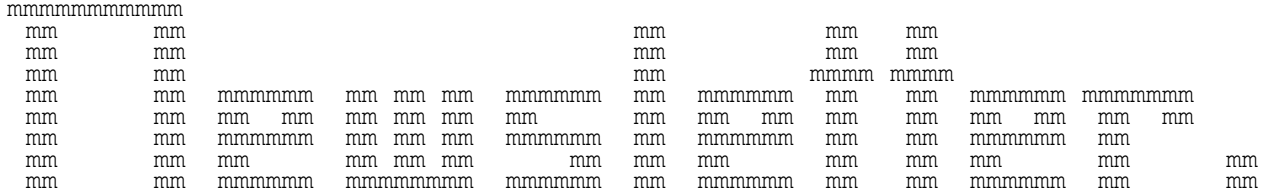
C A V E E X P L O R A T I O N G R O U P

of S O U T H A U S T R A L I A



JUNE-AUGUST, 1963.

GENERAL MEETING REPORTS:

General Meeting, 27th March, 1963:

The meeting discussed first aid tests for prospective full members, but the motion to bring these tests into effect was not passed. The leader of the Easter trip to Narinna Pound expressed concern about the lack of transport on trips programmed for the Flinders Ranges. Most trips to this area in the past two years have been cancelled, because of lack of transport. Dr. Daily's illuminating talk on mammal remains in cave deposits has sparked off much activity among various members of the Group.

General Meeting, 24th April, 1963:

The Group decided that its resignation from the Australian Speleological Federation had achieved as much as possible, and has withdrawn the resignation. The Tourist Bureau has lodged a complaint about the condition of the Naracoorte Research Centre and a report has to be prepared on the work that we have done on the hut. After the trip reports of the Easter trips were presented to the meeting, Noel Mollet spoke on first-aid and safety. The meeting ended with supper.

General Meeting, 22nd May, 1963:

The general business of the meeting was mainly concerned with the work that must be done on the hut at Naracoorte. If it is possible there will be a clean up weekend in the near future. It was brought to the notice of the meeting that too many application forms are being handed in without subscriptions. People who do this cannot expect the full privileges of membership until they are financial. The rule that non-members may not come on more than three functions of the Group without paying associate membership fees, was also emphasised. The rest of the meeting was taken by a discussion on insurance, led by Mr. Pentreath, an Adelaide Insurance Broker. One of the main topics of discussion was the problem of insurance for members and their cars during caving trips. Other insurance problems of a general nature were also discussed.

Membership:

There are three alterations to the membership list, as Jill McLean-Smith, Nigel Duncan, and Malcolm Walter are now full members.

BAT RESEARCH COMMITTEE:

Elery Hamilton-Smith, as acting convener is anxious to hear from any cavers who are interested in helping to complete details of all occurrences of cave dwelling bats in Australia. C.S.I.R.O. has made available cards to be filled in whenever bats are located in a cave. The survey will supplement and aid the bat banding scheme. Further details are obtainable from the Secretary or direct from Elery Hamilton-Smith, 17 Helwig Ave., Montmorency, Vic.

SOCIAL:

A prospective trog Kathleen Dorothy has been added to the Mollet Family. Congratulations Noel and Cynthia.

REPORT ON NATIONAL FITNESS COUNCIL'S ELEMENTARY CLIMBING COURSE:

The course, which was attended by five CEGSA members, was intended to provide a firm safe foundation in the basic techniques of rock climbing. The following are those notes from the Course which are particularly relevant to caving.

Care of the Rope:

Nylon rope in particular is easily subject to mechanical damage, and should be treated with the utmost care.

The following points must be observed:

1. Never tread on the rope.
2. Reduce abrasion to a minimum by the use of bags where the rope runs over sharp edges.
3. Keep wet ropes off the ground where they will pick up abrasive dirt.
4. Carry ropes in a bag to protect then from chance fraying and damage. Do not carry ropes over the shoulder.
5. Report any damage to the rope at once to the trip leader.

Footwear:

Boots are recommended for caving. They are essential for developing any sort of climbing technique. Shoes, especially sandshoes have not the rigidity required when all the weight is on a small toe hold, nor do they protect the foot and ankle sufficiently. Boots are a necessity on ladder pitches and crevasses, where a fall is most likely to occur from slipping feet. Rubber-soled boots e.g. Centurion work boots, seem to be the most satisfactory for caving. Un-nailed leather soles can be dangerous on wet climbs.

Knots:

1. The bowline is the only good general knot for 'tying on'. Only one turn should be taken around the waist, and the ends should be finished off with half-hitches, leaving about six inches of standing rope at the end. The rope around the waist must be tight almost to the point of being uncomfortable, which ensures that the loop does not pull up over the chest in event of falling. All cavers must be able to tie a bowline with one hand and with their eyes closed.
2. All knots must be checked, preferably by the trip leader.

Belaying:

"No amount of reading or writing about belays can take the place of practical demonstration ...."

Dr. Charles Chapman, "On Climbing."

1. It is essential to know what it feels like to fall free for several feet, and to be stopped by the rope, and conversely what it feels like to hold a falling man.
2. The practice of tying on to a suitable anchor point, instead of relying entirely on the stance, is strongly recommended. The choice of suitable anchor is important, and spike or thread belays are recommended for anchor loops.
3. The waist belay, not the shou1der belay, should be used. The rope from the climber passes around behind the belayer at the waist level, and a turn is then taken around the opposite arm (sleeves rolled down!). The weight of the climber is then taken in friction first around the waist and second around the arm. The line should be comfortably tight, and two hands should always be kept on the rope.

4. The belayer should take up a stance sound enough to take the weight of the climber without being pulled on to his anchor and to be well chosen so as to counteract the movement if the force about his waist.

5. For descent, the rope should be properly coiled free of knots and projections before tying on.

Technique of Climbing:

1. Balance. The weight of the body should be carried by the feet, not by the hands, and the centre of gravity should be kept directly over the feet, with the hands assisting in balance.

2. The climber should move rhythmically because a fast careless movement exerts a greater force than a slower more rhythmic movement and there is correspondingly more chance of the hold breaking off. Also the success of a foothold may be dependant on the exact position of the boot. Fast careless movements are more likely to move the foot on the hold and possibly cause it to fly off. Arrive at and leave holds quietly and accurately.

3. Do not take long strides or reach out too far with the hands, if avoidable.

4. Three point climbing - move only one limb at a time, keeping the other three secure.

5. Plan your holds and use them.

Points of Safety:

1. Do not dislodge stones. If one is accidentally dislodged, immediately shout out "Below" loudly and clearly.

2. Test holds before putting weight on them.

3. Always remember that it is more difficult to climb down than up.

4. Protect the rope and pay unceasing attention to its management.

5. If in trouble let it be known. To fall without shouting is criminal.

6. Beginners should never climb unroped.

P. Connard.

TRIP REPORTS:

Easter Trip to Narrina Pound:

The party of four reached Narrina Hut via Blinman, Moolooloo, Hannigan's Gap and Patawerta Gap; the last 25 miles taking 24 hours. The tricky, 100 foot Squeeze Pit was descended, and several other holes on the cave ridge, very deep but too small to descend were investigated. The country on Narrina Station is magnificent - it must surely be the best in the Flinders (to quote the Trip Leader). The return journey was made around the top of the Pound to the homestead and the Lake Cave was visited. The exploration of the lake, which was covered with calcite flakes, was completed and several underwater offshoots which warranted further diving were found.

The Saltbush Gorge Cave was found from vague directions given by a local resident and much searching. The cave is a joint cave and was once worked for guano. The party returned exhausted to Adelaide late on Monday night (i.e. early on Tuesday morning).

Easter Trip to Mt. Schank Area:

The main purpose of the trip was a cave search in the area of Mt. Schank and the Little Blue Lake. The party stopped at the Tantanoola Lake Cave on Friday morning and left for Mt. Schank in the afternoon. Many sinkholes were noticed in the close vicinity of the road from Tantanoola to Mt. Gambier. Mt. Schank was climbed on the Saturday morning. The Slit Cave, Elap-Elap and Mitchell's Crossing Caves were visited during the weekend, as well as a number of sinkholes. In a dead-end passage in Mitchell's Crossing Cave, small hand and foot prints were found and it was thought that this might have been where the two children were lost last year. The party also managed to get lost, looking for a cave in a pine forest. This caused the Scouts that came with us to regard our map reading with disdain - we were finally found again! This area produces new material on every trip.

Curramulka Trip, 18th-19th May. 1963:

Exploration was started as soon as the main party arrived at Correll's Cave. Twenty-five skeletons were taken from the New Extension during the weekend and much to the dismay of the collectors, who thought they were very rare marsupials, they turned out to be possums. The entrance to the New Extension was widened in case of accidents. Parties went below the Rope into the Bushwalkers Extension, and into the passages over the Big Crevasse in the Ramshorns Extension, where some excavating was done. On Sunday most of the party went to Pondalowie Bay at the end of Yorke Peninsula.

CAVES: THEIR ORIGIN, DEPOSITS & FORMATION

For many years the subject of cave origin in limestone has been a controversial one in the field of science. Some scientists claim that these caves are formed below the water table, others say they were formed above the water table, while the remainder offer non-committal opinions. However they were formed, caves do exist and although their exact nature of formation is still doubtful it is generally accepted that they have been dissolved out by the action of water.

Ordinarily calcium carbonate (dominant constituent of limestone) is only slightly soluble in water but in the presence of carbon dioxide the solution becomes slightly acid and is able, as it percolates through the limestone, to dissolve a greater amount of carbonate. This carbonate is taken into solution as bicarbonate, which is more soluble than carbonate.

$CaCO_3 + H_2O + CO_2 = Ca(HCO_3)_2$

calcium carbonate calcium bicarbonate

This carbon dioxide is derived from the atmosphere as the water in the form of rain falls through it and also the soil, if any, for this contains a far greater percentage of carbon dioxide than does the atmosphere.

This water percolating down through the limestone will dissolve the carbonate especially along lines of weakness in the limestone which are more susceptible to attack of this nature. As this attack continues a crack may form and this is eventually enlarged into a cavern. In limestone as in other rocks, it is traversed by two systems of cracks known as bedding planes and joints. Bedding planes separate one layer of rock from another while joints are perpendicular to these planes and cut the limestone into more or less rectangular blocks. These cracks are particularly susceptible to attack and a cave formed from action of this type would be composed of sets of tunnels along the joints intersecting at right angles and crevasses also following the joint cracks. A cave of this type is Correll's Cave at Curramulka in S.A. where the water has dissolved limestone from these joints producing a box-like structure tunnel network.

These underground caves can sometimes give rise to topographic features in the form of sinks. When the ceaseless process of dissolving limestone has progressed to a point where the roof is both thin and weak

CAVES: THEIR ORIGIN. DEPOSITS & FORMATION Cont.

it may collapse under its own weight giving rise to a sink or depression in the surface on the site of the former cave. These sinks are particularly common in the South East of S.A. especially around Mt. Gambier and they were more than likely formed in this way.

One such cave whose roof gave way is found in the middle of the road to Pt. Macdonnell. The roof had the additional weight of a bullock team and dray in this case. Luckily the driver was around when the collapse occurred. Another cave which may become a sink hole in the not too distant future is the Lake Cave at Tantanoola.

Even as the caves are being slowly excavated by this dissolving process and by the mechanical action of waters flowing through them, deposition may still take place. By far the most abundant of these deposits is calcium carbonate which may take many forms.

Probably the best known deposit is the stalactite, a pendant-like dripstone formation. These can only develop where the loss of carbon dioxide from the ground water solution is sufficiently great to cause the precipitation of calcite before the drop falls from the roof. When the water percolates through the limestone the amount of carbon dioxide held in solution is far greater than if the drop were exposed to the atmosphere. Thus when the drip moves out onto the cave roof into an atmosphere similar to the air above, carbon dioxide is released to restore equilibrium between the amount of $C0_2$ in the atmosphere of the cave and that contained in the drop. In releasing the $C0_2$ calcite will be precipitated.

$$Ca(HCO_3)_2 = CaCO_3 + H_2O + CO_2$$

precipitated released into cave air

The precipitation can take place in the form of a skin or shell over the drip and as its size increases it will become too heavy and fall. In doing so the skin is naturally broken and some of the skin will slip back towards the base of the drop where it will harden into a small rim deposit especially if the next drip is slow in building up. The next drop forms and drops building up the rim a little more. As this process is repeated again and again the stalactite will grow downwards. Providing that the conditions remain constant and the drops are slow to form a straw or thin uniform tube of calcite is produced. Deposition in the tube may ultimately close it, but will more than likely continue on the outside greatly enlarging it.

Instead of a rim deposit forming, deposition could take place over the whole base area of the drip and further additions occurring on this produce a solid stalactite without any central hollow tube.

Closely associated with the stalactites are the eccentric types known as helictites which generally have a fine or even appreciable size tube running through them. Others are solid but these could have been initially hollow and become choked and blocked due to internal deposition. Some of these are thought to develop on a break out point above the point of seal on a choked straw. Despite all the theories put forward concerning their origin the exact nature of helictite formation is still one of much speculation.

Closely linked with the formation of the stalactite is that of the stalagmite. Unlike some stalactites these are solid and are not hollow and grow upwards from the floor due to deposited carbonate released from the water drops after having fallen from the roof. A stage may eventually be reached when the stalactite and the stalagmite meet and join and the resulting formation is known as a column.

If the drop of water should find itself on entry to the cave on a sloping roof it will naturally tend to run down the slope. Whilst it is doing so it will probably lose CO_2 as in the case of the stalactite and calcite will be deposited along its path. If allowed to continue the formation will grow slowly downwards. Since the path of the drop need not be straight but may be curved very unusual and striking formation known as curtains or shawls are formed. Examples of this occur in the Fox Cave at Naracoorte in S.A.

CAVES: THEIR ORIGIN. DEPOSITS & FORMATION Cont.

Other deposits of calcium carbonate include flowstone a coating of limestone covering floors, walls and roof alike formed when water deposits calcium carbonate as it flows over the cave interior. A most unusual type of deposit which deserves a special mention is lublinite. This occurs either as a white paste or more usually as a crumbly white powder. It is thought to be composed of two different habits of calcite. The first being a granular micro-crystalline form, the other a felted micro-crystalline aggregate of very delicate needles. However, the exact nature and formation of this type of deposit is still doubtful.

Another type of deposit found in caves is gypsum $CaSO_4.2H_2O$. This can be derived from the limestone itself or from the action of sulphuric acid derived from the sulphur content of the rocks on the limestone. This gypsum is less soluble than the calcite and will be precipitated first from solution. Gypsum occurs as stalactites as encrustations on walls and calcite stalactites, stalagmites, crystal clusters and radiating clusters of curved flakes known as gypsum flowers. At Correll's Cave, Curramulka, there is a notable occurrence of gypsum crystals including long hair fine crystals.

Nigel Duncan.

THOUGHT FOR TROGS - THE GROUP:

A report of the formation of the Group was found in the Australian Amateur Mineralogist of December 1955. Already the Group had 50 members, five of which were women. This was the first (and still is) the only Group formed in the State to study caves scientifically. The aim of the Group, it was stated, was to survey caves carefully and to record the results permanently. Zoological, anthropological and geological specimens, with details of their occurrence were to be handed to the Museum (and this still holds). It was hoped that much new and valuable information would be handed into the Museum. At the end of the article, its author hoped that the Group would systematically record all known caves in the State and would thereby greatly assist the natural history investigations of the State.

If any member has any article which would be of interest to other members and suitable for the next newsletter, would they please send it to the Publications Officer by the beginning of August. (i.e. to Judd McLean Smith, 23 Humber Road, Osborne - 49.9256).

Judd McLean Smith,
Publications Officer.

PROGRAMME JUNE-AUGUST, 1963.

JUNE:

June 8th-10th, Flinders Ranges -- Arcoota and Buckalowie.
Joint Leaders –
Bill Rouse, 237 Military Road, Henley South. 56.2220
Malcolm Walter, Sixth Ave. St. Peters, 63.1579

June 18th, Committee Meeting.
Jackson's Place, 6 Hudson Ave, Rostrevor.

June 26th, General Meeting, National Fitness Council Rooms, South Terrace. Speaker: Vic Linke (Photography)

JULY:

July 7th-8th, Punyelroo (Swan Reach)
Leader - Justin Cole, 28 Philip Ave, Leabrook, 31.7388

July 19th, Committee Meeting.
Davies' Place, 53 Cator St, Glenside.

July 25th, General Meeting, National Fitness Council Rooms South Terrace. Two short talks of undisclosed nature and if time and projector, members slides.

AUGUST:

August 4th-5th, Orroroo, Mt. Remarkable.
Leader - Bob Davies, 53 Cator St. Glenside (sometimes available during the day at UX-2047)

August 21st, Committee Meeting.
Connard's Place, 37 Tennyson Ave, Tramere.

August 22nd, General Meeting, National Fitness Council Rooms, South Terrace. Speaker: Gordon Gross (New Caledonia)

Trip leaders must be notified at least seven days before the trip departs. Applications after this will only be considered if transport is available.

All non-members of the group who have attended 3 or more functions of the group without paying associate membership fees, will be charged normal trip fees plus 7/6 if they attend future trips.

All correspondence re. trips to the Trip Leader, all other correspondence to the Secretary, C/O South Australian Museum, Nth Terrace, Adelaide.

Contact List:

Quartermaster - Athol Jackson, 6 Hudson Ave, Rostrevor.

All gear must be signed for and a list of gear must be given to the quartermaster at least seven days before the trip departs.

Search and Rescue - Phil Connard, 37 Tennyson Ave, Tranmere, 31.7935.

President - John Bishop, 11 Auburn Ave, Myrtle Bank, 79.5907.

Secretary - Bob Davies, 53 Cator St., Glenside (sometimes available during the day at UX.2047).

CAVE EXPLORATION GROUP (SOUTH AUSTRALIA)

CHECKLIST OF SOUTH AUSTRALIAN CAVES JUNE, 1963.

The following is a complete checklist of South Australian caves known to the Group up to the present time, and the cave numbers allocated to them.

For reference purposes, the State has been divided into six zones on a geological or geographical basis, each zone with a prefix letter and the caves numbered consecutively in order of discovery. Numbers are only given after the cave has been recorded in trip reports or published accounts, or on the receipt of a definite report. The number serves as a positive identification of the cave where there is ambiguity of names or where no suitable name has been adopted.

Where a name is being chosen, preference should be given to those names that refer to the location or notable features of the cave itself rather than to passing happenings in the cave that mean nothing to other cavers. A district name is attached to the cave, e.g. Lake Cave, Tantanoola (S43) to distinguish it from the Lake Cave, Narrina (F11).

A map showing the zones and caving areas is appended.

Note: Numbers allocated to W.A. caves in the Eucla area for recording purposes have been included in this list.

Cave Number	Name	Area	Survey Scale;grade;date
NULLARBOR PLAINS		PREFIX "N"	
N1	Warbla Cave	Eucla	50;VI;57
N2	Weebubbie Cave	Eucla, W.A.	50;III/IV/VI;57/60
N3	Abrakurrie Cave	Eucla, W.A.	50;VI;57
N4	Koonalda Cave	Koonalda H.S.	50;VI;6O
N5	Unnamed blowhole	||	
N6	Koomooloobooka Cave	Koonalda H.S.	
N7	Murrawijinie No 1 Cave	Nullarbor H.S.	20;VI;57
N8	Murrawijinie No 2 Cave	||	
N9	Murrawijinie No 3 Cave	||	
N10	Unnamed Cave	||	
N11	New Cave	||	20;V;57
N12	Unnamed Cave	||	20;II;57
N13	Ivy Cave	||	50;II;57
N14	White Wells Cave	White Wells H.S.	20;V;57
N15	Weekes Cave	Koonalda H.S.	
N16	Clay Dam	Koonalda H.S.	
N17	Chowilla Landslip	Eucla, W.A.	
N18	Unnamed Cave	Nullarbor H.S.	50;II;57
N19	Unnamed Cave	Eucla, W.A.	-;I;57
N20	The Catacombs	Nullarbor H.S.	20;V/VI;57
N21	Bunabie Blowhole	Eucla	-;I;57
N22	Knowles Cave	Nullarbor H.S.	100;II;57
N23	Jimmies Cave	Nullarbor H.S.	50;II;57
N24	Unnamed Cave	Eucla, W.A.	
N25	||	Eucla, W.A.	
N26	||	Koonalda H.S.	
N27	||	Koonalda H.S.	
N28	||	Koonalda H.S.	
N29	||	Koonalda H.S.	
N30	||	Koonalda H.S.	
N31	Sammys Cave	Koonalda H.S.	
N32	Unnamed Pothole	Koonalda H.S.	10;III;60
N33	Unnamed Pothole	Koonalda H.S.	10;111;60
N34	Unnamed Cave	Eucla, W.A.	
EYRE PENINSULA		PREFIX "E"	
E1	Homestead Cave	Lake Hamilton	20;III/VI;58/61
E2	Honeycomb Cave	||	50;I;58
E3	Unnamed Sinkhole Plain	||	
E4	Unnamed Cave	||	50;I;61
E5	Unnamed Cave	||	50;I;61

YORKE PENINSULA AND ADELAIDE		PREFIX "Y"	
Y1	Corrells Cave	Curramulka	20;Vl;61-
Y2	Town Cave	||	20;111;57-8
Y3	Windmill Cave	||	?;?;62
Y4	Port Price Cave	Port Price	-;I;57
Y5	Reynella Cave	Reynella	
Y6	Unnamed Cave	Bow Hill	
Y7	Unnamed Cave	||	

KANGAROO ISLAND		PREFIX "K"	
K1	Old Tourist Entrance,	Kelly's Hill	20;V/VI/VII;55-56
K2	Crevasse Cave	||	||
K3	Bells Entrance	||	||
K4	Unnamed Entrance	||	20;V/VI/VII;55-6
K5	Ravine des Casoars Cave	Flinders Chase	20;11;55
K6	Mt. Taylor Cave	Mount Taylor	20;11;55/62
K7	Unnamed Cave	Kelly's Hill	20;11;56
K8	||	||	||
K9	||	||	||
K10	||	||	||
K11	Frosted Floor Cave	Kelly's Hill	20;VI;57
K12	Possum Skin Gave	Cape Borda,	50;II;60
K13	Porky Flat Cave	Porky Flat	
K14	Silt Cave	Kelly's Hill	20;VI;59
K15	Deep Hole	Kelly's Hill	20;IV;59
K16	Unnamed Cave Ravine des Casoars, Flinders Chase		50;II;60
K17	West Bay Hollow Gave	Flinders Chase	100;I;60
K18	West Bay Cave	Flinders Chase	3;II;62

FLINDERS RANGES		PREFIX "F"	
F1	Mt. Remarkable Blowhole	Melrose	20;II;55/56
F2	Greys Hut Cave	Melrose	20;I;56
F3	Mairs Cave	Buckalowie Ck.	20;III/lV/V;57
F4	Clara St. Dora	Buckalowie Ck.	20;IV;56/57/61
F5	Arcoota Ck. Cave	Holowilena	20;III/IV;56/62
F6	Good Friday Cave	||	40;-;-
F7	Mt. Sims Cave	||	
F8	Oraparinna, Cave	Oraparinna	25;-;-
F9	Wooltana Cave	Wooltana,	?;?;62
F10	-		
F11	Lake Cave	Narinna	20;I;59
F12	Backwater Cave	Point Well Station	
F13	Bunyeroo Gorge Cave	Wilpena	
F14	Unnamed Cave	Wilcowie	
F15	Eyrie Cave	Bunkers Range	20;IV;58
F16	Two Quid Cave	Oraparinna,	20;II;58
F17	Unnamed Cave	Arcoota Ck, Holowilena	20;VI;58
F18	Squeeze Pot	Narinna Hut	20;V;59
F19	Joint Cave	Narinna Hut	
F20	Orrorroo Cave	Orrorroo	
F26	Burr Well Cave	Burr Well	

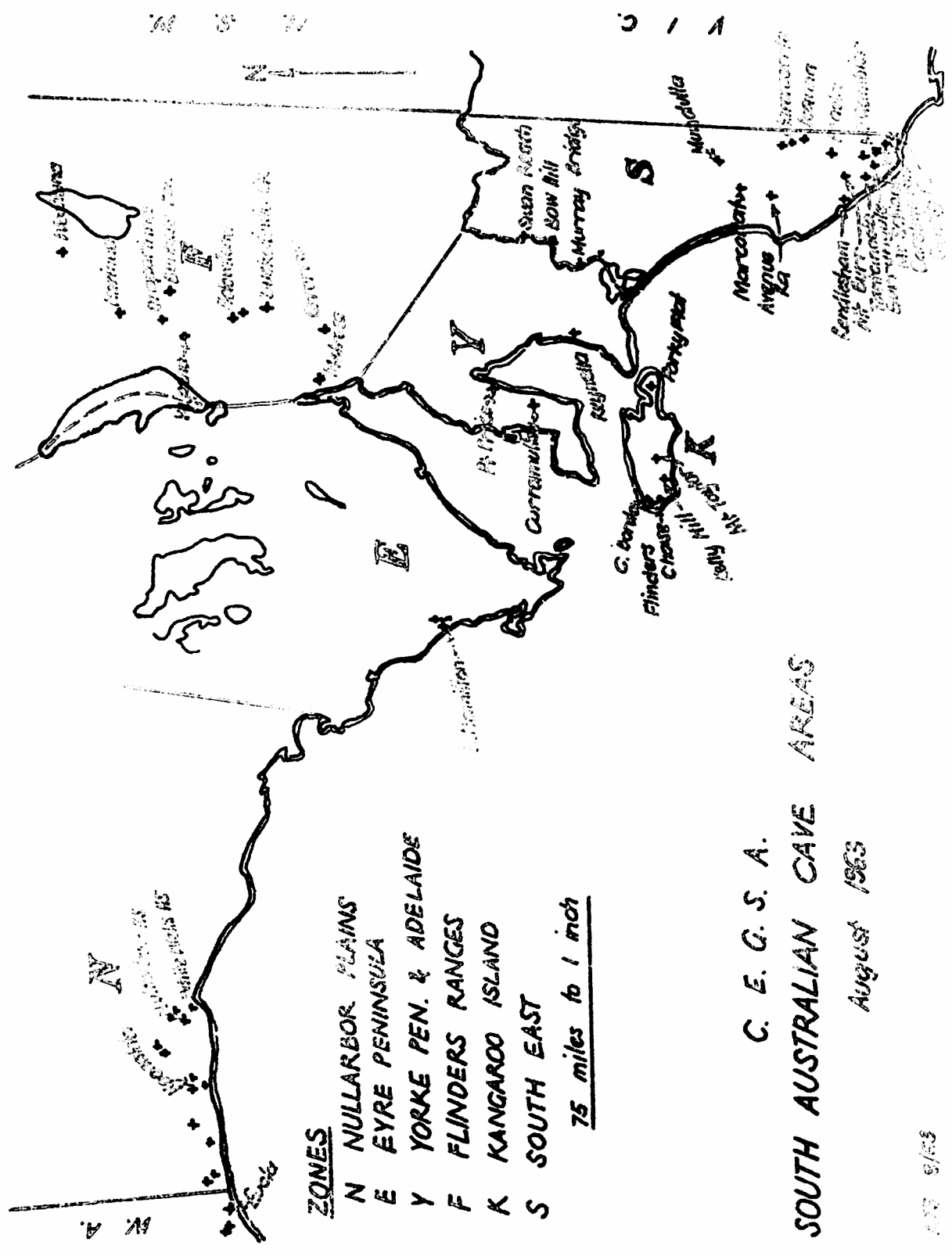
SOUTH EAST		PREFIX "S"	
S1	Snowflake Cave	Glenelg River	20;VI;56
S2	Victoria Cave	Naracoorte	20;VI;56
S3	Bat Cave	||	20;VI;62
S4	Alexandra Cave	||	20;VI;56
S5	Big Cave	||	20(50);V;56
S6	Appledore Cave	||	
S7-8	Blackberry Cave	||	
S9-10	Tomato-Stick Cave	||	(Map not complete)
Sll-12	Cathedral Cave	||	20;V;59
S13	Brown Snake Cave	||	
S14	Beekeepers Cave	||	20;II;62
S15	Sleeping Cave	Glenelg River	
S16	Hand Cave	Glenelg River	
S17	Punyelroo Cave	Swan Reach	100;-;37

SOUTH EAST CONT.

S18	Town Hall Cave	Mt. Gambier	50;II;63
S19	Monbulla Cave	Penola	20(50);II;57
S20	Umpherstons Cave	Mt. Gambier	50;II;63
S21	Wurwurlooloo	Mt. Schank	20;VI;62
S22	Gouldens Hole	||	20;VI;62
S23	Little Blue Lake	||	
S24	Caroline Sinkhole	Caroline Forest	20;VI;61
S25	Allendale Sinkhole	Allendale East	
S26	Tourist Cave	Tantanoola	20;VI;58
S27	Three Sisters	||	20;VI;58
S28	Elap Elap	Mt. Schank	20;VI;62
S29	Sand Cave	Joanna	20;VI;61
S30	Robertson Cave	||	
S31	Tortoise Cave	||	
S32	Jam Tin Cave	||	
S33	Fox Cave	||	(map not received)
S34	Haystall Cave	||	
S35	Corner of the Fence Cave	||	
S36	Dead Sheep Cave	||	
S37	V.D.C. Cave	Naracoorte	
S38	James Quarry Cave	||	
S39	Hynam Quarry Cave	Hynam	
S40	Hoods Cave	Joanna	
S41	Swamp Cave	||	
S42	Quarry Cave	Mt. Burr	20;I;58
S43	Lake Cave	Tantanoola	20;IV/VI;58-61
S44	Muddy Cave	||	
S45	Cave on Forest Reserve	||	
S46	Engelbrechts Cave	Mt. Gambier	
S47	Wrecked Car Cave	Penola	
S48	Unnamed Cave	||	
S49	||	||	
S50	||	||	
S51	||	||	
S52	Five Corners Cave	Mt. Gambier	
S53	Showgrounds Sink	||	50;II;63
S54	Drop Drop	||	
S55	Well Cave	||	
S56	Mitchells Crossing Cave	||	
S57	Benara Sinkhole	Benara	
S58	Marcollat Cave	Marcollat	20;II/IV;58
S59	Lost Cave	Naracoorte	20;III;58
S60	Morgans Cave	Burrungule	-; I;57
S61	Graveyard Cave	Mt. Burr	20;I;58
S62	Unnamed Cave (near S61)	Mt. Burr	-;I;58
S63	Rendlesham Cave	Rendlesham	20;II;58
S64	Specimen Cave	Naracoorte	20;VI;59
S65	Champresses Cave	Mundulla	
S66	Tantanoola Sinkhole	Tantanoola	20;VI;61
S67	Hells Hole	Caroline Forest	20;VI;61
S68	Cave Park Cave	Naracoorte	
S69	Hodges Cave	Joanna	
S70	Hot Air Cave	Papineau Rocks	20;VI;58
S71	Smoke Cave	Joanna	
S72	Standing Cave	Papineau Rocks	
S73	Unnamed Cave	Naracoorte	
S74	Unnamed Sinkhole	Barnoolut	50;II;63
S75	Simpsons Hole	||	50;II;63
S76	Double Well or Sisters	||	20;VI;62
S77	Rubbish Cave	||	20;VI;62
S78	Kilsby's Hole	||	20;VI;62
S79	Devils Punchbowl	||	20;VI;62
S80	Woolwash Cave	||	50;II;63
S81	Unnamed Sinkhole	||	50;II;62
S82	||	||	50;II;62
S83	||	||	50;II;62
S84	Unnamed Cave	||	
S85	Walnut Cave	Mt. Schank	50;I;62

SOUTH EAST CONT.

S86	Unnamed Sinkhole	Caroline Forest	50;II;62
S87	Rifle Range Cave	Penola	
S88	Unnamed Sinkhole	Mt. Gambier	
S89	Slit Cave	Mt. Schank	
S90	Gran Gran Cave	Mt. Burr	
S91	Unnamed Sinkhole	Burrungule Forest	
S92	Murray Bridge Cave	Murray Bridge	20;II;63
S93	Windmill Pipe Cave	Kongorong	
S94	Gums Road Cave	||	
S95	Bottlebrush Sinkhole	Caroline Forest	
S96	Tankstand Cave	Kongorong	
S97	Hancocks Cave	Mt. Schank	
S98	Unnamed Sinkhole	Mt. Schank	
S99	Unnamed Sinkhole	Mt. Schank	



REVISED CONSTITUTION OF C.E.G.S.A.

1. NAME:
   (a) The name of the Group shall be "Cave Exploration Group (South Aust.)".
   (b) The abbreviation shall be C.E.G.S.A.

2. OBJECTS:
   (a) To foster caving, speleology and the preservation of natural caves, with particular reference to South Australia.
   (b) To explore, survey and study South Australian caves.
   (c) To place on record the results of such investigations.
   (d) To cooperate with other bodies in the furtherance of these aims.

3. MEMBERSHIP:
   There shall be the following classes of members,
   (a) Full Members,
   (b) Associate Members,
   (c) Honorary Life Members.

   (a) Full Members (to be henceforth known as Members) shall be those persons who subscribe to this Constitution and
       (i) who are over 18 years of age and complete 50 hours as a member of an active caving party in not less than three months of Associate Membership.
   or (ii) Full Members of any other Speleological Society,
   or (iii) Whose qualifications are approved by a General Meeting.
   All applicants must own an approved helmet, be proposed and seconded by financial members and elected by secret ballot at a meeting of the Committee.
   (b) Associate Members (to be henceforth known as Associates) shall be those persons
       (i) who are over 16 years of age and who subscribe to the ideals of the Group and who do not qualify for Full Membership. Associates shall have full privileges of Membership except that they shall not hold office or vote.
   It shall be a condition of Associate Membership that an approved helmet shall be owned except at the discretion of the Committee.
   (c) Honorary Life Members.
       (i) Upon the recommendation of the Committee in recognition of special services to the Group, Members may be elected Honorary Life Members by a General Meeting and shall enjoy all privileges of Membership.

4. COMMITTEE:
   (a) Shall consist of President, Vice President, Secretary, five Committee members and, one Museum representative appointed by the Director of the South Australian Museum and who shall be an ex-officio Member.
   (b) At the first meeting of the Committee, it shall appoint from its Members the office bearers Treasurer, Quartermaster, Records Officer, Membership Officer and Publications Officer.
   (c) The Committee shall conduct and manage the affairs of the Group subject to this Constitution.
   (d) The Committee shall have power to form subcommittees and to co-opt. but co-opted persons shall not have power to vote nor to form part of a quorum.
   (e) The Secretary shall prepare a summary of the Committee's work for report to the next General Meeting.

5. OFFICE BEARERS:

(a) The Honorary Office Bearers of the Group shall be:-
   (i) President.
   (ii) Vice President.
   (iii) Secretary.
   (iv) Treasurer.
   (v) Quartermaster.
   (vi) Records Officer.
   (vii) Membership Officer.
   (viii) Publications Officer.

(b) The President, Vice-President, Secretary and five Committee Members shall be elected at the Annual General Meeting and shall hold office from the A.G.M. at which their election is announced until the A.G.M. of the following year, or until their successors are appointed.

(c) The nominees for election and their respective proposers and seconders shall be financial Members; the nominees' consent shall be obtained and nominations should close before the commencement of the A.G.M.

(d) In the event of an Office Bearer vacating his position, a By Election of which notice has been given as for an Extra-Ordinary General Meeting, shall be held at the next General Meeting and the elected Office Bearer shall hold office until the next A.G.M. or until his successor be appointed. The conditions of nominees and nominations shall apply as at an A.G.M.

(e) Duties of Office Bearers:
   (i) The President shall act as Chairman at meetings of the Committee, Annual General Meetings, Ordinary and Extra-Ordinary General Meetings and shall have power to convene Committee Meetings.
   (ii) The Vice-President shall assist the President and in the President's absence shall carry out the President's duties.
   (iii) The Secretary shall keep minutes of all the meetings and handle the correspondence of the Group, draw up agendas, compile and present a report to the A.G.M. and shall co-ordinate the internal affairs of the Group.
   (iv) The Treasurer shall be responsible for the monies of the Group and shall submit an Audited Annual Statement and Balance Sheet for a given period when called for.
   (v) The Quartermaster shall have custody of and shall maintain the caving equipment of the Group and shall keep an inventory to be audited and submitted to the A.G.M. and when otherwise called for.
   (vi) The Records Officer shall keep a file and card system of South Australian cave occurrences, maintain the Library acquisitions, the maps and speleological records of the Group.
   (vii) The Membership Officer shall maintain the record of all membership of the Group and shall maintain a current list of addresses of all persons and organizations associated with South Australian speleology.
   (viii) The Publications Officer shall prepare, in collaboration with appropriate officers, a news-sheet and a programme of meetings, trips and social events, to be submitted to the Committee for approval before issue every three months. He shall also be responsible for the preparation and/or publication of all other material as directed by, and at the approval of, the Committee.

6. MEETINGS:
   (a) Standard procedure shall be adopted at all meetings.
   (b) A General Meeting (G.M.) shall be held each month for the transaction of general business. Fourteen days notice, in writing, of the holding of any G.M. shall be given to each member, specifying the date, place and time of commencement of the meeting.
   (c) An Extra-Ordinary General Meeting (E.G.M.) shall be called at the discretion of the Committee or upon the written and signed request of any five financial members. Notice shall be given as for a G.M. and shall include the nature of the business to be transacted.
   (d) The Annual General Meeting (A.G.M.) shall be held during February of each year for the presentation of the Annual Report and for the election of the Committee. Notice shall be as for an E.G.M.
   (e) A Committee Meeting shall be held prior to each G.M. and A.G.M. and at such times and places as the Committee or the President may determine. Fourteen days notice shall be given to all Members of Committee. If all Members of Committee by any communication, signify their consent, a Committee Meeting may be held at shorter notice.
   (f) Quorum:
      (i) A quorum for G.M.'s, E.G.M.'s and A.G.M.'s shall consist of 30% of the financial Members permanently residing within 50 miles of Adelaide.
      (ii) A quorum for Committee Meetings shall be five.
      (iii) No unfinancial Member shall form part of a quorum.

7. VOTING:
   (a) No Member shall be entitled to vote unless financial.
   (b) Members may vote by proxy. The vote shall be in writing, signed and in a sealed envelope.

8. FEES:
   (a) Annual Subscriptions, equipment fees and other charges shall be at rates recommended by the Committee and approved by a G.M.
   (b) No person shall be admitted as an Associate or Member until the prescribed fees are paid.
   (c) Annual subscriptions shall become due on the first day of March.
   (d) An Associate or Member whose Annual subscription remains unpaid after the expiration of two months from the date due, shall cease to be such a Member except in special circumstances, at the discretion of the Committee.
   (e) A Member shall be deemed financial upon payment of all monies due on the first day of March each year.

9. FINANCE:
   (a) The financial year shall begin on the first day of March each year.
   (b) All monies received by the Group shall be paid into a cheque account at a Bank recommended by the Committee, except for a maximum total of £5 which may be held by the Treasurer for payment of small amounts.
   (c) Payment of all amounts over £2 shall be by cheque, to be signed by any two of the following:
      (i) President
      (ii) Secretary
      (iii) Treasurer.
   (d) The Committee shall not have power to expend more than £5 of the Group's monies per month, nor more than £2 on any one item without the prior permission of a G.M.
   (e) An Auditor shall be appointed each year by the Committee to audit the financial Records, statements and balance sheets of the Group.

10. RULES:
   (a) Rules for the orderly working the Group may only be proposed at a G.M.
   (b) Detailed notice of motion shall be sent to all members not less than three weeks prior to such meeting.

11. ALTERATION OF CONSTITUTION:
   (a) The Constitution may only be changed at a G.M.
   (b) Detailed notice of motion shall be sent to all members not less than three weeks prior to such meeting.
   (c) The motion shall require a 75% majority of those Members present, to be carried.

12. DISCIPLINE:
   (a) Should any Member or Associate of the Group violate this Constitution or the rules of the Group, or for any cause be deemed an undesirable Member, he may be expelled, suspended, requested to resign or cautioned, by a 75% majority decision of the members present at a meeting of the Committee called for that purpose.
   (b) Any Member or Associate so disciplined shall have a right of appeal to the next G.M. of the Group.

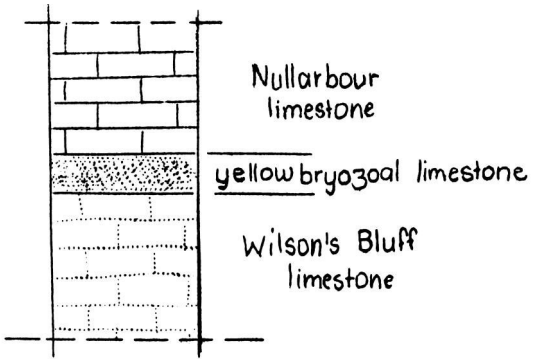
13. SPECIMENS:
   (a) All speleological specimens collected by members, and visitors on official trips shall immediately become the property of the South Australian Museum. Such specimens may be retained temporarily for research purposes within the Group.

14. DISBANDMENT:
   (a) The existence of the Group shall end if
      (i) a motion is carried to that effect.
      (ii) membership falls below three members.
      (iii) twelve months elapse without a meeting.
   (b) A motion for disbandment shall be submitted and dealt with in the same manner as a motion for the amendment of Constitution, except that the motion must be carried by 90% of those members present.
   (c) Upon disbandment, Archives and any other property belonging to the Group shall become the property of the South Australian Museum.

Robert W. Davies
HON.SEC.

THE BIG CAVES OF THE NULLARBOR.

Koonalda, Warbla, Weebubbie and Abrakurrie all come in the category of Deep Caves, and are situated in the coastal scrubland region of the Plain. In this region the limestone bed thickness and the rainfall are maximum. They are simple in form and plan and reach down to the level of ground-water saturation. Koonalda, Weebubbie and Warbla have lakes at levels of 265', 285' and 300' respectively, below the level of the plain. Dripstone and flowstone decorations are absent from the deep caves.



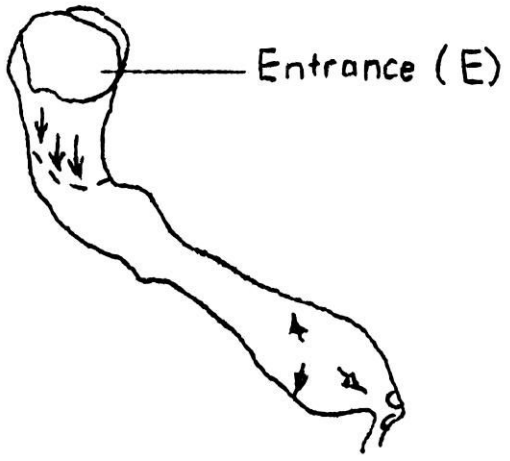
STRATIGRAPHIC COLUMN OF TIE LIMESTONES OF THE PLAIN.

The big caves are found almost entirely in the Wilson's Bluff Limestone.

DESCRIPTION OF THE CAVES.

N1. WARBLA CAVE:

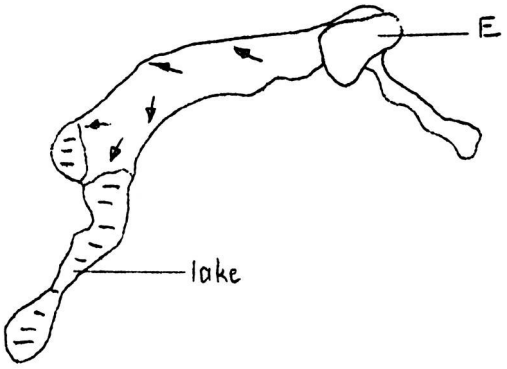
There is a sinkhole approximately 160' in diam. with a high rockfall mound in the centre grading to the south to the actual cave entrance. The entrance is an unchoked arch which permits a considerable amount of light to enter. The cave is a single long tunnel filled with fallen roof material. At the far end is a huge rockpile from the top of which the roof rises approx. 80'. The pile drops at an angle of 45 degrees till the water table is reached 140' below. This slope is dangerous, particularly the last 40' or so, which is covered by a thick layer of dry bat guano. This is now friable and dusty, and there are no signs of recent visits by bats. The water in the pool was clear until disturbed, and although not plumbed, is quite possibly 30'-40' deep. The lower end of the cave was covered with a sandy detritus from the weathering of the roof material, which is similar in this section to that in Koonalda near Dr. Gallus' extension (excavation). It also contained cherts and flints.



N2. WEEBUBBIE CAVE:

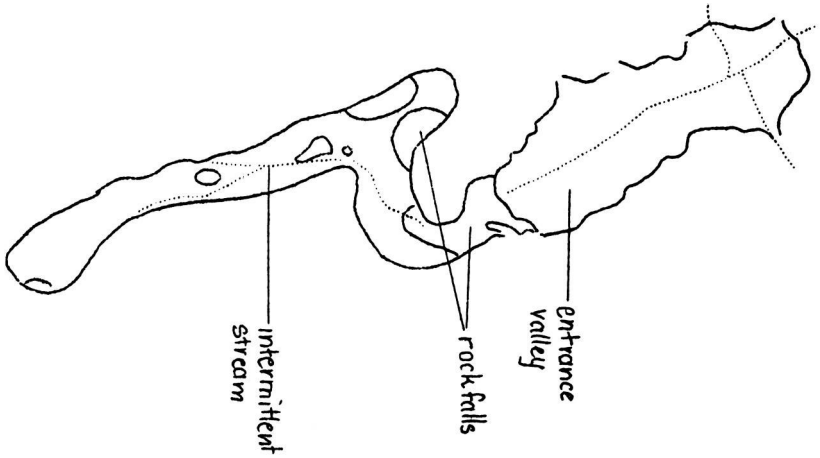
A large sinkhole similar to Warbla, also backing into a low hill drops down to the actual entrance, which is opposite the main water entry from the plain. The entrance is partially choked with huge boulders. The main tunnel has a floor of large broken roof material and gradually descends to the water-table which is at 280' from the plain level. There is a subsidiary collapse at the beginning of the main lake, which contains a small lake cut off from the other by a small peninsula, but is connected with it. The main lake, which is a continuation of the tunnel from the entrance, is 500' long and averages 50' in width. No gear was available for sounding depths, but it is estimated by Thomson to be 100'. The water is crystal clear and care must be exercised to prevent stepping into it. The water has a saline taste. There is a domed roof over the dry section of the cave,

i.e. over the talus floor, and a flat roof over the water… the change from one to the other being fairly sudden. There seemed to be a definite level at which the majority of the pockets of the chalky limestone filled with dark brown crystalline calcite occur in these caves, and was more noticeable in the large caves like Weebubbie. There is a layer of fossil shells just inside the entrance, approx. level with the bottom of the sink which amplifies the layering system of hard dark crystalline limestone on top. A layer of chalky rotten limestone with many fossils and a lower layer of soft chalky limestone without fossils (to the naked eye that is) are present. Opposite the main entrance on the far side of the sinkhole there is a large extension. This was the only large cave visited which had a subsidiary extension except Koonalda. In it there is a chamber formed amongst huge boulders which have veins of old water deposited calcite running through them which subsequent collapsing has exposed. A final chamber was full of bats; the only bats recorded on the trip. Judging from the considerable amount of fresh guano that has accumulated, the bats have been using this section for some time.



N3. ABRAKURRIE CAVE:

The depressed valley descends to an arch nearly choked with huge boulders, and the entrance rockpile descends at a steep angle to the main floor of the cave. The watercourse has worn down its path on the right hand side of the slope and towards the bottom the gradient eases off depositing successively smaller stones until the main chamber is reached some 600' from the entrance where the grading is to small pebble and sand size. The main chamber appears to branch into two different directions, but if the map is studied it is obvious that the chamber is reasonably straight. The right hand leg extends several hundred feet and the whole chamber is over 1100' long, 80-150' wide, and 50-90' high enlarging to these maximum dimensions at either extreme. There is a flat alluvial floor falling to either end of the chamber, and the water follows a distinct course, the alluvial material grading successively to red sand and finally silt. Although there is no water present, it is obvious that it must stand there at times, and Thomson reports having seen it in the short leg. A small trench was dug but did not produce any bone or aboriginal artefacts, however, time did not permit much work in this direction. There are a number of smaller rockpiles as well as the two large ones across the entrance of the short leg. This cave is approx. 50' shallower than the water table caves, and it is suggested that there is 50' or so of silt covering the roof debris.



N4. KOONALDA CAVE:

Like Abrakurrie, this cave has a short steep descent to a long nearly horizontal main passage, with its floor descending from 240' at the foot of the slope to about 270' at the far end where it is submerged. However this main passage runs northwards away from the coast in contrast with the other caves. The North passage is joined by two branches; a passage running NNW at the foot of the initial incline (Northwest Passage) and another branching off to the WNW (West Passage) about 500' further in. Between these two branchings, the floor of the North Passage carries a good deal of red earth and clay as well as rock debris. There is a collapse dome at the junction with the West Passage and immediately beyond a small lake of shallow water, a few inches to 3-4' deep. Thick mud overlies angular rocks beneath this lake. A low isthmus of rockfall and clay leads beyond to the second lake, about 500' long and 3-5' deep on the whole. Many rocks break its surface. A dome occurs at a bend where the lake widens. Watermarks showed higher levels at 9”; 6'9"; and 19'9” above the level at January 1957. A huge conical rockfall, 85' high beneath the highest dome of all, separates the second lake from the final deep clear lake of 20-30' deep. This ends beneath a small done but a nearly water filled passage, 12' wide continues as yet unexplored. The west passage is at a level of the north passage and is floored by low debris piles. There are two shallow lakes, the farthest reaching a maximum depth of 10-15'. The passage ends in a dome pit. The Northwest Passage is narrower and more irregular in profile. Near the junction of the floor it is at the same level as that of the main passage and then it rises more than 100' abruptly beneath a collapse dome. Beyond, it carried on at 50-60' above the initial level. It is then interrupted by a second rockpile beneath a dome and finally links by means of a flat passage only a foot high with the West Passage about 90' above the floor of the latter’s dome pit. The roof of this flattener shows current scalloping indicating a former current flowing from the West Passage into the Northwest Passage. Just above the first steep rise of this passage, there is a small area of well rounded boulders of the chalky limestone near the eastern wall, set amongst the general field of irregular fallen blocks. These rounded boulders can only be the product of a former strong current through the passage. Some of them show small solution cups and pans pitting their surface through subsequent roof drip. This high part of the North West Passage seems to represent an earlier and higher level in the development of the Koonalda Cave.