

ASF

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From the 20m high terminal dome in Abaturrie Cave N3
Black & white print from Kodachrome slide by Glenn Pure.

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Number 85 , Spring 1979

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A few points at which I hope none will take umbrage—I am having certain problems in editing ASF Newsletter. I realise that the newsletter is a semi-scientific publication, designed to keep cavers throughout Australia informed and amused. Difficulties have arisen in some of the articles submitted. All these articles are relevant to the Newsletter and will be published, but their form on presentation may contribute to the premature ageing of the editor. Nearly all of us are amateur speleologists but this is no excuse for poor spelling, abysmal punctuation and non-terse writing. This sounds dreadfully pedantic, but please, when you submit an article (note I said 'when' not 'if'), type it double space if you can (write it clearly if you and typewriter are not on amiable terms, and still double space the article). Please print difficult names (Western Australians please note!).

Clear black and white photographs for the cover are welcome—at a suitable size, approximately twenty-one by seventeen centimetres, height and breadth respectively. You can send a negative (black and white or colour) or a clear colour slide, with acknowledgements. All care will be taken with these and promptly returned to you. Glenn Pure very kindly does the processing. Send diagrams on a separate sheet, and do the lettering in Letraset. If you have any unsurmountable problems with these, contact me.

In conclusion, I can see the "I am a teacher" written between the lines. Be assured however, that every article relevant to caving will be published. More articles please. Short articles and notices and copy for 'Down Under All Over' only for Issue 86, but more copy for Issue 87. Deadlines were printed in Issue 84.

Rosie Shannon.

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SCRUBBY CREEK CAVE

Lloyd Mill

In the North-West corner of the Buchan District is a cave called "Scrubby Creek". Not a very impressive name maybe, but the name belies the character of the cave. Scrubby Creek has been the scene of many an epic trip, not because of its being vertical or long, but because of the mud and water. It certainly is one of the hardest Victorian Caves and is possibly one of the finest sporting caves in Australia.

GEOLOGY: The cave is situated along the western edge of the Buchan Basin. The surface Scrubby Creek flows along the contact between the rugged, heavily forested Snowy River Volcanics and the more gentle cleared slopes of the Buchan Caves Limestone. The contact is considered to be depositional, with the limestones sitting conformably on the volcanics. The beds dip at moderate (thirty to fifty degrees) angles towards the east. The first part of the cave appears to mainly cut across the strike until the sump is reached. The sump is a very low section of passage extending some fifty metres. This lowness is possibly owing to a presence of a dolomite-rich portion of the limestone. This hasn't been tested, but dolomite is quite common in this part of the sequence.

From this point, the cave roughly follows the dip. Where the Loo extension comes in, the passage swings around ninety degrees and follows the strike. This is quite obvious in the large galleries at the far end, the roofs of which are large expanses of bedding plane dipping at about thirty degrees to the east.

The final rockpile appears to line up with a fault shown on Teichart and Talent's map.

DESCRIPTION : The resurgence of the cave is at the head of some large, scrub covered tufa banks. The usual entrance is nearby and leads down to a few metres of low dusty crawls, past the gate to a high narrow passage. This goes over a deep pool of water via a bridge of star stakes. A second pool is crossed using a wooden bridge. These pools are actually large water filled chamber, over which one walks. Beyond this, there are two possibilities to get to the sump. The first way is straight ahead to a small pool with a water-fall. Above this is a 'hairy' climb of three metres (usually requiring a scaling pole). Climbing through a short section of rockpile brings one to the stream. This is followed over some gravel terraces and in waist deep water to the start of the sump. This way is usually reserved for gear carting on work trips. For those on sporting trips, the rockpile to the left is negotiated. These two routes converge at the start of the sump. The sump is the most famous part of the cave. It is about fifty metres long and up to five metres wide. In places the roof dips down to, and under the water but a way can be found through the higher bits where most of the head is kept dry. Half way in is a small pocket where two people can get their heads and shoulders out. The next two to three metres is real 'roof sniffing stuff'. The danger lies not in the length, depth of water (crouching height) or the amount of air space. The danger lies in that there are virtually no sides to the sump. A false move followed by panic, could see the victim off to the sides with no air space whatsoever. Fortunately there have not been any accidents yet, but there have been a number of near misses. A safety line is usually rigged through the sump.

After the sump, the passage is still reasonably low but gradually increases in height, especially where the Grand Fissure comes in. This is a reasonably well decorated high passage running above and slightly to the side of the passage back towards the entrance. It is possibly the remains of an old upper level of the stream.

The main passage continues on as a spacious but sparsely decorated stream passage until the first rockpile. This presents a few difficulties owing to the muddiness of the rocks and cavers and the constriction of wet suits.

After the rockpile, the stream is rejoined. To the right and through some rocks is the Loo extension. This is a drained phreatic tube, barely walking height, which is about 200 metres long. At the moment, it is the principal floodwater feeder for the system. It ends at the Siren sump, which has been traversed once. It is about sixty metres long, with air space ranging down to one nostril, and with pockets of foul air present. This sump ends in a small chamber with a water-filled siphon on the other side, which is only sixty metres away from Storm-water Cave, an inflow cave.

Back at the rockpile, the main passage heads off to the left, and is the start of the infamous Troggs Wallow, 200 metres of glutinous mud. Walking is impossible, backstroke alternating with freestyle is recommended.

At the end of this is the second rockpile incorporating a squeeze. Soon after the rockpile, 'Whispering Chamber' starts. This is a large passage running along the strike, with a stream flowing along the floor and next to some large talus. The roof is formed by the bedding planes which disappear into the blackness on the left.

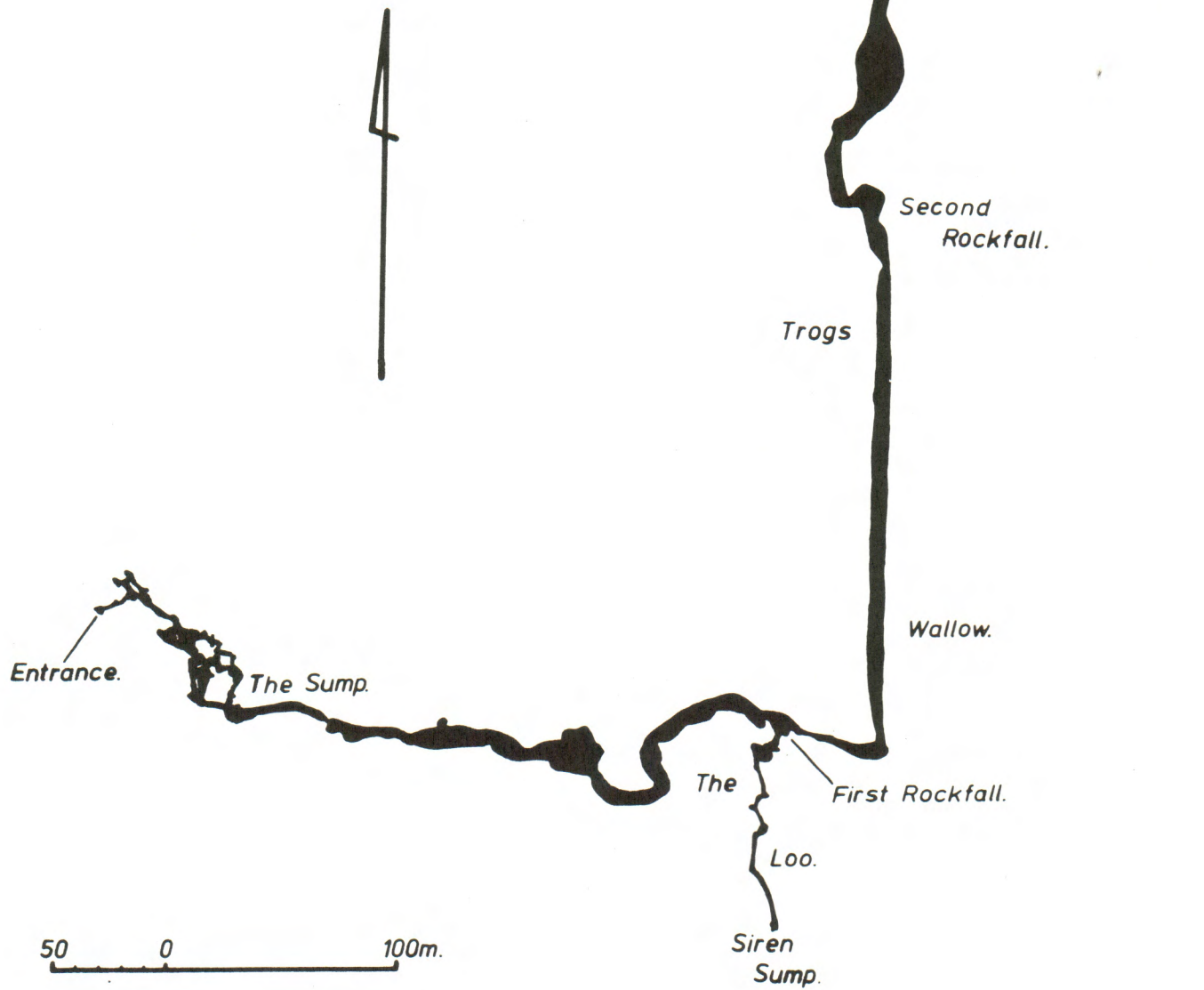
About 150 metres further on is a large pile of talus across the passage. The stream flows under it

(Cont. on page 4)

SCRUBBY CREEK CAVE

M-49.

Murrindal Victoria.



SCRUBBY CREEK CAVE (Cont.)

on the left. This is in Xmas Hall which is thirty metres or more high. Up on the left, is the beckoning hole which has been the target of a number of scaling attempts.

The passage gives out about 100 metres beyond Xmas Hall in a smaller stream passage where it reaches the impenetrable jumble of the third Rockpile. This rockpile has "temporarily" halted progress for fifteen years.

HISTORY OF EXPLORATION

The resurgence of Scrubby Creek was first noted by A.E. Kitson in 1907, when he recorded the tufa banks down to the Buchan River.

Frank Moon, the man credited with a lot of the early exploration work around Buchan, was always convinced of a large system in the hill. Sometime in the 1930's he made a free diving attempt on the resurgence, where he almost came to grief.

V.C.E.S. and S.A.S.S. Speleos' knew about the resurgence in the late 1950's but had done nothing owing to the difficulties involved. However, on the third of September 1960, John Driscoll of S.A.S.S., made a diving attempt using a hookah line. He reached a chamber, but on his line wedged between some rocks and he had some difficulties. In July of the following year, a blasting attempt was made to widen the fissure to make diving easier and safer. When this was finished, Peter Matthews went to have another look at an unpromising hole which he had found earlier, only this time the hole had a strong draught coming from a rockpile at the bottom. Serge Vercion and John Driscoll then joined Peter and they all commenced to dig out the rockpile. The first small chamber was entered and excavations came to a halt approximately where the gate is now located.

On the following weekend, John Driscoll, Jan Ling and Peter Matthews completed the dig and broke through, exploring as far as the main sump. On the next day, a large party consisting of Jan John, Peter, Ron Addison, John Noonan, Serge Vercion, Silva Vercion and Lorraine Newman, again moved to the sump where John Driscoll and John Noonan pushed the sump far enough to hear running water on the other side, but at this time the water was too high for the sump to be penetrated.

On August the twenty-sixth and seventh, 1961, an abortive trip was made on the sump by John Driscoll, where he once again had some difficulties.

As the water was again too high owing to heavy rain, a phone line was installed to the sump and a survey commenced.

During September, access to the sump was made easier by the installation of two bridges over deep pools, which made gear hauling much easier. Finally, on December the twenty-fourth, John Driscoll, John Noonan and Ron Addison penetrated the sump, while Peter Matthews and Lorraine Newman tended the safety line and found the sump to be about fifty metres long. The advance party extended the phone line through the sump and then pushed on to the start of Trog's Wallow, where they stopped owing to the lack of time.

Three days later, John Driscoll, Peter Matthews and W. Kunert went through the sump, backed up by Serge Vercion stationed at the telephone at the entrance side of the sump. In ten hours, the main party pushed on to the final rockpile and returned. At the time this rockpile was considered a temporary halt to progress. However this was not to be so and many attempts have been made at this barrier.

The first of these was in April 1962 when a camping trip was undertaken by Elery Hamilton Smith, Ron Addison, John Driscoll, Lorraine Newman and Beth Sowden. Their intention was to thoroughly explore the cave and collect biological specimens. Total caving time amounted to eighty-four hours, which at that time was an Australian record. It was on this trip that Whispering Chamber got its name owing to occasional rocks (whole chunks of strata) falling from the ceiling, and the apparent need to whisper to prevent more rocks from falling. During this time John Noonan, Serge Vercion and Peter Matthews completed the survey in trips of twelve, sixteen and fourteen hours.

For ten years after reaching of the final rockpile, many trips entered the cave, but discovered nothing new. Many of these trips tried cracking the final rockpile by various means but all failed. However, in 1971, a number of side passages were discovered, and two of these turned out to be quite important.

The first of these is the Loo and is on the right just before Trog's Wallow. This was discovered by Daryl Carr and Lou Williams who, when venturing up the cave after some heavy flooding, noticed a sudden drop in the flood levels on the wall. Poking around the rockpile wall on the right, they noticed a four gallon drum squashed against some rocks. Further poking revealed the start of the Loo. The first sixty-five odd metres were reasonably easy drained phreatic tube. The next 100 metres is Buchan's longest and most dangerous sump, which is named Siren Sump. A total of fifty hours was spent in digging an eighteen metre long channel to lower the water

(Cont. on page 5.)

SCRUBBY CREEK CAVE (Cont.)

in this sump to get through. Lou and Daryl penetrated the sump and found it to be approximately 100 metres long with an air space ranging from three centimetres to twenty-two centimetres, containing pockets of foul air. The sump finished in a large chamber with a siphon halting further progress.

The second extension was found by Dave North around the same time. Little information is known about this extension for conservation reasons. When found it was supposedly incredibly beautiful. The discoverers kept it a deadly secret until they had formulated a way to keep it in its pristine state.

The discoverers surveyed it, photographed it, marked out trails and clean areas and then gated it. A comprehensive Conservation Policy was drawn up (Matthews 1973) which has been strictly adhered to. As a result, the section is probably still in immaculate condition, (I don't know. I haven't seen it).

Soon after this Lou Williams noticed a large hole in the Xmas Hole wall. To get to it would require at least twenty-seven metre climb. So, in November 1973, he led a trip in to try and scale the wall. (Williams, 1974). Derek Lord and Daryl Carr tried using conventional rock climbing techniques, but failed owing to the walls being of "case-hardened mud".

A re-think was needed, so in the first week of 1976, Lou led two parties equipped with scaling poles to Xmas Hall (Mill 1976). This also failed because there were not enough poles.

Since then a number of trips have gone into the cave, mainly to familiarize the younger members with the cave. One of these trips penetrated the final rockpile a little further, with some prospects of cracking it. All signs point to more big stream passage beyond it. The surface above the cave has a few small holes and caves, which, at times, emit gusts of hot air.

Scrubby Creek Cave still has excellent prospects for extensions and who knows, maybe the next generation of cavers will make the big breakthrough.

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"Goodness only knows what we've struck. There are two openings into caves at the far end, and several narrow places that may lead ever so far."

"I hope everyone will remember," said Mr. Linton, "that when one wanders into places like this the ground is apt to disappear at any moment. I don't want any of my family falling into gulfs a hundred feet deep."

"Billabong's Luck" - Mary Grant Bruce.

ATEA '78

Julia M. James

An Australasian Speleological Expedition to Papua New Guinea.

A Preliminary Report

ATEA '78 was the third speleological expedition to the Muller Plateau in the Southern Highlands. In 1973, the Muirini Speleological Research Expedition (James et al, 1974) made a preliminary surface and cave exploration of the area. In 1976, an expedition returned to work on the drainage area of the Atea River and the Atea Kananda Cave. This cave was the focus of the 1978 expedition as the earlier investigation had indicated that it would be a challenging cave to explore. In contrast to the two preceding expeditions, there was to be an extensive programme of scientific studies.

Atea Kananda is located on a plateau (Map 1) which lies between the peaks of the Muller Range and the Strickland Gorge. The entrance to the cave is at an altitude of 1900 metres, and is three days trek from the nearest inhabited village, Kelabo. The expedition was in the caving area from June to August 1978. There were forty-eight expedition members from five countries: Australia, New Zealand, USA, Britain and PNG. The scientific team consisted of six earth scientists, seven biologists and a chemist.

The organization of ATEA '78 took two years, and twenty members of the four major Sydney Speleological Societies were involved. The expedition obtained recognition from the following official bodies: University of PNG, Institute of PNG Studies, PNG National Parks and Wildlife and the Geological Survey of PNG. A television film was made of the exploration of the Atea Kananda and a reporter from the Sydney Morning Herald accompanied the expedition.

The cost of an expedition such as the ATEA '78 is about \$ A 100,000. Of this \$ A 1250 was spent on research materials; experiments were designed for minimum cost. The money came from the following sources: about \$ A50,000 from expedition members' contributions, \$ A14,000 in cash sponsorship, \$ A15,000 from fund-raising events and the balance by donation of supplies and equipment, and by discounts on airfares, freight, etc.

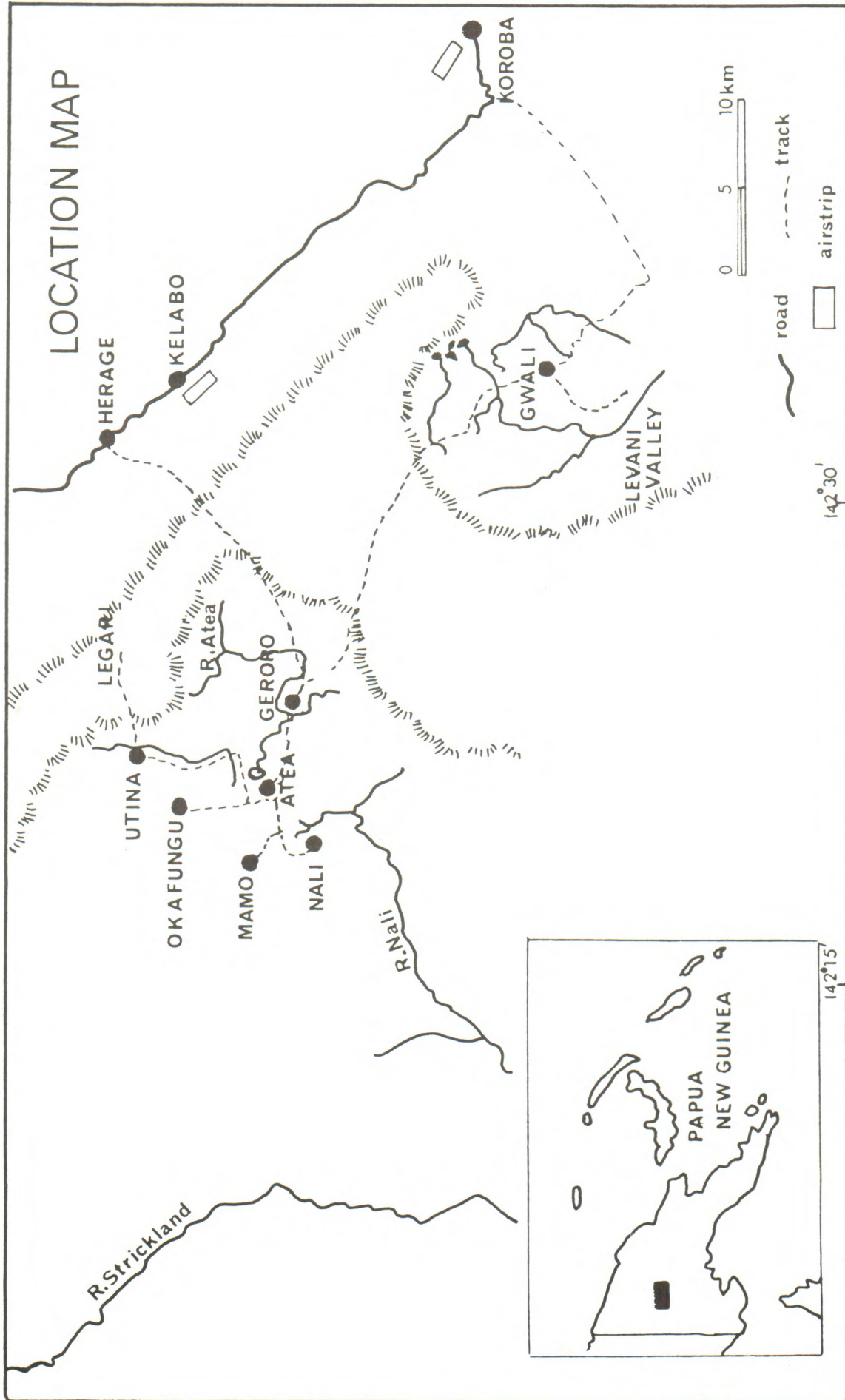
An advance party for the expedition worked in the area through June, organizing local assistance and permission from landowners. The Duna tribesmen and the advance party cut track and helipads, and built a base camp, creating ideal conditions for both cave exploration and research. They moved six tonnes of necessary equipment for the six week expedition.

The exploration of the Atea Kananda (Map 2) took place over five weeks. The Riverway was the main objective, the 1978 exploration starting at the Ship Canal with a swim of 300 metres to three semi-permanent water traps which became known as the "Ducks". The Ducks closed with a rainfall of twelve millimetres (nine millimetres was the average daily rainfall for the exploration period). Beyond, the Riverway continues as impressive rapids and still canals to a sump, the Impeller. In total, one kilometre of swimming was required, with the same lengths of safety lines fixed through the deep sections of the Riverway. The Impeller was by-passed on a route through the Holocaust (a massive boulder choke) but the river soon sumped again after thundering down rapids in the Penstock, an awe inspiring chamber. An alternative route through the Holocaust led to a further two kilometres of cave and the deepest point in Winchester, a dry boulder floored chamber entered through a thirty metre pitch. For the final week of the expedition, the Riverway was completely closed by floodwaters.

Ugwapugwa is a thirty metre high, four metre wide meandering streamway which had been followed upstream for one and three tenths kilometres in 1976. This passage was beautiful and easy to negotiate, but soon changed to give a series of mud crawls, squeezes and wallows in the young vadose trench at the base of a thirty metre high passage. A final inlet stream was reached three kilometres later and a few strides on lies Yaragaiya. This phreatic maze contains gypsum in a great variety of forms and unusual black and red collages of calcite speleothems all blended to neutral colours by dust. Bat bones, a live tree frog and a strong draught indicated another entrance, but limited hours spent searching for this did not reveal it. There are still leads in this section to be explored but since a fast trip to this area takes fifteen hours, other areas seemed more promising. The highest point in Atea Kananda was reached by an aid climb in an inlet passage in Yaragaiya.

Much of the energy of the expedition was spent in trying to find a by-pass to the hazardous Ship Canal, so as to re-enter the Riverway closer to the Atea resurgence at the Nali. A way on was found from the Beeline, a high level passage near the entrance. This involved a climb into the higher phreatic passage called Penny Lane which developed into the usual maze. A way through led to Ooze Cruise, a streamway parallel to the Ship Canal though much smaller than it. The systematic exploration of the intricate pattern of tributary passages produced

(Cont. on page 6)



ATEA '78 (Cont. from page 6)

three high level series, Strawberry Fields, New World and Primrose Hill. New World was one of the better decorated parts of the cave and pleasant because of its spacious passages, while Primrose Hill was yet another phreatic maze, different, yet tedious and difficult to explore and survey. Strawberry Fields had little to recommend it except it led to the Austral Series.

Exploration in the Austral was the least stimulating of any part of the Atea Kananda. To push any of the leads there, involved a flounder down Ooze Cruise and encounters with the glutinous mud of Yukabo and then the Imperial Mud Standard. In these passages it was not difficult to achieve the daily quota of one kilometre of explored and surveyed passage. Somewhere right at the end of the Austral lies another entrance, its indicator being a strong draught which changes direction in the late afternoon. It would have been helpful here to have had air tracers as part of the expedition equipment.

People began to concentrate on the outlying areas of Mamo, Utina, Legari and Okafungu as enthusiasm for pushing the wet muddy further reaches of Atea Kananda waned. The prospects for the cave are such that, if given the time, it could become a much longer system. The location of the entrances in the Austral and Yaragaiya would greatly assist the exploration. There is still a glimmer of hope that at some stage, another breakthrough to the Riverway could be made and further depth achieved.

A great deal of surface exploration was done in the Atea catchment in the hope that higher entrances into the far reaches of the cave might be found.

In 1976 it was discovered that the Atea River sank one kilometre upstream of the Atea Kananda, rising below at a dry gorge from a series of outflow caves before plunging down a series of spectacular waterfalls into the Atea Kananda doline. Several of these immature outflow caves were explored and over a kilometre of passage found. The doline walls were examined and one cave of just under a kilometre in length was found. On the ridges above the doline, and in the dry valley between it and the Atea resurgence at the Nali, there were a number of insignificant shafts and caves examined.

Location of the Utina sink was another of the major surface objectives of ATEA '78. This took considerably more time than anticipated as it sank six kilometres up its now dry valley at 2700 to 2800 metres altitude. The shafted sink unfortunately was blocked with boulders and rubble. A test with Rhodamine gave a positive result at the Nali.

A great deal of effort was concentrated at the Utina area as the survey showed that the end of Yaragaiya was located close to the right angle bend of the Utina. No connection with the main cave could be located despite the tantalising sound of streams not far underground, no extensive caves were found in the Utina Valley. Prospecting in the rainforest is difficult and looking for an alternative entrance to the Atea Kananda is almost impossible. Location would be easier from below.

There is a small possibility that the caves of Okafungu (Horatio of 1973) would connect with the Atea Kananda and with this in mind, Uli Guria was revisited and all the question marks of 1973 cleared up. Several other deep shafts were found but at the end of the expedition the best had to be left because of flooding— a 200 + metre deep pothole and still going.

The Nali was another objective although the prospect of going up a deep wet cave is daunting. However the Atea resurgence is impenetrable, with water gushing from a pile of boulders at the base of a cliff. A number of caves were looked at in the Nali Gorge but these were all small. The only interesting one was a flood overflow cave inside which the stream feeding the stream below dropped from a small hole in the roof. It would, however, be an extremely dangerous climb to enter this and at the time, the cave was not considered to be worth the effort, as it probably drained Mamo.

The exploration of Mamo itself was left until last in an effort to concentrate resources in one drainage area, so that the scientific programme and exploration would be coherent. Mamo had been visited in 1973 and 1976 but it was not until 1978 that a significant breakthrough was achieved, to give the most beautiful and interesting cave yet found on the Muller Plateau. With over eight kilometres of passage, it was a rewarding cave to explore, containing large dry passages, many spelothems and one large chamber half a million cubic metres in volume. Many passages, including the main one downstream, remain to be explored. The hazards of caving in the tropics were graphically illustrated during the exploration of this cave, when a party of three narrowly escaped from a flash flood and were forced to sit it out on a ledge for the night. On the following day two other enthusiasts, in an effort to increase the length of the cave in the waning days of the expedition, had to sit out another flood.

In a single day's surface exploration on Mamo, several entrances were found, with large horizontal

(Cont. on page 11)

CAVE CONVICT IS COMING !

The thirteenth bi-ennial conference of the ASF will be hosted by the VSA and held in Melbourne. The conference will run from Saturday 27 th. December, 1980 to Wednesday 31 st. December, 1980, with field trips following in early January, 1981. Lectures and seminars will be held at Pharmacy College and accommodation will be at International House. Both are in Parkville and close to each other.

It is the intention of the Cave Convict committee to provide the best conference yet held, and, to help us in this task, YOUR help is required. If you have any suggestions that you think will improve the conference, please send a note to the address below, and these suggestions will be given full consideration.

Place the dates in your diary NOW, and I look forward to seeing you at Cave Convict 1980.

Yours sincerely,

Philip Mackey.

Please address all correspondence to : Cave Convict 1980,

P.O. Box 5425 CC,

G.P.O. Melbourne, Victoria, 3001.

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BROCHURE ON MT. ETNA CAVES RELEASED!

The fight to save the Mt. Etna caves and bat populations in central Queensland has taken a step forward with the release of a glossy "soft sell" brochure designed for release to the general public. Its release comes shortly after a major breakthrough in the issue, when the Queensland National Trust listed the caves as essential to the National Estate. The Mt. Etna area is one of the first natural areas to be listed by the Trust. Copies of the brochure are available from University of Queensland Speleological Society.

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PADDY PALLIN FOUNDATION 1980 GRANTS.

Applications for 1980 will close 29 th. February, 1980. The amount available will be announced towards the end of 1979. Any enquiries should be forwarded to :-

R.B. Pallin,

PADDY PALLIN FOUNDATION,

c/- 69 Liverpool Street,

Sydney, N.S.W., 2000. Phone : (02) 262 685.

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ASF COMMITTEE MEETING, 1980.

Have you, as society delegate or ASF Committee member, registered your intentions as regarding the ASF Committee meeting at Buchan, on the Australia Day long weekend in 1980 ? If not, shame, shame, shame! VSA is frantic. I believe that two replies have been given from interstate. They (VSA) need to know if you are or are not coming, so they can organize accommodation at Buchan. Also needed to know is if you are bringing extra people. So DO SOMETHING ! For example, write or ring Lloyd Mill.

Lloyd Mill,

19 Regent Street,

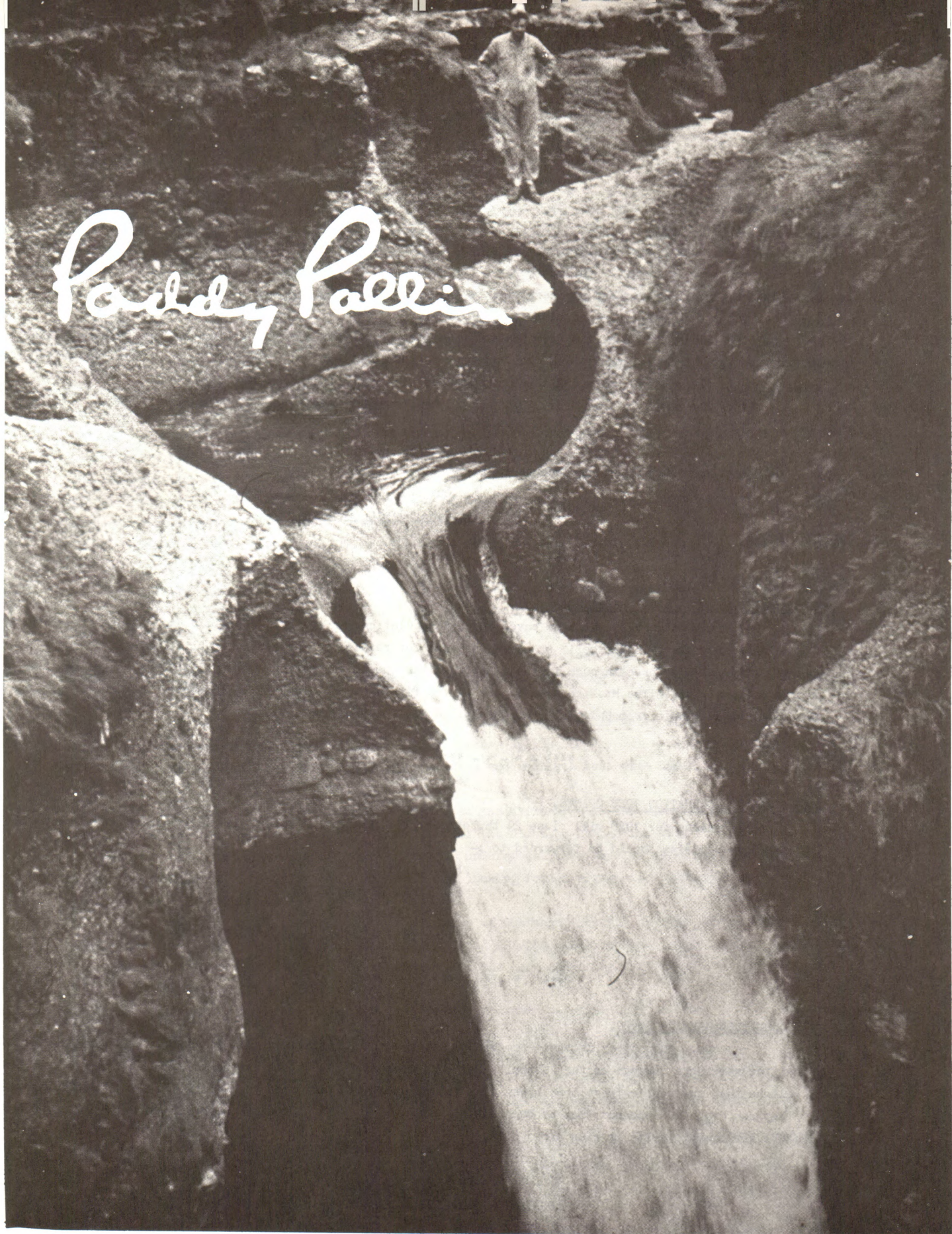
Ascot Vale, Victoria, 3032. Phone : (03) 370 6797.

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WORLD WILDERNESS CONFERENCE, 1980.

The second World Wilderness Conference will be held on 9 th. to 13 th. June, 1980, in Cairns, North Queensland. Further details can be forwarded : Write to: World Wilderness Conference, P.O. Box 823, Cairns, Q., 4870.

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John Dunkley contemplating the Sink of Harpan River Cave, Nepal — Photo by Andrew Pavey

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ATEA' 78 (Cont.)

passages often connecting adjacent dolines, and pitches dropping down in a number of places to unexplored depths. One large doline collected the drainage from four streams and was about eighty metres deep. With passage visible at several levels, it looked great, however none of these promising holes were visited again.

Two other areas were visited by ATEA'78: Legari, a mountain which dominates the north-west of the Atea Catchment. It rises to a height of 300 metres plus, and here several impressive shafts were found. Uli Mindi was descended to eighty metres, but lack of rope prevented further exploration. The entrance pitch is at least 160 metres. Legari was abandoned owing to lack of time and manpower.

The legendary Levani Valley produced several horizontal stream sinks some with considerable lengths of passage. Various members of the expedition feel that it has good potential for cavern development. A full report of the Levani exploration will appear in the Niugini Caver.

The scientific programme consisted of two major sections: earth sciences, including investigations of the geology, geomorphology, hydrology and geochemistry of the expedition area, and biological sciences, including flora and fauna surveys both on the surface and underground.

To ensure the success of the 1978 scientific programme, a scientific committee was formed to assess and coordinate individual projects. The members of the committee were experienced in the problems of carrying out research projects on caving expeditions, and of field work in Papua New Guinea. The committee was: Professor J.M. Jennings of Australian National University, Professor P.W. Williams of Auckland University and Dr. G.C. Cox and Dr. J.M. James of University of Sydney.

Surface geological work carried out by the expedition and the extensive underground observations by the cavers will enable the production of a revised geological map of a wide area of the Muller Plateau. In the past many of the interbedded calcareous siltstones, which under tropical weather conditions, weather like limestones, had been identified as such. The karst features in the area are varied and types not expected at that altitude were encountered.

The meteorological measurements and river staging results provide a short record of weather on the Muller. They were most valuable as an aid to the exploration of the Riverway in the Atea Kananda. The stage measurements allowed a prediction of the river level when the low section of the Riverway would become impassable, saving a long swim to prove this. By the end of the expedition, it was possible to predict how fast the low section would flood after rain and how long it would remain flooded.

Water traces, using the dyes Leucophor NBS and Rhodamine defined in part the underground drainage. Some of the water in the Nali Gorge flows underground through a vertical range of 1500 metres. The flow rate of the Atea River at the doline varied between $2-20 \text{ m}^3 \text{ s}^{-1}$. It is clear from the hydrological and water chemical studies that the Atea River in this geological situation has a complex series of underground courses with multiple division and rejoining of its waters. When a course of the river is blocked, the water rapidly carves a new underground route.

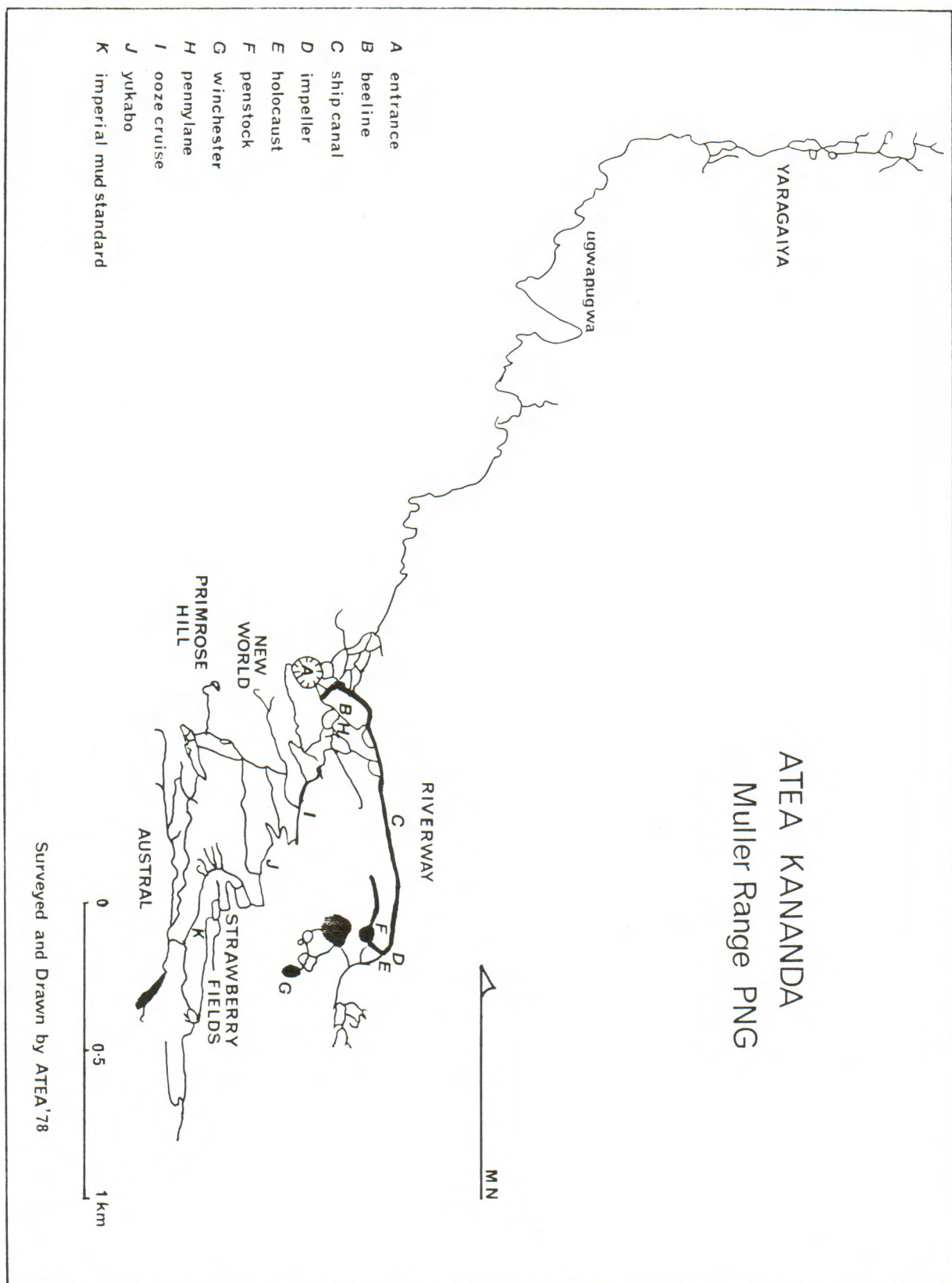
The study of the speleogenesis in the Atea Kananda is complicated by three distinct and minor levels of development in it. A similar phenomenon was encountered in Selminum Tem, a cave about 100 kilometres to the west. The 1975 British Speleological Expedition which explored the cave, suggested that the cave had survived three stages of orogenic uplift. It is believed that the levels in the Atea Kananda can be explained by periods of rapid downcutting through limestone interspersed with periods of slower erosion through the interbedded calcareous siltstones. The levels in the cave are the result of the local stratigraphy.

Speleothems and minerals were collected from the cave for analysis in Australia. There is now a collection from the 1973, 1976 and 1978 expeditions and it is intended to use them for paleoclimatic work using stable oxygen isotopes, and for dating with radiocarbon or by the uranium thorium method. Sediments were collected for a study of the mechanisms of sediment emplacement in tropical caves. These will be used to study the role of abrasion in cave development and in the paleoclimatic work.

The biological studies are among the first high altitude tropical caves. A broadly based collecting and ecological study was carried out. A limited collection of surface flora and fauna was proposed and originally, it had been intended to collect only those species associated or potentially associated with the caves. A much larger collection was made; thirteen species of small mammal, and thirty birds including two Birds of Paradise were identified. Snakes and lizards and many amphibians were found. Thousands of arthropods were collected.

The material collected by the biologists has been distributed to specialists throughout the Australasian area for classification. Already it is rumoured that as many as ninety-five percent of the species collected have

(Cont. on page 13)



ATEA'78 (Cont.)

not yet been described and there are many novel troglobitic species.

Very little scientific work was carried out on Mamo and in the other field areas. In Hadia Nduhongiri, however the first evidence of human occupation of the Mamo Plateau was found, and the site has been recorded by the University of PNG. Preliminary investigations of the geology, geomorphology, minerals and biology indicate that the cave on Mamo is as interesting as Atea Kananda, but quite different.

Atea '78 was a combined exploratory and scientific expedition. There are two major reasons for combining the two. One was financial: without the support of the caving members of the expedition, and sponsorship from people interested in cave exploration, there would have been no expedition and no scientific programme. The other is manpower: None of the scientific work could have been done without the thousands of hours underground and surface exploration and surveying, and the lengthy underground collection trips.

In conclusion, Atea '78 found and explored some forty-five kilometres of underground passage: the 300 metre deep Atea Kananda at 30.5 kilometres is currently the longest cave in the Southern Hemisphere. On the Muller Plateau there is a 30.5 kilometre cave and an 8.5 kilometre cave, a 160 metre shaft and a 200 metre vertical cave left incompletely explored. A thousand hectares of the Muller Plateau were examined in detail, and a far greater area partially explored. The planned scientific programme was achieved with few omissions and many additions. As the Atea report is prepared and the scientific results collated, it is agreed that ATEA'78 was a success.

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THREATENED BAT MATERNITY CAVES

Glenn Pure

From a caving point of view, the conservation of bat populations is a problem which often arises because disturbance of bats, especially torpid wintering bats, can have a detrimental or even lethal effect on these creatures. Hence, cavers exercise care when visiting caves which are a habitat for bats.

However, many of our administrators and politicians do not have such respect for bats, perhaps partly because of the poor public image bats have suffered, and partly out of ignorance. The pattern of behaviour of bats, especially bent-winged bats, is characterised by dependence on a single 'maternity' cave, where the bats give birth to, and rear their young. In this article, I will deal with Government sponsored threats to such caves in Queensland and Northern New South Wales.

MT. ETNA

Situated twenty-two kilometres north of Rockhampton in Central Queensland, Limestone mining began in 1967 for cement manufacture by Central Queensland Cement Limited, one of the three companies forming the Queensland Cement monopoly. The cavernous limestone on Mt. Etna is completely covered by leases. However, some caves to the east have been included in a national park.

Mining is occurring today and is the subject of a major battle between speleologists/conservationists and the Queensland Government.

Bat Cleft cave, on Mt. Etna itself, is the sole maternity site for a population of 250,000 little bent-winged bats (Miniopterus australis) (Hamilton-Smith and Champion, 1975). The population is estimated to eat nearly one tonne of insects each evening during the summer months. To my knowledge, this is the largest cave bat population in Australia and certainly the largest for M. australis.

The annual pattern of behaviour of bent-winged bats has been clearly established and published in a number of papers by Dwyer (1966, 1968, 1968, 1970), Dwyer and Harris (1972), Dwyer and Hamilton-Smith (1965), and Hamilton-Smith (1972). Most of this work was carried out on the eastern bent-winged bat (M. scheibersii) although it is clear that M. australis behaves in a similar way. This work shows the dependence of bent-winged bats on a single or small number of maternity caves of special structure necessary for the rearing of newly born bats. The evidence suggests that these maternity sites would be difficult, if not impossible to replace. This may be particularly true in the case of Mt. Etna because of the exceptional structure of the Cleft, the large population dependent on it, the lack of cave of similar structure in the region, as well as the gregariousness of this species in the use of Bat Cleft.

(Cont. on page 14)

THREATENED BAT MATERNITY CAVES IN QUEENSLAND AND NORTHERN NEW SOUTH WALES (Cont.)

However, the Queensland Minister for Mines (Mr.R.Camm)- the man who could allay the threat to Mt.Etna- has claimed on numerous occasions that the bat is adaptable and could breed elsewhere on the basis of reports he has received confidentially, and which 'therefore cannot be released'. Despite a large media campaign, as well as growing activity generally in recent months by conservation concerns, the last media statement to be issued by Mr.Camm was dated October 31, 1976! The cement company has been even less willing to discuss the matter- they rarely reply to correspondence and have probably fewer than half a dozen media statements to their name in the last twelve years.

A population of rare ghost bats (Macroderma gigas) is also known to use caves on Mt.Etna, at least as habitat caves. Caves which are a known maternity site for this bat are included in a national park adjacent to Mt.Etna. This bat was declared an endangered species by the International Union for the Conservation of Nature in 1978, and the Mt.Etna-Limestone Ridge population of this bat is presently the largest known in the world. The bat is currently being studied by Mr.J.Toop at the Capricornia Institute of Advanced Education, Rockhampton.

Mt.Etna's caves are also a habitat for populations of Rhinolophus megaphyllus, Taphozous georgianus, and Miniopterus scheibersii, although less is known about the size and behaviour of these populations.

The present attitude of the Queensland Government is that a decision has been made by Cabinet that mining will be allowed to continue on Mt.Etna and no change in this decision will be contemplated at the present time.

FAINING RIVER

Situated near Townsville in North Queensland. A mining lease is believed to cover the maternity site for a population of M.australis. I do not have an accurate estimate of the size of the population, but it is in the order of several tens of thousands. An immediate threat of mining is believed to have been allayed as a result of discussions with the lessee, North Australian Cement Limited.

RIVERTON

Situated south of Stanthorpe, one kilometre inside the Queensland border. Riverton Cave, the largest of a handful of caves occurring in the limestone outcrop, houses a maternity colony of 15,000 to 20,000 eastern bent-winged bats. The limestone outcrop is covered by a mining lease owned by Kallangur Lime Ltd. Riverton cave also supports a maternity colony of several hundred eastern horseshoe bats (Rhinolophus megaphyllus). The limestone outcrop is unlikely to be mined in the near future because of the economic considerations owing to the distance from present markets.

KEMPSEY

The caves are situated several kilometres west of Kempsey, 400 kilometres north of Sydney, on the coast. Exploration licences have been applied for, or granted to CRA Exploration Ltd. The licences are in a belt which follows the limestone outcrop. CRA have advised that they are interested in geological formations which occur beneath the limestone. The E.L. applications state that they are searching for Group 1 metals (these include gold, copper, lead etc.). They have given an undertaking that their exploration programme will not cause any damage to the caves, nor do they intend denying access to the caves at this moment. However, the likelihood, nature and effects of any mining which may occur is not known at this juncture. Willi Willi cave which is a maternity site for 25,000 M.scheibersii, is included in an area covered by one of the exploration licences.

CONCLUDING REMARKS

Mt.Etna is the issue which is receiving maximum attention, because of the immediate nature of the threat, as well as the large number of caves and bats threatened by the mining. Little has been done on the other issues, although the Kempsey issue will be receiving some attention by the time this article goes to press. Also a submission has been sent to the Queensland National Parks and Wildlife and the mining company concerning Riverton cave.

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DOWN UNDER ALL OVER**news from around the societies.**

- BMSC** : Christopher Olsson reports that the club has been quite busy this year. To begin the year, seven members visited Tasmania, paying particular attention to the Mole Creek area. As proof of having visited this spectacular caving area, they took hundreds of slides which they insisted on showing the rest of the club. The main areas visited this year have been Jenolan, Cliefden, Bungonia, Little Wombeyan Creek, Canomodine and Walli. Several members attended the Search and Rescue weekend at Bungonia and Karl Bilger is well on his way with the survey of the Taplow Maze. On the social side the club has also been active. Bowling nights, weekend car trial (one to follow soon), several parties and a wedding. This wedding was thoughtfully organized by our Social Secretary Carol and our Safety Officer Brian. In association with Brian and Carol's wedding, a Farewell caving weekend was held at Jenolan for Brian. During the year, the club held a photo competition with the standard speleo categories. Ted Matthews won the competition with a superb entrance shot taken at Caveside, Tasmania.
- CSS** : CSS has concentrated on one theme in the last six months. This has been a visitors Book Programme, which involves placing visitors books in major caves. It is hoped to prevent graffiti in these caves and to ascertain the usage of the caves. Visitors books have been placed in caves at Wee Jasper, Wyanbene, Mt. Fairy, Yagby, Marble Arch, Chetmore, Duea, Cottr and London Bridge. Already some interesting statistics have emerged, e.g. over 600 cave visits at Wee Jasper in two winter months. CSS also participated in a Canberra club's visit to the new Duea Cave, and several members have a considerable input into the Duea-Wombillig Park submission being compiled by the Canberra clubs.
- ISS** : Dave Dicker reports that the trip to the Kimberley district was a great success. It was attended by members of ISS, SSS and OSS. The objectives were (a) Survey Cave Springs—this was achieved with a vengeance, some four to five kilometres of passage being mapped. The survey was done by Greg Middleton, Ross Ellis, Robert Diggs, Gordon Sykes, Bill Wilton and John Redpath, although everyone had a hand to some extent. We eventually ran out of time in the area and didn't finish the survey. Stream Gauges were installed in the cave. Several new systems were surveyed in the area, and there is still much more work to be done. (b) Napier Range: the elusive Barnetts Cave was relocated and surveyed. This is a significant cave as it is very large in volume, and contains some good examples of tree roots. There are still many good prospects in the Napier Range, and it has again been driven home to us that one square kilometre of Kimberley limestone would take years to fully explore. The party was eventually washed out of the Napier Range by unseasonable rain which underlined one of the difficulties of an expedition to this area. The Fitzroy River rose eight metres overnight while the party was camped on its banks. Other than the Kimberley trip, ISS seems to have fallen into a depression. All the weekend trips for the last three months have been poorly attended, and many permit trips have been cancelled. ISS have however, been working with CSS towards making proposals to NP & WS in regard to the management of Wyanbene/Bendethera/Cleitmore area. A submission is being prepared, and will be discussed with the NP&WS at a meeting in early September. It is to be hoped that it won't be a case of cavers supplying all the information and being "gated out" anyway. Two ISS Newsletters are in preparation— a Bendethera issue and a Kimberley II issue. The first should be out sometime this year, and the second a short time later. If any group is interested in mounting a trip to the Kimberleys, ISS has had two very successful expeditions to the area, and we would be glad to supply information on the area and preparations for a trip.
- MUSIG** : Cathie Rothery reports that MUSIG is very busy at the moment with several projects underway. They are currently surveying Naked Lady Chamber (Jenolan), still preserving with B 68 at Bungonia and they have just finished organising speleo-sports with the N.S.W. Liason Council. Thanks to all those who came along and helped to make it a huge success. Work at Narrigal is progressing very slowly.
- NUCC** : The first half of 1979 has seen NUCC maintaining a good level of activity. Several SRT trips to Bungonia and Deep Hole have been held. The surveying of North Deep Creek, Yagby, has now been completed, but still needs to be drawn up. NUCC participated in a joint Canberra clubs' trip to the relatively new Duea Cave,

NUCC (Cont.) : The NUCC participants managed to double the known length of cave by pushing a squeeze. Wyabene has been visited several times and the caves there have now been tagged WY 1 to WY 9. Wee Jasper and Narrengullen have also been visited, a scaling pole being used at Narrengullen. NUCC members also attended the mini-conference, and have had an input into the Dues-Wombilliga Park Submission.

NUCC : The club has been rather quiet during the last few months, but a couple of things of note have occurred. The first, and probably the most important, was the combined state-wide search and rescue exercise at Mole Creek, held over the last weekend in May. Representatives from almost every interested organization in Tasmania were there, with a total of sixty-three people. Up to seven different "mini-exercises" were going on at any one time, with three overall sessions being held at the weekend. Various types of stretchers were tested in varying conditions, ranging from waist-deep water to complex rockpiles. At the end of the weekend, a de-briefing yielded many ideas for equipment modification, caving techniques, organization and so on, all of which were noted and will be tried on future exercises. All in all, an extremely successful weekend with many new friends being made and much being learnt. The second happening of importance is the commencement of a complete systematic survey of Exit Cave. For far too long now, this cave has been visited regularly without any comprehensive survey having been carried out. If any visiting cavers wish to assist in this massive, but worthwhile project, contact Stuart Nicholas or Bruce McIntosh for further details.

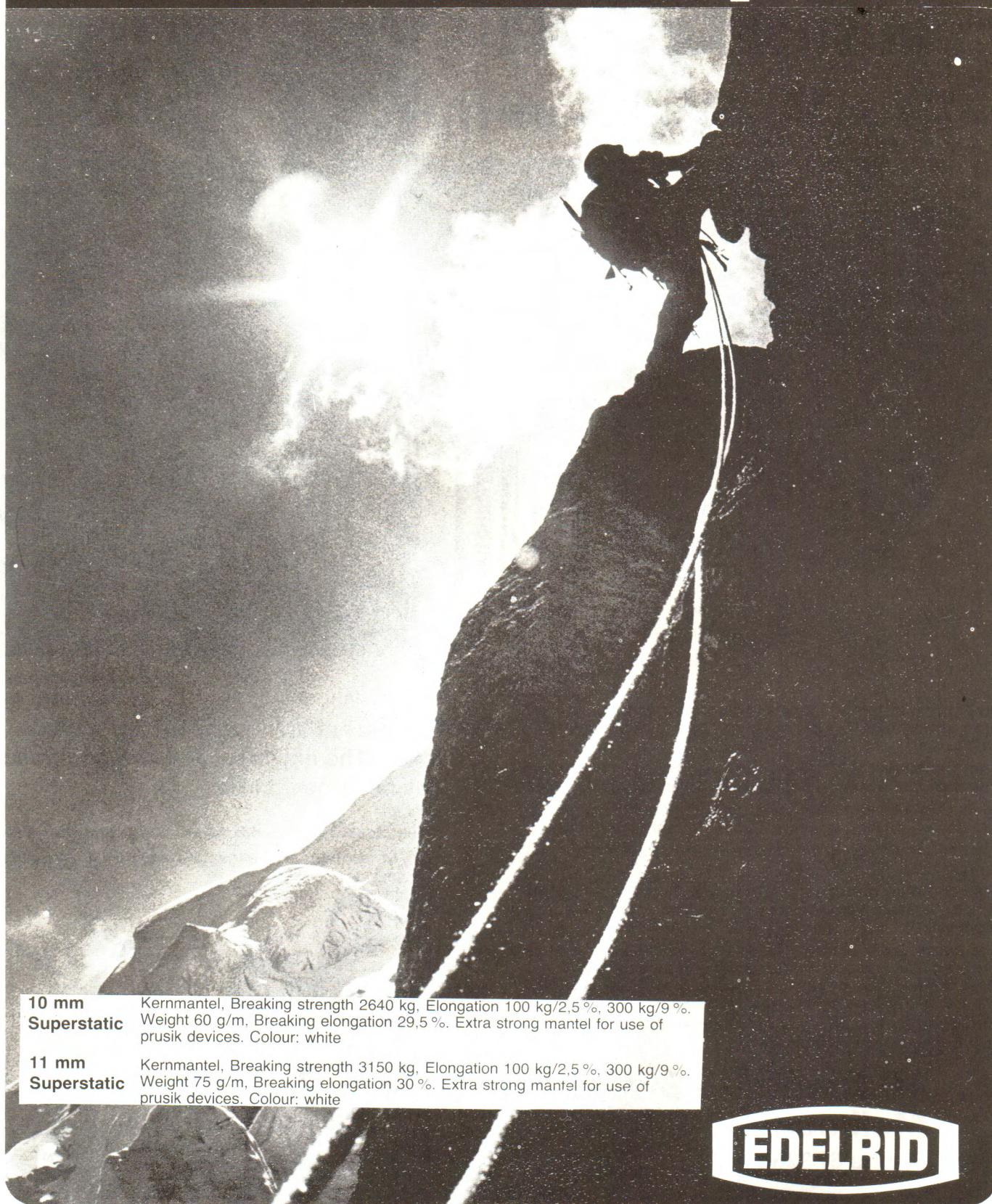
WASG : This is a summary of WASG's activities from April '79 to September '79. Over the Easter period, two main trips were held. One a mapping trip to Weelawadji Cave (E 24) saw 1002.7 metres added bringing the total to date to 2020 metres. The other trip to the South-West included a photographic trip into Easter Cave. Following this trip, the survey swung into gear again. A number of trips have seen the CEGSA extension completed, two separate new finds in the Crystal Labyrinth both still going and the latest trip added 430 metres to the length of the main drag. The most recent total for the length of Easter Cave is 5018 metres, but there's still more to come. In other areas, Nambung has seen a number of trips on which new caves have been found. A number of these have been named. How does Schizoid Inflow sound or maybe Mantrap Hole. Others include Night are Inflow and Abrasion Inflow-sounds like a GREAT ? area. Brown Lake Cave is another named cave in this new area. At the moment, surface traverses are being made as the vegetation is growing very fast (following a fire) and unless positioned, these new caves could be lost. An underground survey has also been commenced of Abrasion Inflow. Peter Bell recently spent his holidays in South Australia, and was so impressed with the caves that he is returning to live for a while. Good luck, Peter. Ros and Ray Hart have just returned from a trip to the Northern Regions of W.A. and were very impressed with the cave entrances that they saw at Cape Range. A new WASG sub-group may be in the offering as a number of the locals have done a fair bit of caving. The caves at Coorow also received a trip during this period.

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The glow of Eilonwy's bauble showed they had come to the edge of an enormous cavern. It stretched before them like a forest after an ice storm. Columns of stone rose like trunks of trees and arched to the roof where stone icicles sprang like hawthorne blossoms, and glittered in the bauble's rays. Threads of scarlet and vivid green twisted through luminous shafts of rock. White tendrils of crystal curled along jagged walls gleaming with rivulets of water. Still other chambers lay beyond this one, and Taran caught sight of wide pools, flat and glistening as mirrors. Some gave a dull greenish glow, others a pale blue.

"The Castle of Llyr" -Lloyd Alexander.

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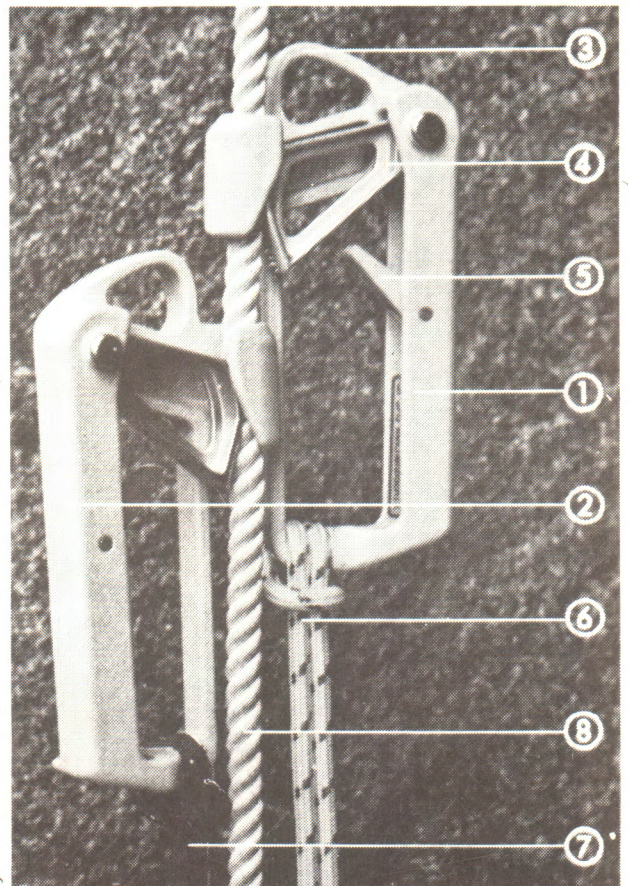
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