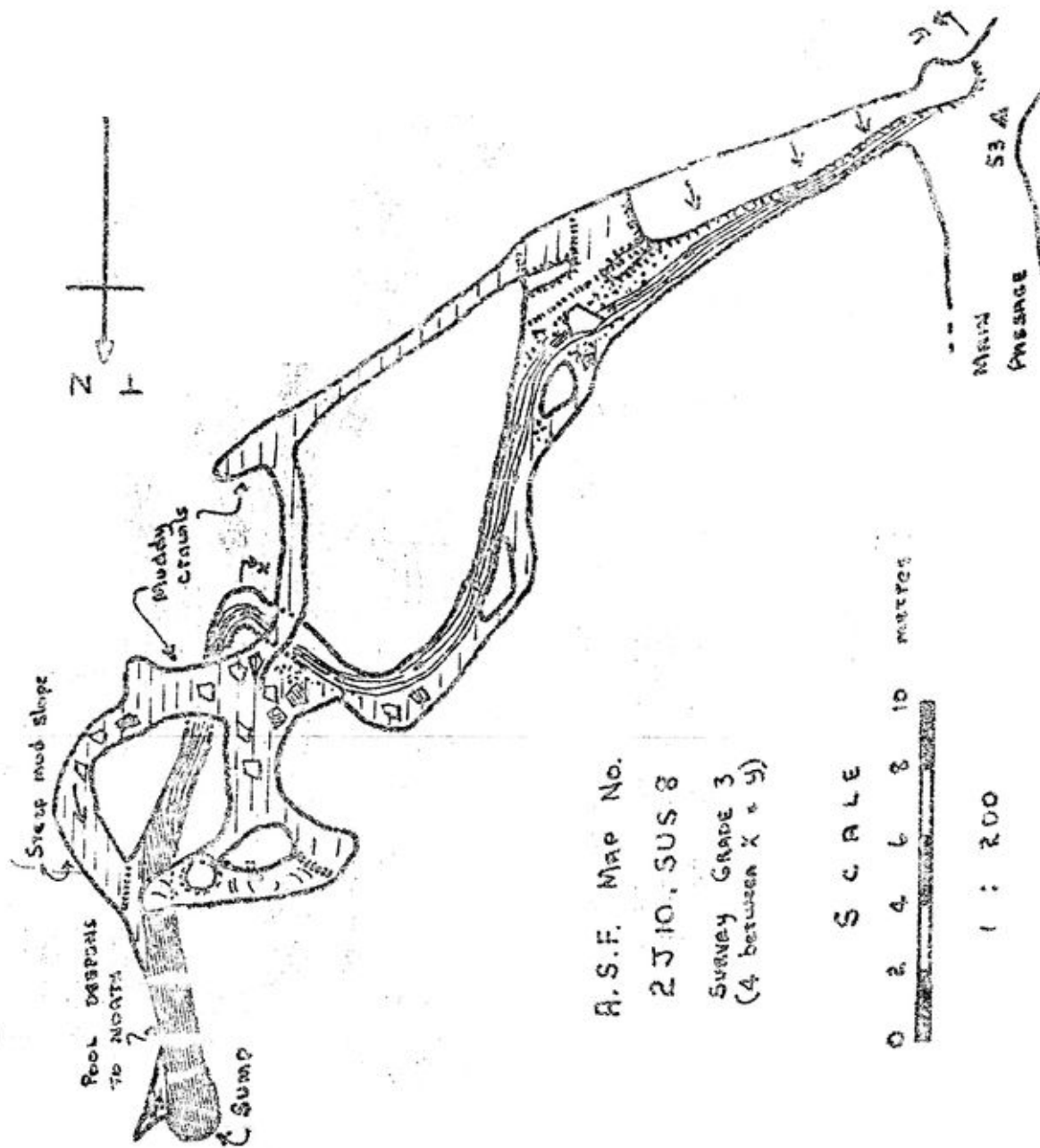
SCALE
0 2 4 6 8

1:200



ITALIAN CAVE (TENOLAN)

DOWNSTREAM ALONG SECOND RIVER FROM STATION 53



A.S.F. Map No.

2J10, SUS 8

SURVEY GRADE 3
(4 between X & Y)

SCALE

0 2 4 6 8 10 meters

1 : 200

KARSTOMETRICS OR KARST MORPHOMETRICS.

This is a relatively recent field in karst studies and to be of some interest to speleologist seriously interest in karst geomorphology, hydrology and geology. Very little combined material is however available on the subject and the main contributors to date have been Williams 1966, LaValle 1967 and Jennings 1970.

Williams 1969, gives a number of parameters relating to shape, size and distributions that are of value to speleologists. These are briefly stated here under for those interested.

1. Swallet Density. (D_s)

$$D_s = \frac{\text{sum of } S}{A_1}$$

ie. a measure of the number of streams draining into the limestone per unit area where 'sum of S' is the sum of swallets over A_1 which is the area of the limestone outcrop.

2. Rising Density. (D_r)

$$D_r = \frac{\text{sum of } K_r}{A_1}$$

ie. a measure of the number of risings per unit area where 'sum of K' is the sum of karst springs over the area of outcrop.

3. The swallet to rising ratio, (R_{sr})

$$R_{sr} = \frac{\text{sum of } S}{\text{sum of } K_r}$$

R_{sr} indicates the amount and direction of stream branching underground. Purely vadose systems are expected to have R_{sr} values of greater than one while areas with important phreatic groundwater bodies should have low values descending to less than one.

4. The mean shortest distance of underground flow I_u , is the mean straight-line distance between each swallet and its nearest downhill resurgence or river channel.5. The Vadose Index, $V_i = \bar{H}_s - \bar{H}_r$; where \bar{H}_s is the mean altitude of the swallet and \bar{H}_r is the mean altitude of the rising. This is a measure of the depth of the zone of aeration and is significant only for small areas as the hydrostatic balance varies according to subterranean evolution, structure and lithology.6. The rising coefficient $V_{hr} = \frac{\sigma H_r}{\bar{H}_r} \times 100$; when σ is the standard deviation estimated from the sample and defines the variation in altitude of springs. In areas of pure limestone, it is a direct measure of the uniformity of the water table surface and is thus an indirect measure of the state of evolution of the groundwater network.7. Stream density on limestone $D_1 = \frac{\text{sum of } L_1}{A_1}$; when 'sum of L_1 is contd...

the sum of the lengths of any through flowing stream over the area of outcrop and is a statement of the length of permanent streams per unit area, and is thus an indirect measure of permeability in an area of uniform climate.

Williams also gives a number of parameter for assessing the attributes of closed depressions in temperate zone areas. These are:-

- a. C_d which is the total number of located closed depressions.
- b. A_{cd} which is their measured area.
- c. H_{cd} being the maximum relief (ie. difference between the lowest point in the basin and the highest point on the rim).
- d. R_{de} which is the length to width ratios.
- e. θ_s is the long axis orientations in degrees of azimuth relative to the direction of general landslope.
- f. θ_g - geological strike.
- g. θ_j - joint trend.
- h. θ_h^j - maximum hydrolic gradient.

Finally divide the area into convenient units eg. 1km^2 . Then calculate for each unit the:

1. Closed depression density

$$D_{cd} = \frac{\text{Sum of } C_d}{A_i}$$

2. Mean area of depression

$$\bar{A}_{cd} = \frac{\text{Sum of } A_{cd}}{N}$$

3. Mean depression relief

$$\bar{H}_{cd} = \frac{\text{sum of } H_{cd}}{N}$$

4. Index of pitting

$$R_p = \frac{A_i}{\text{sum of } A_{cd}}$$

5. Mean elongation ratio of depressions

$$\bar{R}_{de} = \frac{\text{sum of } R_{de}}{N}$$

Williams suggests that from such calculations, spatial variations will become apparent which will require explanations with particular attention to ground water influence. It should be pointed out however that these equations have yet to be tested and are thus highly theoretical as to their ability to give meaningful information about a karst stream under investigation.

For those who wish to follow these matters further, a reading of the references listed herein is suggested.

L.G. Muenzenrieder.

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cont'd...

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S U S S

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T R O G L Y D Y T E S

T A K E

N O T E

S U S S I S 25 YEARS OLD

W E A R E H A V I N G A

B I R T H D A Y P A R T Y ***

F R I D A Y 2ND. NOVEMBER.

*Ice Cream Cake

*Watermelon

*Bring some wine

Place = 22 BONDI ROAD,
BONDI JUNCTION. BUS 381, 380

Voyage down Oxford St. till Whale Car Wash is reached.

Turn right and go 2 blocks. House on corner

A B O U T 7 P.M. S T A R T

Unfortunately this months 'Splatter' will be rather brief as the recent postal disturbance has resulted in many journals either arriving late or not at all. The Society has recently acquired a large steel filing cabinet for the library and thus all material will now be stored in this - hopefully ensuring its preservation against damage and loss.

Apologies for the missing page last issue - the page has been included in this issue as a supplement.

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SYDNEY SPELEOLOGICAL SOCIETY.

The September edition of the S.S.S. Journal contains two articles : 'Clarification of Cave Names at Yarrangobilly' by Greg Middleton and 'Colong - A Pyrrhic Victory' also by Greg. The former is mainly concerned with the naming of the 'Glory Hole' caves and the outcome. The latter deals with the apparent success of the conservationists in the area and the possible connection with the Bungonia issue.

Also in this issue are trip reports from Bungonia(3), Timor, Northern N.S.W. - Queensland, Cliefden, and Jenolan(2).

PENINSULA SPELEOLOGICAL GROUP.

The September issue of the P.S.G. Bulletin contains an article on the Gibb's ascender(Reprint) - outlining the safety tests done on them and a method of using them. Following a report on the First Australasian Conference on Cave Tourism, 1973 held at Jenolan there is a trip report from Bungonia and Part II of the 'Saga of the Sea Caves Search.'

KEMPSEY SPELEOLOGICAL SOCIETY.

The September issue of 'TROG' contains a complete list of all financial members of the Society and trip reports from Kunderang and Sebastopol.

VICTORIAN SPELEOLOGICAL ASSOCIATION.

The August issue of 'NARGUN' contains some information on the Buchan Cave Reserve and trip reports from Buchan and Exponential Pot M. 125.

TASMANIAN CAVERNEERING CLUB.

The September issue of 'SPELEO-SPIEL' contains an interesting and comprehensive article on Hastings Caves. The article

by R.K. Skinner, covers discovery, development, geology, age and formation of the caves and cave fauna. The rest of this issue is devoted to trip reports from Genghis Khan, Croesus Cave, Kubla Khan, Exit Cave, Junee Area, Hastings Area, Mole Creek and Frankcombe Cave.

WESTERN AUSTRALIAN SPELEOLOGICAL GROUP.

As usual the 'Western Caver' is enormous - the July-August issue being over fifty pages long!

The main articles include: 'Rotational Collapse of Blocks in the Caves of the South West' by Paul Caffyn; 'Notes on the Geology and Geomorphology West of Lake Arramall' also by Paul; 'The W.A.S.G.'s Submission to the Australian Governments Enquiry into the National Estate'; 'Inspection of the Moondyne Cave (Au 11) Relative to Foul Air Occurrence in the Lowest Chamber' by T. Batchford, BA, Government Geologist. This is an historic article and contains the results of air assays done in 1929. Following this is a table setting out results from water analysis done in various S.W. caves in 1963-64. There is also a reprint of an article entitled 'Report on the Geology and Supposed Gold-Bearing Rocks in the Neighbourhood of Bunbury, Blackwood etc' by E. T. Harden, Government Geologist (1884).; 'A Brief History of the Jurien Caves' by R. Shoosmith; W.A. Cave Nomenclature List No. 11 by P.J. Bridge. There is also an incomplete index to W.A.S.G. publications from 1960 - 1971.

Needless to say there are many trip reports, most of them being accompanied by maps and sketches.

Tony Austin.

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ORIENTATION WEEK - 1974.

Orientation week is the main opportunity that this Society gets to recruit new members and as the members ARE the Society we should be going all out to tell people about our activities and encourage them to join us. The usual chain of events is that about 80-90 people pay their 80 cents and we only see about 20 of them after the Fresher's Trip. Next year we hope to change this and keep a larger portion of those people who express an initial interest. What we need is a group of members who are prepared to help run the Society stall and also possibly screen slides to give the prospectives more of an idea what its all about. We also need TALENT to arrange a static display for the stall - things like big photos, posters, maps and display dummies (dressed as a trog(ette?)). All nominations for the latter position will be carefully considered - however the judges decision will be final.

All suggestions/enquiries to
Tony Austin. (6606276)

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