

March 1976

Niugini Caver, Volume 4, No. 1, March 1976

R. Michael Bourke

Follow this and additional works at: https://digitalcommons.usf.edu/kip_articles

Recommended Citation

Bourke, R. Michael, "Niugini Caver, Volume 4, No. 1, March 1976" (1976). *KIP Articles*. 3715.
https://digitalcommons.usf.edu/kip_articles/3715

This Article is brought to you for free and open access by the KIP Research Publications at Digital Commons @ University of South Florida. It has been accepted for inclusion in KIP Articles by an authorized administrator of Digital Commons @ University of South Florida. For more information, please contact digitalcommons@usf.edu.



NEWSLETTER OF THE PAPUA NEW GUINEA CAVE EXPLORATION GROUP
Volume 4 Number 1 **March, 1976**



Niugini Caver is the newsletter of the Papua New Guinea Cave Exploration Group, an informal association of persons engaged in speleology in P.N.G.

Volume 4 Number 1 March, 1976. Quarterly

Price 50 toea per issue. K2.00 or \$A2.00 per annum.

Editor R. Michael Bourke, D.P.I., Keravat,
East New Britain, Papua New Guinea.

Typist Jean Bourke

Production of Last Number Michael Bourke, Japeth Morris, Stanley Bongbong, Endi Pais and Steve Freeman.

| <u>Contents</u> | <u>Page</u> |
|---|-------------|
| Papua New Guinea Karst Types. 4. Arête and Pinnacle Karst. | |
| J. N. Jennings | 2 |
| The Search for the Deepest Hole in the World Goes On ... and On. | |
| Kevan A. Wilde | 4 |
| Notes on the Cave Biology of the Hindenburg Mountains. P. Chapman | 14 |
| The Caving Scene | 15 |
| The 1975-76 PNGCEG Highland Meet. R. Michael Bourke | 17 |
| Old Copies of Niugini Caver | 19 |
| Darua Muru, Chimbu Province: 194 m Deep and Still Going. | |
| R. Michael Bourke | 20 |
| Angunga Sink, Chimbu Province. Kevan A. Wilde and Tony White | 23 |
| Mebikombogo Cave, Chimbu Province: The Survey. C. Yonge | 25 |
| Preliminary Notes from a Biospeleological Trip to New Ireland. | |
| P. Beron .. | 27 |
| A Solution Cave in Volcanolithic Arenite - Lihir Island. H. Gallasch .. | 31 |
| Corrections Niugini Caver 3(4) | 33 |
| Speleological Prospects in Smaller Islands of the Manus Province. | |
| G. Francis | 34 |
| A Trip to A Cave on the Snake River, Morobe Province. Frank Salt | 36 |
| Speleo Personality - Michael Bourke | 37 |
| The New Contributors | 39 |

* * *

Cover Photograph. A passage in Selminum Tem, the long cave on the Finim Tel Plateau west of Telefomin explored by members of the British Speleological Expedition to P.N.G. last year. The cave is over 20 km long and establishes a new southern hemisphere length record. Many of the passages in the cave were very large. The figure is Dainok, one of the expedition's carriers. (See article on page 4 on the expedition.)

Photo by D. Brook.

* * *

PAPUA NEW GUINEA KARST TYPES. 4. ARÊTE AND PINNACLE KARST

J. N. Jennings *

This is amongst the most striking of karst landscapes. Because of the difficulty of moving in it, little is known about it as yet. So far it has been described from certain mountain ranges between Porgera and Tari, including Mt. Kaijende, at elevations of 2600 to 1500 m in the cloud or moss forest zone (Jennings and Bik 1962; Williams 1969, 1971, 1972, 1973). Nearly vertical and practically bare walls of limestone, sometimes more than 100 m high, jump out of dense forest, mainly to form narrow arêtes or to break up into needle-like pinnacles. These sharp ridges chiefly run along the strike of the rocks and at right angles down the dip, forming joint-guided rectangular patterns. Along with forested, less sharp ridges, they surround forested closed depressions, together forming one kind of polygonal karst. Though the closed depressions may be simple cylinders, 70-100 m across and more than 100 m deep, they also include more complex forms in which several chasms and gullies join. Therefore Williams (1971) suggested that the name 'arête and pinnacle karst' should replace the original name 'arête and doline karst' given to it by Jennings and Bik (1962). The rock walls have very large semi-circular vertical drains, up to 2-3 m across, ribbing them and sometimes leading into shafts at the cliff foot.

All known occurrences of arête and pinnacle karst form strike belts within broader carbonate rock zones, suggesting that they depend for their formation on particularly favourable geological conditions. They certainly require thick-bedded, chemically pure and mechanically strong, but well jointed limestones for their development. Nevertheless it seems on present evidence that they are also tied to particular bioclimatic conditions. Jennings and Bik (1972) suggested that these cool, perpetually wet, yet richly vegetated high levels in the tropics may provide optimal circumstances for carbonate rock solution and karst evolution. The rocks in the instances known are Miocene in age and uplift of them probably set terrestrial attack in progress in the early Pliocene so no great span of geological time has been available for the creation of this most vigorous topography.

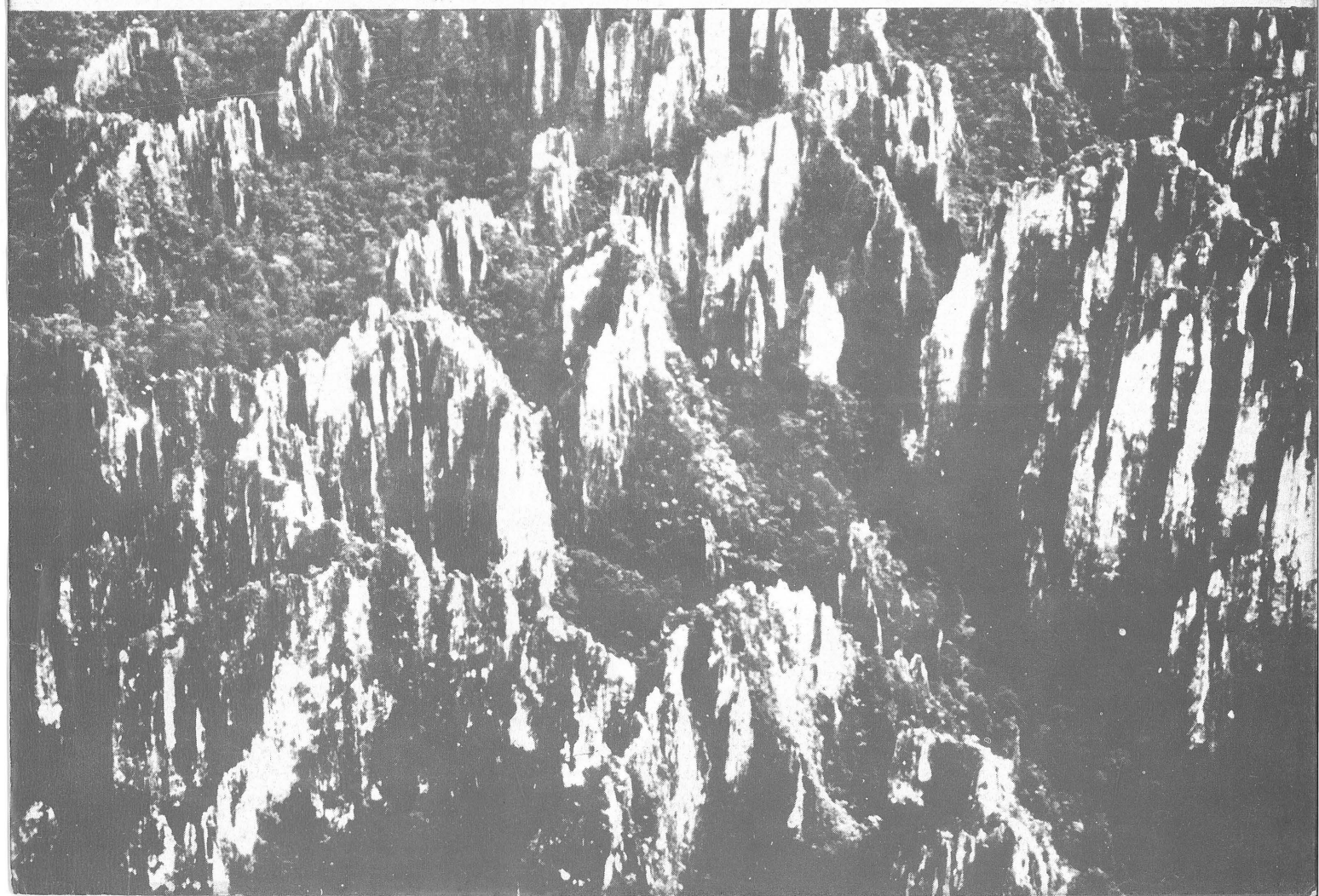
REFERENCES

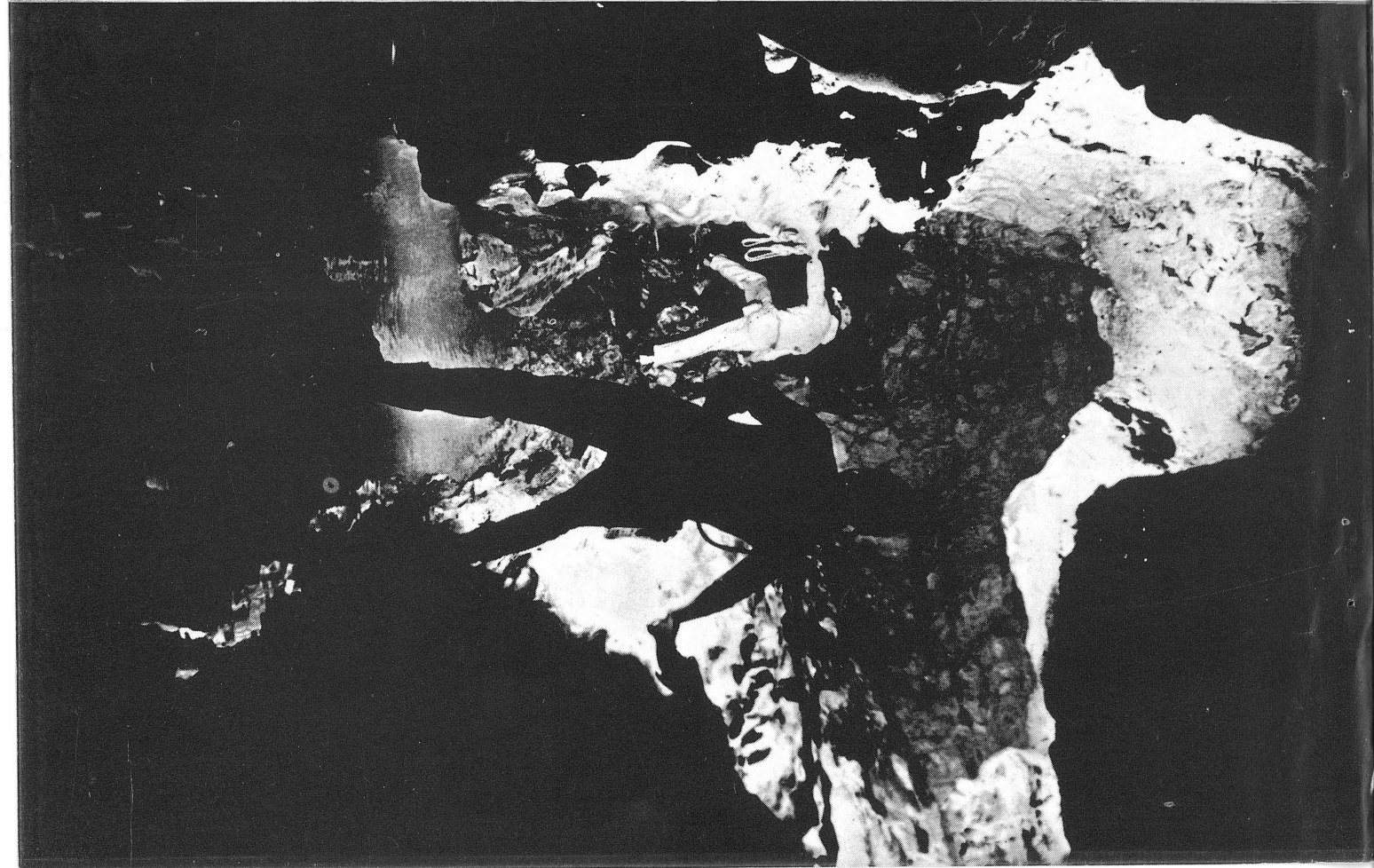
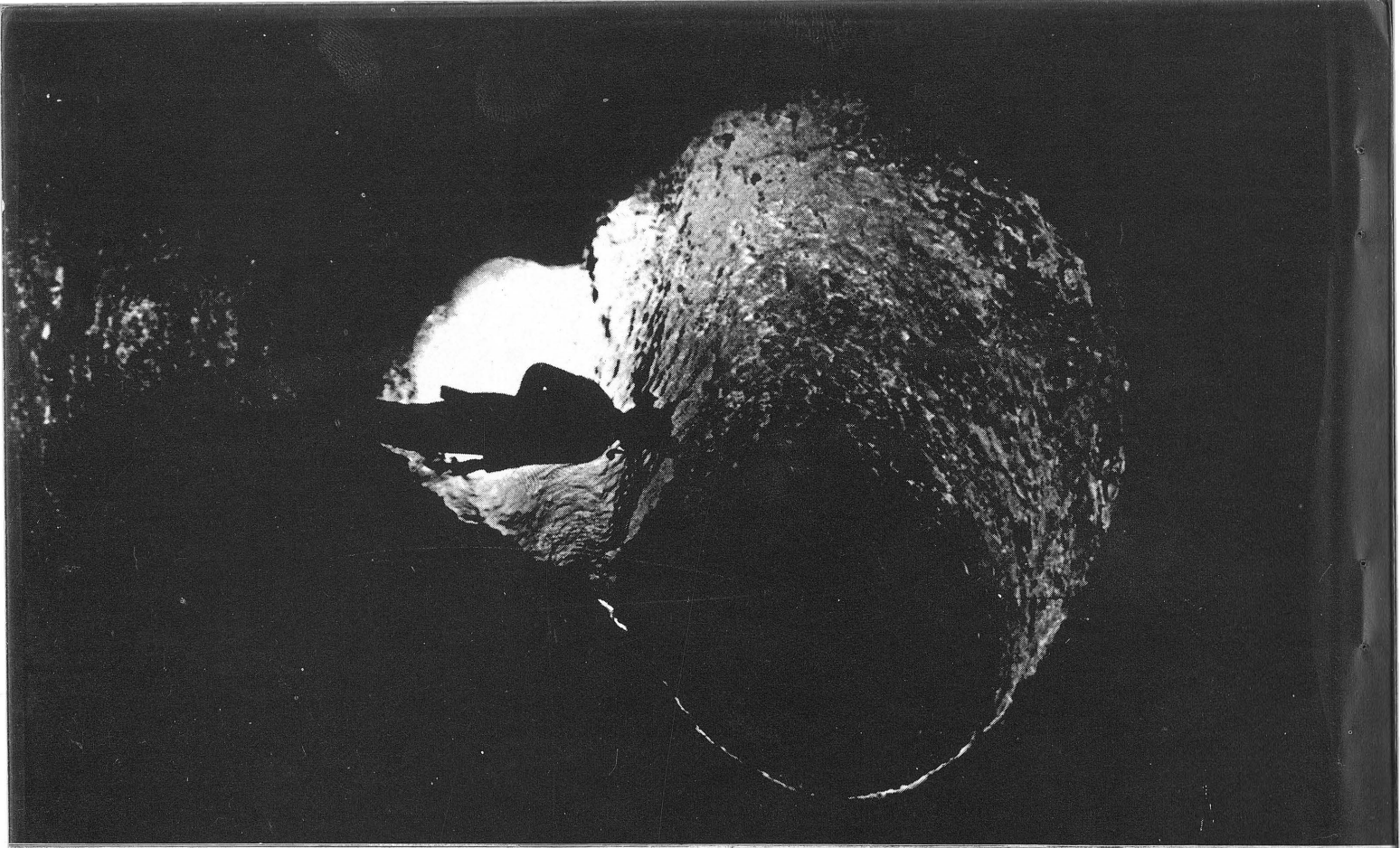
- Jennings, J. N. and Bik, M. J. (1962). Karst morphology in Australian New Guinea. Nature 194 (4833): 1036-1038.
- Williams, P. W. (1969). Cave and karst areas in east New Guinea. 5th Inst. Kongr. Speläologie Stuttgart 1969.5(1), M 31/1 - 331/13.
- Williams, P. W. (1971). Illustrating morphometric analyses of karst with examples from New Guinea. Z. Geomorph. 15: 40-61.
- Williams, P. W. (1972). Morphometric analysis of polygonal karst in New Guinea. Bull. Geol. Soc. Amer. 83: 761-796.
- Williams, P. W. (1973). Variations in karst landforms with altitude in New Guinea. Geogr. Zeit. Beih. 32: 25-33.

Photographs. The upper one shows a general view of arête and pinnacle karst on Mt. Kaijende looking NE. (Photo by J. N. Jennings). In the lower photo a closer view of part of the same area can be seen. (Photo by E. Löffler).

* Australian National University, P.O. Box 4, Canberra, A.C.T. 2600, Australia.

* * *





THE SEARCH FOR THE DEEPEST HOLE IN THE WORLD GOES ON ... AND ON

A Short and Informal Account of New Guinea '75 -
British Speleological Expedition to Papua New Guinea

Kevan A. Wilde *

After the 'recce' was completed (Wilde, 1975), I went down to Port Moresby to meet the expedition members and Howard remained in Telefomin. We raced around Moresby for three or four days sorting out various aspects of administration with government departments and set off for Telefomin on 21st July. After arriving there, we set up our main base in an administration house kindly loaned to us by the Assistant Provincial Commissioner. The gear was flown in, ten tonnes of it, by several DC3 charters, and during the first week we set about the mammoth task of sorting it all out.

We discussed the ins and outs of the trip and plans were made and remade. It was finally decided that we would field the entire group in the Finim Tel Plateau area for about two weeks. This was to serve as a P.N.G. orientation period and to toughen everyone up for the harder areas. Also, of course, to look at some of the features 'discovered' on the recce. (For maps and recce details see Wilde (1975)). It was decided that the Fault Controlled Valley (FCV), where we believed the deep caves were likely to be, should be left until everybody was fit and fully acclimatized.

We had already partly constructed a major base on the plateau; so an advance party consisting of Mike Farnworth, Jack Sheldon and myself set off over the Barhman Ranges to complete it. The remainder of the group followed a few days later. Before long we were all settled into a relatively comfortable situation and getting stuck into it, but none of the holes would go. The flood feature sumped, the shafts chopped off into chokes and the big holes such as La Buum Tem and 'Girthoil' made magnificent free hanging 90-120 m abseils into choked, jungle-covered doline floors. People were becoming more and more disheartened, and we began to think we had made our first major mistake.

A party of four, consisting of the original advance party and Dick Willis, set off for Fugulil De Bom. After three to four days of cutting we got to the

Left photograph. A passage in Finim Tem, an active stream cave that takes part of the Ok Finim. The cave is c. 1200 m long and ends in a sump. Dave Yeandle (diver) is the figure in the foreground and Paul Everett (linguist) is in the background. (Photo by Tony White).

Right photograph. A passage in Selminum Tem. The keyhole shape is a classical example of phreatic passage with later vadose invasion. The phreatic passage is rounded and is formed under the water table. Vadose passage, such as where the figure is standing, is characteristically higher than wide. It is formed by water with a free surface. (Photo by Chris Pugsley).

* P.O. Box 1055, Goroka, P.N.G.

summit area and set up our camp, at about 3000 m (plus) a.s.l., overlooking the plateau and main base. At such a high altitude it was cold and miserable (4 °C at night, 14 °C during the day). The ascent was hard, steep and slow, through thick sub-alpine scrub and tangled, stunted vegetation. A number of prominent and promising dolines were cut to and explored. A few caves were located, but none of any significance, the deepest being about -30 m at the most. It may be possible, however, to claim a southern hemisphere cave height record? The results were becoming more and more depressing.

In the meantime we had an airdrop (one of two on the plateau) which lifted everyone's spirits: a 95% recovery, but some very near misses nearly hit the camp and the spectators ... quite amusing.

Steve Crabtree (Crabby), the expedition geologist, and some others were taken to a large doline, west of 'Girthoil' and shown a cave high up in its side. The local guide told them that the name of the cave was Selminum Tém. It turned out to be an old, but quite active, horizontal cave system that did not appear to go. Disheartened they went down to the bottom of the doline for lunch. Whilst talking and eating, John Buchan, the expedition's doctor, noticed the leaves thrashing around near the doline wall. A quick investigation followed and Selminum Tém proper was 'discovered'. They were staggered by the massive, virgin, phreatic passage, often 30 m wide and 30 m high! Charged with enthusiasm, they raged through the cave; suddenly it would appear to close down, then equally as suddenly, it would open up again. On and on they went until they ran out of time. The news quickly spread that a major cave had been found.

Before long a large party set off to explore it, and a camp was established on a ledge, on the cliff face near the entrance of the upper system. Daily trips of ten hours became the norm, and gradually the cave took shape. The upper series was connected to the lower; phreatic mazes below the main passage were discovered and the system was carefully surveyed and explored. But every internal shaft, one after another, sumped and our hopes of a deep system were once more dashed to the ground.

On one of the photographic trips we accidentally discovered that we weren't the first humans to explore the cave when an engraving of a bird was found on a rock slab a short way in. Also a number of groups of engraved or scratched parallel lines, some other small paintings, a pair of possible faded human figures, chert flakes and remains of 'bomboms' were observed for something like 150 m into the cave. (A separate article will be published on art and possible archaeological sites.) Selminum Tém became more and more exciting. Mike Farnworth and Paul Everett were soon to find the fossilized remains of a large marine vertebrate which was located well into the system. The remains were later removed by Dr. Wells (University of Adelaide) for study, and eventually they will be installed in the national museum in Port Moresby.

Meanwhile, another river cave Wok Kaakil Uneibo Tém, was 'discovered' west of the base by John O'Donovan, and visions of a connection were formed. We did in fact get to within 60 m of joining the two systems, but an actual connection evaded us. The cave consisted of approximately 2 km of high rift, river passage and small, joint controlled, high level passages. The cave was nevertheless impressive although lacking in formation.

Filming, surveying and exploration were going on in earnest when 'Crabby' fell off a 6 m high slab of rock in Selminum Tém. A 10 hour rescue followed, the first major cave rescue in P.N.G., and he was taken out on to the camp on the ledge where he was treated by the doctor. Suffering from a fracture of the skull, lacerations and concussion, he remained on the ledge until fit enough to walk to Tifalmin and be flown out to Telefomin. A tragedy that kept him out of caving for the remainder of the expedition. But he was able to do a magnificent job of administration at the main base. In the meantime, more shaft bashing and exploration of the surface revealed no more major caves. Exploration of Selminum Tém continued daily with discoveries of 300 m (plus) of passage being common. As Independence was approaching, we decided that most of the main party would return to Telefomin; we had already spent more time than originally intended on the Finim Tel, but it was worth it. A small keen party stayed behind with Dave Brook, the leader, to carry on the good work with Selminum Tém and Wok Kaakil Uneibo Tém.

Chas Yonge, Chris Pugsley and I set off for Agim Tém which we intended to partly explore on the way back to Telefomin. It proved to be an excellent cave with a large, impressive chamber and passage developing down-dip in a number of fairly small pitches. The stream was purported locally to resurge some 600 m below as the Ok Agim, but after -150 m we were stopped by a sump. Down-dip too! We set off back to Telefomin very disappointed, but pleased with the trip, having found the deepest cave so far.

We all arrived back at Telefomin in time for the Independence Day celebrations, and a magnificent display it was too. Representatives from all the 'min' groups in full traditional dress performed exciting and colourful dances. The day's celebrations were climaxed with a pig kill, 'mumu', and feasting, which the expedition members, after a diet of knitted soya protein, were more than willing to participate in. Finally the Australian flag was lowered for the last time.

As planned, we decided to split up and try other areas which we considered had better depth potential. However, Sid Perou, the expedition cameraman and film director, decided that his filming wasn't going too well and that he was behind with his sequences. Frank Binney, the one American on the trip, had resigned from his position as assistant cameraman, and also decided to leave the expedition. Accordingly, we decided to head back to the Finim Tel to catch up. A couple of weeks filming brought Sid up to date and we set off back to Telefomin. Some of us had a look at a few burial sites in the Tifalmin Valley on the way back.

Back at Telefomin, Chris and Chas had done a great job of sorting rations and supplies for the remainder of the expedition, and groups formed up for a go at the other areas. - a large group for the FCV, and smaller ones for the 'big holes' south of Urapmin and Wam Tekan. The Star Mountains was discussed, but we decided against it on the strength of the results of the 1965 Australian Star Mountains Expedition (Hallyar, n.d.) and Shepherd, 1968). Also the cost and organization, for the possible results, was considered to be too formidable.

Anyway, an advance party, consisting of Alan Golbourne, set off for the Ok Nong to set up a base for ferrying the stuff through to the FCV. Whilst there, he sent news of large caves and massive resurgences at about 1500 m (plus) a.s.l., very encouraging considering the recce had shown that the sinks were at approximately 2500 m. He also sent news of large volumes of water resurging out of the

bedding in exposed outcrops of limestone. We couldn't wait to get moving.

The Wam Tekan patrol, consisting of Chris and Chas, who were to be joined later by Andy Eavis, the deputy leader, had set off. The area looked good on the recently obtained aerial photos with large river sinks and impressive looking dolines at high altitude.

People started to move into the FCV now and on the way up we looked at the risings in the Nong area, most impressive, and of the order of 5-10 cumecs too! Having well established the Nong Base, we decided to descend Tina Bu Tém, an impressive, fissure-like shaft adjacent to the clearing on the track that eventually leads to the FCV. Alan, Pete Gray, Howard Beck, and myself, watched by a large party of villagers who had encouraged me to shoot a few flying foxes, made our way to the edge of the hole. We rigged it with a 200 m rope and one by one, led by Peter, we abseiled down. We were all equally impressed by the 160 m (approximately), almost completely free hanging pitch, with curtains of water cascading out of the bedding. Completely open to daylight, it was the most exhilarating abseil any of us had done. At the bottom there was a large chamber, but the water sank into a mud choke on the far wall.

Knowing that it could never happen again, I shot a few flying foxes, whilst Howard and Peter prussiked out. I followed, and about half way up noticed that the rope was fraying at one of the points of contact with the rock face (a protector had fallen off). I hauled the rope up, tied a figure-of-eight and continued the ascent, reaching the top in an all up 25 minute prussik. Once at the top, it was obvious that the rope no longer reached the bottom of the shaft, and Pete abseiled down on to the ledge and re-belayed it with a second rope. On the way up Alan was struck a glancing blow on the head by a rock, accidentally dislodged by Pete ascending above him, but he was not badly hurt.

A few days later, the FCV party of about eight was established at Mogondabip Base, a small clearing on a ridge bisecting the valley. Exploration of the shafts began, accompanied by surface surveys and cutting. One by one, the shafts were descended, and one by one they choked. By the time we had reached Anawoltuman (Camp I), about 2 km east of Mogondabip, we were sorely disappointed. But Howard came back with news of a shaft, a short distance east of the camp, saying it looked good and was a goer. He had been down to the first ledge and was very impressed. The following day we decided to go and have a look at it, and Sid thought that it would be a good chance to shoot some 'wild' track of the descent. He had arrived with his off-sider, Noel Plumbley, a few days before.

Pete and Alan rigged the first pitch, and Sid went down to Howard's ledge, on a ladder which Alan had bolted the previous day. All set up and Pete went down to the second ledge, with Sid filming the descent. Pete then commenced to bolt the second pitch so that it would hang free, with Sid still filming. Noel was setting up the recording gear, when suddenly ... 'Look out Pete!', and an avalanche of rocks accompanied by the sound gear roared down the shaft towards Pete! The dust settled down followed by a desperate moment of complete silence. 'Pete, Pete! Are you O.K.?' 'Yeh, I'm O.K.', and he slowly prussiked his way up the rope. A narrow escape. Sid's timely warning, Peter's rapid evasive action of swinging under the overhanging ledge and jamming his fist into a crack saved his life. Fortunately the rope was not chopped by the falling rocks.

The next day Alan and I went down the shaft. I remained on Pete's ledge whilst Alan descended the next pitch. Another choke! Alan salvaged the sorry remains of Sid's sound recording gear and we went back to camp. Feeling depressed about the holes and worrying about Pete's accident caused a major lull in morale, but Jim Farnworth and Roy Blackham arrived on the scene to cheer us up. Exploration between Anawoltuman and Langlang (Camp II) kept us busy for a while, with John and Alan rushing off and finding holes, but still not a single going hole. When are we going to get a big one? That was the question on everyone's mind. I was beginning to think that we had made a mistake, but still clung to my theory that the big ones would be on the faults.

At last! After setting up Camp II, reports came back of a good looking hole that was still going. John O'Donovan and Roy had been down to about -100 m, John said that it looked really good, but was dangerous due to piles of loose rock perched at the top of some of the pitches.

In the meanwhile Andy had returned from the Wam Tekan patrol and wanted to field a trip to the Star Mountains with Mike Farnworth. Some of us objected strongly, but they went anyhow. We had sickness in the camp with several of us down with bacterial dysentery, and some SRT phobia, plus a few scares with Pete's near accident and fraying ropes. Our morale was low and getting lower, because the holes were not going and we were in 'never again' country which was wet, cold and miserable, but nevertheless exciting. Who knows? Donny's hole might just go.

So Donny and I decided to do a trip down with a pile of rope, a few ladders and some bolting gear. The hole proved to be rift-like, and impressive, taking just the right amount of water. An exposed traverse near the entrance, which Alan and some others had rigged previously, left us over an 80 m pitch which we descended to the previous level of exploration. Here, we were left on a ledge, above what appeared to be another longish pitch. Donny traversed out and rigged the rope off a couple of bolts, also rigged by Alan et al.

Roy had previously pointed out that the ledge was a natural funnel for any rockfalls and that it was a most dangerous spot. He was right too. We abseiled down what proved to be about a 50 m pitch, which was followed by a series of short pitches, that finally led us into a tight rift. Donny crawled down a narrow squeeze and came back with the news that the cave was, in his opinion, still going, but only for the little people. We reckoned that we were down 200 m or so. We had a bite to eat and noticed that the water was beginning to increase, so we set off up and out.

Back on that ledge again I was waiting for Donny to come up the rope, when suddenly from nowhere came a large rock which struck me with terrible force across both knees! It hurled me off the ledge and spun me around on the rope! I recovered and swung back to the ledge. In great pain I attempted to stand up, but my legs wouldn't bend without causing considerable agony. The rock had carried on down, striking Donny a glancing blow as he had arrived at the ledge. My only thought was that I had broken at least one of my legs. 'Out! Out!' Donny shouted. 'Go on, get on the b..... rope.' But we were in trouble. Our lights were being extinguished by the increasing cascades of water which had no doubt caused the rock to fall in the first place. Frightened, but getting

calmer, I encouraged Donny to wait until I got my small battery lamp going. This safely effected I set off slowly up the rope.

Finding the going difficult, I was forced to take most of my weight on my arms for the whole of the 80 m pitch. Donny followed, being prepared to tandem if necessary. Without light for most of the way up, he must have had a bit of a time with it. I got myself safely into the rift traverse and Donny chimneyed past me. I couldn't go any further, my legs had packed in altogether. A quick discussion and I crabbed into a bolt, while Donny set off out for help. An hour later he reappeared with some hot coffee and a tin of cigars, wonderful. John Buchan strapped up my legs with rope and a couple of splints and they hauled me out. What a team, another efficient rescue. Within a short time they had me back in bed at camp. 'No broken bones,' John declared, 'Just some very nasty swelling.' I was out of serious caving from now on and had to be content with hearing news from my bed.

There was another trip down Langlan Tém, which was the name given to the going hole, by John Buchan, who was now getting renown for his ability in tight places, and one other person. John managed to get to the top of another pitch, but it was decided that we would give it a miss because of the tightness, risk of flooding and the danger of falling rocks. Also, in the meantime, Howard and Pete had come up with another goer, further east. The new shaft was named Terbil Tém after the creek that enters it. There were several trips by several people down this technically difficult cave with over twenty pitches, each with a couple of bolts because of the lack of natural belays, and many hairy traverses with tight take-offs. Alan pushed and pushed himself until he was nearly worn out. But each day people would come out of the hole, walk back along the muddy, miserable track and report that they had only pushed it for 50 m or so. Tension set in and morale was again at a low ebb. Here we were with a going cave but not enough fit people to push it.

Just at the opportune moment (as usual) I managed to say the 'right' thing, 'What you want is some hard New Zealanders or Aussies, they'd be in and out in no time.' The effect, in fact, was like holding a red flag at a mad bull and I certainly deserved the terrible ear bashing that followed. After many difficult, long and hard trips the lads bottomed it at about -360 m. They had spotted a connection, high up, with another shaft, and decided that it may get them past the constriction that had stopped the descent of the first.

At this stage, Chas and Chris rolled up, just what we needed, some fresh blood. (We had, in fact, asked them to come up via the radio.) They set off down and pushed the second shaft, but it unfortunately joined the first shaft lower down. They came back disappointed, but pleased, after a long and rewarding trip. Sid and a full team followed up with a mammoth filming and derigging trip. The hard work was really beginning to show and I think people were really looking forward to getting out. But we all still wanted to get a new southern hemisphere depth record at least.

In the meantime more surface exploration was taking place, and people were cutting further east along the valley. Another good looking hole was discovered, but it was almost time to start pulling out. However we had a look at the hole first and it was another goer! Alan had descended the first pitch and come

back with the good news. Noel and I followed up with a quick trip down and descended a couple of pitches, still going! (Two weeks had elapsed since my accident and I was now reasonably mobile.) We were down about -80 m, but I was apprehensive about continuing, I think due to my accident.

Sid wanted most of us down the Nong for filming, so a party of five stayed behind to push it, including Alan whose constant energy and drive won him much respect. So a camp (Camp III) was set up near the hole, which still remains unnamed, and most of us set off for the Nong. A couple of days filming the resurgence cave and the incredible outcrop resurgence that supplies most of the water for the Ok Nong saw things to an end. Standing and looking at the resurgences, in the order of 5-10 cumecs at normal level, confirmed my continuing belief that there were some very deep and extensive systems in the FCV and an expedition, concentrating on this area alone, would have an excellent chance of turning up the real thing.

Finally, we were back at Telefomin waiting the return of the party from Finim Tel, the Stars, and the remaining five in the FCV. Anxious for news (we had lost radio contact with the Finim Tel and the FCV) we sat around discussing the trip and the final pull out. Andy's party was first in, no new holes, but a thoroughly rewarding trip with a couple of new species of cave fauna. Second to come in were the Finim Tel mob, no connection of Selminum Tém and Ok Kaakil Uneibo Tém, but they reckoned on 20 km plus for the length of surveyed passage in Selminum Tém, which clinched a southern hemisphere length record. Finally the team from the FCV turned up, with news that the last hole went for -380 m, making it the deepest of the expedition. It had been another hard, tight and technical cave.

By the 25th November we were all back in Telefomin. All that remained now was to move out. After about four and a half months in the field, we were somewhat disappointed about the lack of real depth, but highly satisfied with what can only be described as a very successful expedition. There can be no doubt as to the staggering potential of the area. In the short time, relatively speaking, that we were there we descended about 150 shafts and 50 or more caves were surveyed and/or explored. The deepest caves were 380 m, 360 m, 200 m and a number of shafts were around 150 m (subject to confirmation). Total length of cave surveyed would probably be in excess of 30 km, but less than 40 km.

BRIEF SUMMARY OF POTENTIAL

Star Mountains. Our party basically followed in the foot steps of the 1965 Australian Star Mountains Expedition, and no new discoveries were made, but Andy Eavis considers that the fault behind Benstead Bluff could be rewarding. Maximum depth potential would be approximately 500-600 m.

Finim Tel. It was apparent that significant, vertical development is unlikely due to impervious shale bands being located beneath a relatively shallow layer of limestone. Depth between sinks and risings vary, but something in the order of 500-600 m can be expected.

Fugulil. Apparently the limestone massif, known as Fugulil De Bcm, is the product of massive faulting followed by a slik and slide process on the top of

a band of shale. Maximum potential between the summit of the massif and the resurgences below the wall must be in the order of 2000 m (estimate). But because it is sitting on shale, it is unlikely that there is any development to that depth. Resurgences at plateau (Finim Tel) level confirm this. The back slopes however are cavernous and it is possible that extensive systems do exist.

Ok Agim Area and the Big Holes. It is my opinion that this area has excellent potential for cave development, but depth of over 600 m is unlikely. A thorough exploration of the area was not made and we are not sure whether we actually got into the area of the big holes or not. (Due to an error in the geological map.) Between here and Fugulil there is a very high range (3000 m approximately) which could well support deep systems, but nothing is known.

Fault Controlled Valley. This must be one of the most promising areas in the country. There is 1000 m plus known elevation between sinks and risings, and the limestone dipping at 40° towards the resurgences. There are numerous shafts in clean, solid, grey to white, marine tertiary limestones located along a major fault with good catchment and run-off. Apart from the Nong, there are other resurgences on the Wall side. Their altitude is unknown, but from aerial photographic interpretation, it seems that they would be located around 1500 m to 2000 m a.s.l. It is my opinion that the FCV drains into the Nong and that the honeycomb karst south of it drains below the Wall.

Our party pushed for a total distance of only 5 km eastwards from Mongondabip and the altitude of the valley floor was seen to be gradually increasing. The potential therefore should increase accordingly. Forty two shafts were explored, and although only three showed substantial vertical development, I believe that concentrated exploration of the area would result in the discovery of a great number of deep and significant caves.

Wam Tekan (Mop and Enga). The maps incorrectly show Wam Tekan as being situated a short distance NNE of the headwaters of the Sepik River. This mountain is in fact a series of peaks two of which are known locally as Mop and Enga. Wam Tekan (correctly known as Wam Tigiin) is a short distance west of Telefomin and north of Feramin. The potential of the area could be considerable, but a detailed reconnaissance would be necessary in order to establish elevation between sinks and risings. Development could be hampered by bands of shale, but this is by no means conclusive. Two shafts of over - 150 m were explored, but both systems sumped.

Local people. Little has been said about the local people because it is my intention to write more fully on this subject elsewhere. Sufficient to say here that the porters employed by us were reliable, hardworking and very hospitable. They worked in very difficult and demanding conditions, carrying very heavy loads and remained cheerful and willing throughout. Without them the expedition would not have been possible. The village people themselves were equally as hospitable and helpful, and likewise without their co-operation and friendliness we could not have achieved our objectives.

The Biology. My knowledge of biology is almost nil, but I can say that the expedition was an incredible success in terms of biology. A large number of new

underground and surface species of insect were discovered. Peter Beron, the senior biologist on the trip, was seen to be rushing around collecting in every crack and cranny, and he is very enthusiastic about the results.

To conclude then, I would like to point out that this account is very brief and obviously biased. It is seen from my involvement in the trip and does not cover many of the events that took place elsewhere. My apologies to persons not mentioned in the report.

A full report of the expedition will be published later this year, followed by a popular account and the release of a full length film. All information collected on the expedition will be made available to the Papua New Guinea Government.

REFERENCES

Hallyer, T. (n.d.) An Account of the First Crossing of the Australian Star Mountains, 1965. Microfilm PMB83. Pacific Manuscripts Bureau, Australian National University.

Shepherd, M. J. (1968). Australian Star Mountains Expedition Central New Guinea, 1965. Transcript Proceedings 7th Biennial Conf. Aust. Speleological Federation: 136-139.

Wilde, K. A. (1975). New Guinea 75 - British Speleological Expedition to Papua New Guinea: An Account of the Reconnaissance in the Hindenburg Ranges and Area. Niugini Caver 3(4): 111-118.

* * *

(Advertisement)

C A N V A S & C O R D A G E P T Y L T D

Corner Ah Chee Avenue & Matupit Street, Rabaul, P.N.G.

P.O. Box 476, Rabaul.

Phone 92 1446

MANUFACTURERS OF TARPAULINS, AWNINGS, TENTS, BOAT
CANOPIES, PLASTICS AND CANVAS GOODS, RAINWEAR AND
SHOWER CURTAINS, DOMESTIC AND COMMERCIAL UPHOLSTERY

.....

WE REPAIR P.V.C. and CANVAS - RUCKSACKS, TENTS ETC.

WE MAKE RAINWEAR (COATS AND TROUSERS) TO ANY
SPECIFICATION (WITH/WITHOUT CAPE, SLEEVES) -
ANY SIZE.

Tough and ideal for bush wear!

..... WRITE OR CALL FOR A QUOTATION

* * *

NOTES ON THE CAVE BIOLOGY OF THE HINDENBURG MOUNTAINS

P. Chapman *

Two important factors decide the type of cave community found in the Highland caves of Papua New Guinea. They are the quantity of food present and the stability of the habitat.

In cave passages liable to sudden violent floods, there are few safe places for land living creatures and the community consists mainly of highly mobile species, such as long legged spiders and crabs, which can escape to safety during floods and return to feed on the flood debris when favourable conditions are re-established.

In habitats with a regular high food input, such as the guano mounds beneath bat roosts, there is a stable and varied community of organisms which spend their whole lives in security and plenty and which therefore have no need of special adaptations for cave life.

But the animals of most interest to the biologist are those living in passages deep underground where food is carried in only during occasional floods. Here the community is adapted to a 'wait and pounce' life style. The inhabitants survive long periods of starvation because they have a slowed down living rate, with little movement and slow growth. When floods bring in long awaited food (bits of leaves and twigs and the occasional surface animal), the whole community springs into action, eating to bursting point and using their sudden surfeit of energy to mate and lay their well-provisioned eggs before settling down once more to the long wait.

Many of the species which make up this latter community entered the cave in an early stage of its development and have since disappeared from the surface landscape. Thus the deep cave community of ancient caves can give an insight into the climate and conditions operating on the surface many tens of thousands of years ago.

Predictably, many of the oldest caves in the Hindenburg Ranges have produced the most exciting finds. Bem Tém, close to Telefomin, contains a population of strange white polychaete worms stranded when the rocks were lifted out of the sea. The worms are now living at 1500 m. (Editor's note: Bem Tém is the cave referred to as 'Great Cave' by the 1965 Star Mountains members.) Selminum Tém on the Finim Tel Plateau and Okemimal Tém to the northeast of the Iram Valley both at about 2200 m altitude have a bewildering variety of 'living fossils' such as pale eyeless beetles, slaters and millipedes which were probably driven into the cool underground environment when the ice sheets retreated at the end of the last glaciation and the surface climate became unbearably warm for them.

* 36 Northumberland Road, Clifton, Bristol 8, United Kingdom.

* * *

THE CAVING SCENE

Bougainville. In January Hans Meier was all set to take a group of students out to Nenduma when the political situation on Bougainville deteriorated and the trip was called off. However in February he got out there with Michael Kiap and Kamo Dow. Because of the wet season, the lower areas of the cave were 'tambu', but the dry sump still showed footprints from the previous trip so this area is quite safe. On the way out loud shrieks were heard. Investigation revealed the noise to be coming from a bat in the process of being squeezed to death in the coils of a snake.

Chimbu. Mary Jane Mountain from U.P.N.G. spent three weeks excavating at Nombi rockshelter in the Chuave area in December, this being her third trip to the area. Michael Bourke, Tim Sprod, Chris Pugsley, Tony White, Kevan Wilde and Chas Yonge spent a week caving in the Porol Ranges and Chuave area over Christmas. Caves visited were Irukunguai, Mebikombogo, Darua Muru and Angunga. Darua Muru and Angunga were pushed further but not bottomed. A report on the trip and description starts on page 17.

East New Britain. In November Robin Bain and John Mugsford took a party out to the Iuvare caves and introduced a number of the party to caving. In December Stanley Bongbong and Michael Bourke headed out to the Rembarr Range to look at reported caves, but the trip fizzled when the guide was unable to make it. However on their return to Keravat, a previously unexplored cave was 'discovered' right on the ag station where they work! The cave is developed in volcanic deposits and is some 250-300 m long. There is a water flow of some 30 m³/min (17 cusecs) in it and it contains numerous bats, insects and a few snakes. The stream makes it quite fun to explore. A smaller cave was noted upstream.

In January David and Michael Bourke and Bruce and Peter Hicks returned to the newly found cave and pushed it through to the end by negotiating a duck and a bit of tight passage. Another small cave was found. A week later the two Bourkes, Alan Olden, David Smith and Tim Sprod went through the known caves and found a further two small caves on the same stream. Michael used the opportunity of a visit to Matupit Volcano later in the month to make a few measurements in the cave in the volcano.

Eastern Highlands. An art exhibition with a difference was held at the Lantern Restaurant in Goroka in November. The exhibition featured paintings and copper beatings by Bev Wilde based on highland cave art. Hell's Gates was visited just after Christmas by five cavers of the PNGCEG Highland meet. (See page 17.)

Expeditions. The '76 Lelet Plateau Expedition is definitely on. To quote from Information Sheet No. 1, the trip "aims to put 8-12 cavers in the area for one month from approximately 25.6.76 to 26.7.76. The aim will be to continue systematic exploration and mapping of cave systems on the high parts of the plateau, explore the resurgence systems on the NE coast, and undertake geomorphological research into the origin of the karst landforms. Biological collection will be attempted if possible."

Anticipated cost ex Rabaul is K160 per person. There are six definite starters at this stage, three from Tasmania, two from Queensland and Tim Sprod from Rabaul. The leader, Dave Gillieson, is looking for another four cavers, preferably from P.N.G. Interested people should contact the P.N.G. Liaison Officer, Tim Sprod at Box 1391, Rabaul.

I have heard that plans are progressing for this year's Muller Range trip. Julia James in Sydney is doing the organization.

Manus. Geoff Francis, Leonard Jonli and Pius Liou went out to Nge-Pelimat on Los Negros in late November and descended the 20 m pitch to the pool at the end of the cave. They were carrying a powerful light and made a number of discoveries. There are fish (gudgeons) in the pool as well as hermit crabs. The pool may be deeper than Geoff's previous 20 m sounding.

Morobe. Like the West Sepik, West New Britain and Gulf Provinces, there are probably plenty of caves in the Morobe Province but because of difficult access, very little is done there. However Frank Salt has been doing a bit of caving up Snake River way lately. In November, Paul Wotjkowski and Frank visited the art and burial sites there and the well known large cave at Marpos Village. In a six hour trip they did not explore all of the cave. (See page 36.)

New Ireland. Petar Beron visited 14 New Ireland caves in November on a cave fauna collecting trip. As well as getting up to the Lelet Plateau, he visited three previously unreported caves. (See report page 27.)

West Sepik. Kevan Wilde visited a rock shelter in the Frieda River area recently. The shelter, which is in agglomerates, is a possible archaeological site.

Cavers. Port Moresby has had a great influx of cavers of late. Randell (Clive) Champion, who was caving in P.N.G. in the sixties and wrote the P.N.G. section of the ASF Handbook, moved there from Melbourne recently. He hopes to get back into caving here and will be around for two years at least. Any speleos in Moresby are invited to contact him at the Housing Commission. Alan Goulbourne should be with Plant and Transport there by now. He came out for the British trip and decided to stay on for a while. Bill Lehman is another new arrival. Bill is a Taswegian who will be with Posts and Telegraphs in Moresby for a few years. Bernard Pawih has moved from Manus to Moresby to undertake studies at U.P.N.G. Bill Sanders has come in from the bush (was it Ambunti?) to the village courts at Konedobu.

Other new faces around the country are Alan Olden who is a British caver now in Rabaul and Frank Salt, also ex England, who is in Bulolo. Jim Farnworth is back in Rabaul after a stint in the highlands and joining his wantoks in Telefomin. Kevan Wilde is back in the bush at Frieda River again after spending most of last year caving.

Gordon Bain has gone finish from Moresby to Hobart after many years of residence in Moresby. Gordon was the principle initiator of the Port Moresby Speleological Society and the Society's moving force for many years. Geoff Francis has left Manus and returned to Sydney, leaving Pius Liou to keep up the exploration.

* * *

R.M.B.

THE 1975-76 PNGCEG HIGHLAND MEET

R. Michael Bourke *

The caving part of the trip extended from 26th December, 1975 to 2nd January, 1976. Participants were Michael Bourke, Alan Olden and Tim Sprod from New Britain and Chris Pugsley, Tony White, Kevan Wilde and Chas Yonge who had just returned from the British expedition.

After a most pleasant Christmas Day at the Wildes' Goroka flat, Alan, Chris, Kevan, Tim and I headed out to Hell's Gates near Henganofi on Boxing Day in the Wilde 4x4 Toyota. We rigged the 11 m pitch in the Kirimifamu Stream passage with a ladder, but did not descend. Rather we abseiled into the very impressive Meremere Yiapinka Stream entrance. (See N.C. 3(2): 28-31 for description and map.) The entrance was rigged in two pitches, the first being 20 m long and against the rock face and the second a free 31 m drop giving a depth of 51 m for the entrance. (We knew it was 31 m when I broke the 30 m tape when I abseiled down - I wondered what Kevan was shouting about.) From the bottom the pitch is certainly impressive with some 35 m³/min. (c. 20 cusecs) of water coming over it when we were there. Kevan finished off a bit of surveying at the base of the entrance (see map) and then we moved downstream to Tambara Chamber and Ogafunga Stream. Kevan had not been up this passage before. It was followed for about 150 m to where the passage closed down and it became necessary to go through a squeeze at floor level. Tim had a look at this, but we pulled out without all going through. The passage continues. We exited via the Kirimifamu Stream passage.

There are a lot of flying foxes and insects in the cave as well as more leeches than I have ever seen anywhere before. It would be interesting to find out whether they are related to the recently described white troglotic leeches from Javavere (Richardson, 1974). The villagers hunt the flying foxes regularly apparently and gain access via both entrances, negotiating the pitches on bush vines! A fitting cave to start our trip.

The following day Alan left us to return to Rabaul and we were joined by Chas and Tony to bring the party to six. We drove to Kundiawa and set up camp at the didiman's dormitory, thanks to John Van Amstel. We drove up to Pari Village and had a look at the Porols and Chimbu Gorge. Except for Kevan, we were all new to the Chimbu and were duly impressed by the fine scenery. The gardens really are located on 40° slopes. We had a look at the art in the Kokombogo Rockshelter next to the road above the Chimbu Gorge. (See N.C. 1(4): 95-103).

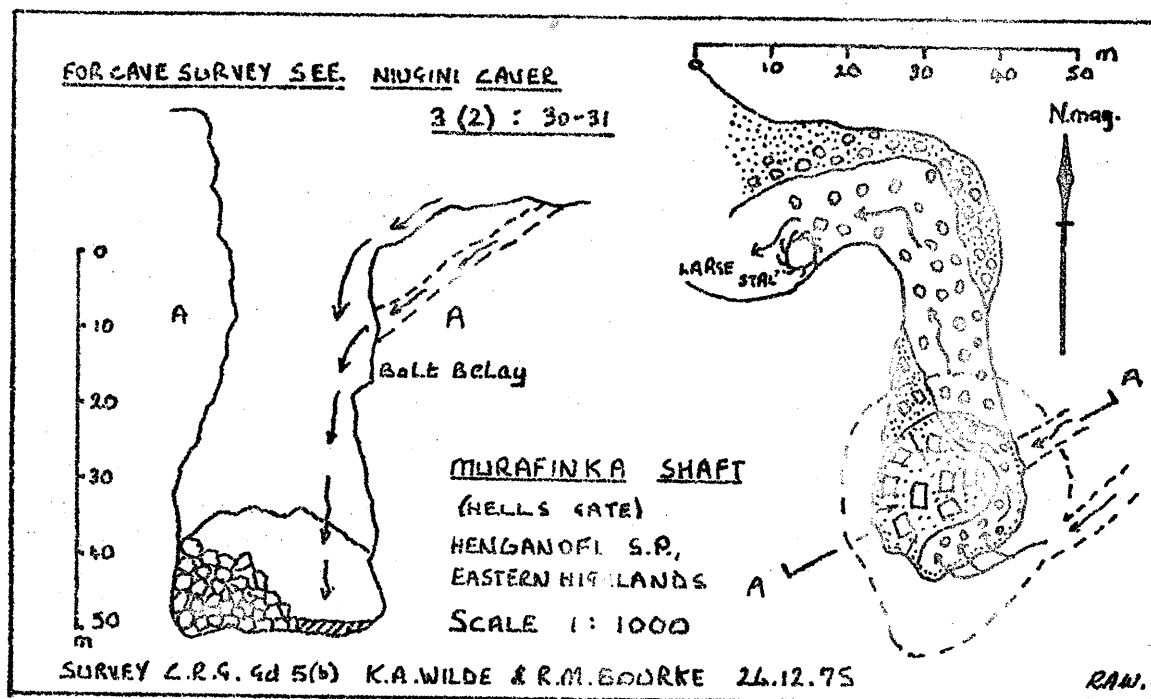
Sunday we spent in Irukunguai (Irapui). Chris and I took a lot of photographs, so progress was slow. The cave is very well decorated and is probably the best decorated of the recorded caves in P.N.G. We explored Tarn Chamber and the Passage of a Thousand Wounds, but did not go into Niglgagle Pools. (See N.C. 1(3): 70-74 for map and description.) Mebikombogo was looked at briefly. Next day we returned to this cave which is near Irukunguai on the south bank of the Kwi River. Chas and I surveyed the cave. (See page 25.)

* D.P.I., Keravat, E.N.B., P.N.G.

It is an old resurgence about 740 m long with very strong strike control. The cave art and bullet scars at the entrance are most interesting. The villagers used to hide in the cave in times of tribal fighting but did not penetrate far inside until Fred Parker explored it with them. Now they go right through including the sump. Chas, Tony and Tim went down to the stream at a lower level and found it flowing with a chocolate coloured stream. Outside we found the Kwi to be very high and so we hurried back to Kundiawa in the Toyota. Another hairy trip above the Kwi and Chimbu Rivers along the narrow slippery track - luckily Kevan was as scared as the rest of us, so we took it very cautiously.

On Tuesday Chas, Tony and I walked up to Darua Muru ('The Hole'), an unfinished deep cave past Pari Village previously estimated to be 170 m deep (See N.C. 1(3): 67-69 and article this issue page 20.) We got down a number of pitches past the previous limit of exploration but ran out of rope and were stopped at the top of a 7 m pitch at 187 m down. We surveyed our way out (70 stations), not an easy job in the tight, twisting, muddy passages towards the bottom of the cave. We exited at about 12.30 a.m. after a 11½ hour trip. We got to sleep in Pari at about 3.00 a.m. and spent the rest of the night there. Wednesday was spent washing gear, recovering, sleeping, transcribing my very muddy survey notes, and drinking in the New Year - for some at any rate.

Thursday we drove back to Chuave and walked up to Nola Village (1750 m). Kevan descended the first pitch of Angunga Cave which he had previously noted but not gone down (See N.C. 2(4): 249-250.) However his 45 m rope was too short. That evening Chas and Tim did a 5½ hour trip down the cave and got to about 150 m. depth. From the base of the first pitch, a passage leads off which becomes tight. This opens up into a large river which Chas reported sumping downstream.



They surveyed their way out. We spent the night in Councillor Nomani's house and the 'haus man'. The villagers were greatly concerned for Chas and Tim's safety, but were more or less reassured by our nonchalance. Nomani is the 'papa bilong graun' and tried to charge K10 for the visit, but we held to the standard K2.

There are stream sinks and shafts all over the place in the Nola area. Tony had a look at one not far from Nola and also a cave entrance (Pato) visible from the village. The latter is a largish chamber with flying foxes inside.

Friday was the last caving day. Kevan and Tony went back to Angunga. They followed the big stream downstream for a few hundred metres before turning back to finish off the survey. The cave is still going strong and is potentially several kilometres long and several hundred metres deep. Another Chimbu cave that will have to wait. We moved back to Goroka in two trips and finished the trip with an evening at the Goroka Club. Saturday Tim and I flew to Lae for the return trip to Rabaul; a few days later Chas, Chris and Tony flew to Moresby on their way back to England and Kevan headed off to Madang for another stint up Frieda River way.

The consensus was that the trip and the caves were most enjoyable. I had hoped that we would bottom at least one of the two deep unfinished Chimbu caves ('The Hole' and Mebile). Instead we extended one and found a third. At least they provide an excuse for a return trip.

The potential for exploration in 'known' and unrecorded caves is amazing, considering the attention the Chimbu has received compared with the rest of P.N.G. The Chuave area is particularly promising.

REFERENCE

Richardson, L. R. (1974). A New Troglotitic Quadrannulate Land-Leech from Papua (Hirudinoidea: Haemadipsidae s.l.). Proc. Linnean Soc. New South Wales 99(1): 57-68.

* * *

OLD COPIES OF NIUGINI CAVER

There is a steady demand for back issues of N.C. These are most welcome as many are from libraries and other institutions where they should be preserved for many years. They also help to keep the books balanced - and are part of the reason the subscription remains at the ridiculously low price of K2 p.a. However stocks of some issues are very low and one number is exhausted. So if you are throwing away old issues when you go finish or clean out the attic, it would be greatly appreciated if you could pop them into an envelope and address it to the editor.

The first issue has been reprinted again (third printing) so all back issues are available except Volume 1, number 2. Some are now in very short supply however. All are priced at 50 toea or 50 cents Australian each.

* * *

DARUA MURU, CHIMBU PROVINCE: 194 m DEEP AND STILL GOING

R. Michael Bourke *

Darua Muru is an unfinished deep cave in the Chimbu that was partially explored in early 1973, to an estimated depth of 170 m. Wilde (1973) used the name 'The Hole' as the local name was not known to him at the time. The present description follows a 11½ hour exploratory and surveying trip by Tony White, Chas Yonge and myself on 30th December, 1975.

Darua Muru (= the hole at Darua) is located about one hour's walk in a westerly direction from Pari Village which is north of Kundiawa. Our guide, John Danga, gave the owner as Ongugopapaagu although Kevan earlier recorded him as Siwi. The entrance is just below a saddle and a steep sided gully leads into it. Wilde (1973) states that a permanent stream flows in it, but it was not flowing at the time of our trip. Some 20 m from Darua Muru is another cave with a pitch about 8 m inside. It is said to have been used to dispose of unwanted persons in the past. The villagers told us that Bill Sanders and Tony Maddern descended it and found skulls inside.

The entrance proper of Darua Muru is 3 m high and 4 m wide. At first the cave descends steeply with pitches of 11 m, 8 m, 5 m, 4.5 m, and 10 m before a long 70 m pitch is encountered. In the passage just before the 70 m pitch, the cave twists anticlockwise through 270°. This is not clear on the plan. The long pitch is a beauty. The only protection required is at the top just below the tie off on a column. The pitch is clean and not quite free most of the way. There is a sloping ledge about 45 m down.

After the long pitch a number of shorter ones of 5.5 m, 10 m, 10 m, 3 m, 5 m and 3.5 m follow. The roof is very high here and was estimated as 25-30 m but this may be way out. We picked up a small stream at the bottom of the pitch and this continued to the limit of exploration. The passage width narrows. The abseils down the 10 m cascades are most pleasant. After the cascades one moves through a tight tall passage. At about the 3.5 m pitch the floor changes from limestone to sand and mud as the gradient of the cave eases. A 5 m pitch follows. Beyond this the roof height drops to a few metres and the passage becomes quite narrow in places. There is a muddy watermark on the walls 1.7 m above the floor level which is not very cheerful.

We were stopped by lack of rope at the top of a pitch estimated at 7 m. The last survey point was the tip of a large rock in the middle of the passage. The cave is 187 m deep and has 236 m of plan passage at this point, although the straight line distance from the entrance is only 127 m. Cave development appears to be down the dip.

The earlier estimate of 170 m was pretty accurate to where they explored although they overestimated the length of the long pitch.

Darua Muru is about 194 m deep and still going. It is well worth finishing and it makes a most enjoyable trip. It is currently the seventh deepest in P.N.G. It may reach 300 m although the way it was going, this appears unlikely.

REFERENCE.

Wilde, K. A. (1973) The Hole, Porol Escarpment, Chimbu District. Niugini Caver 1(3): 67-69.

* D.P.I., Keravat, E.N.B., P.N.G.

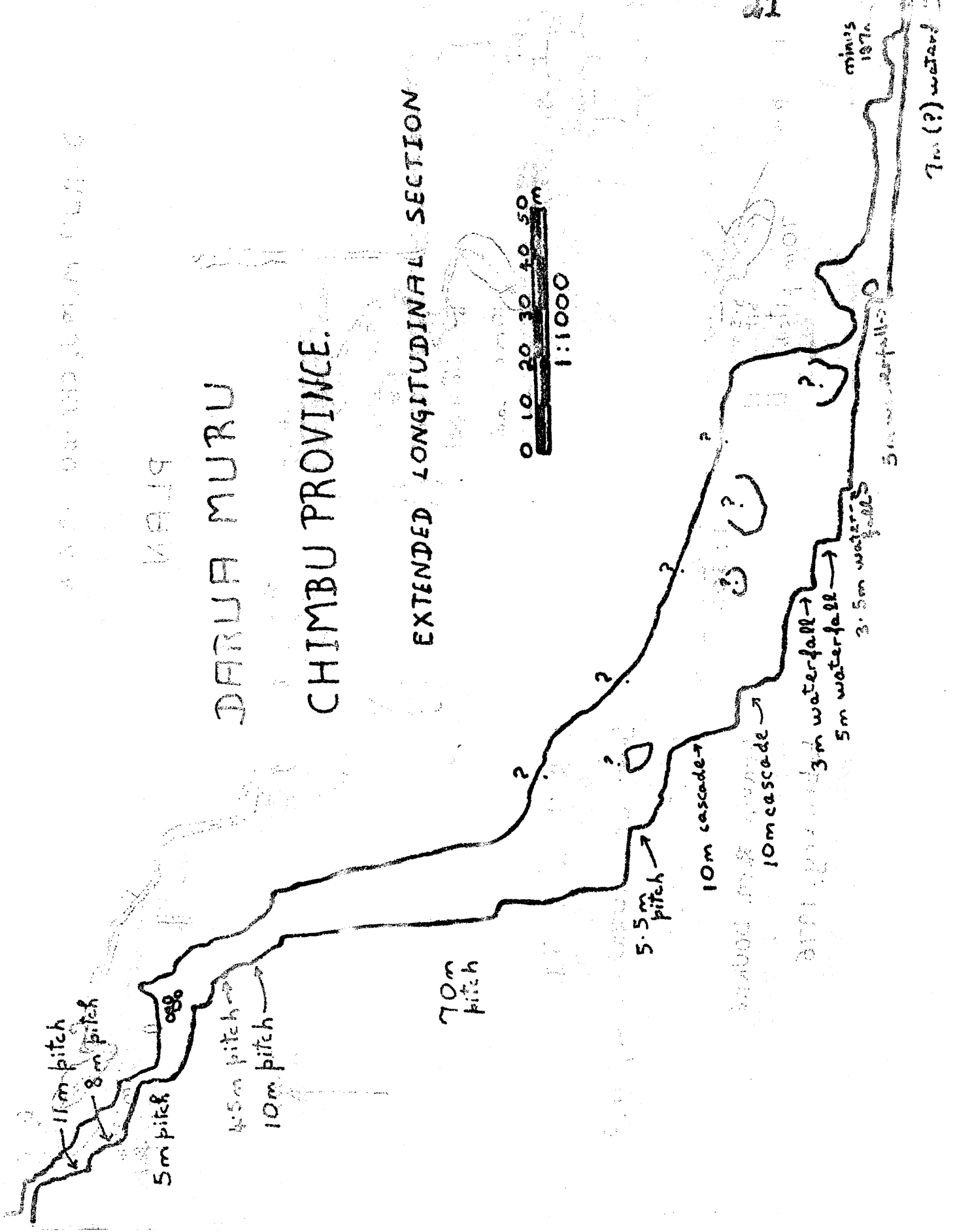
* * *

MA 19

DARU MURU

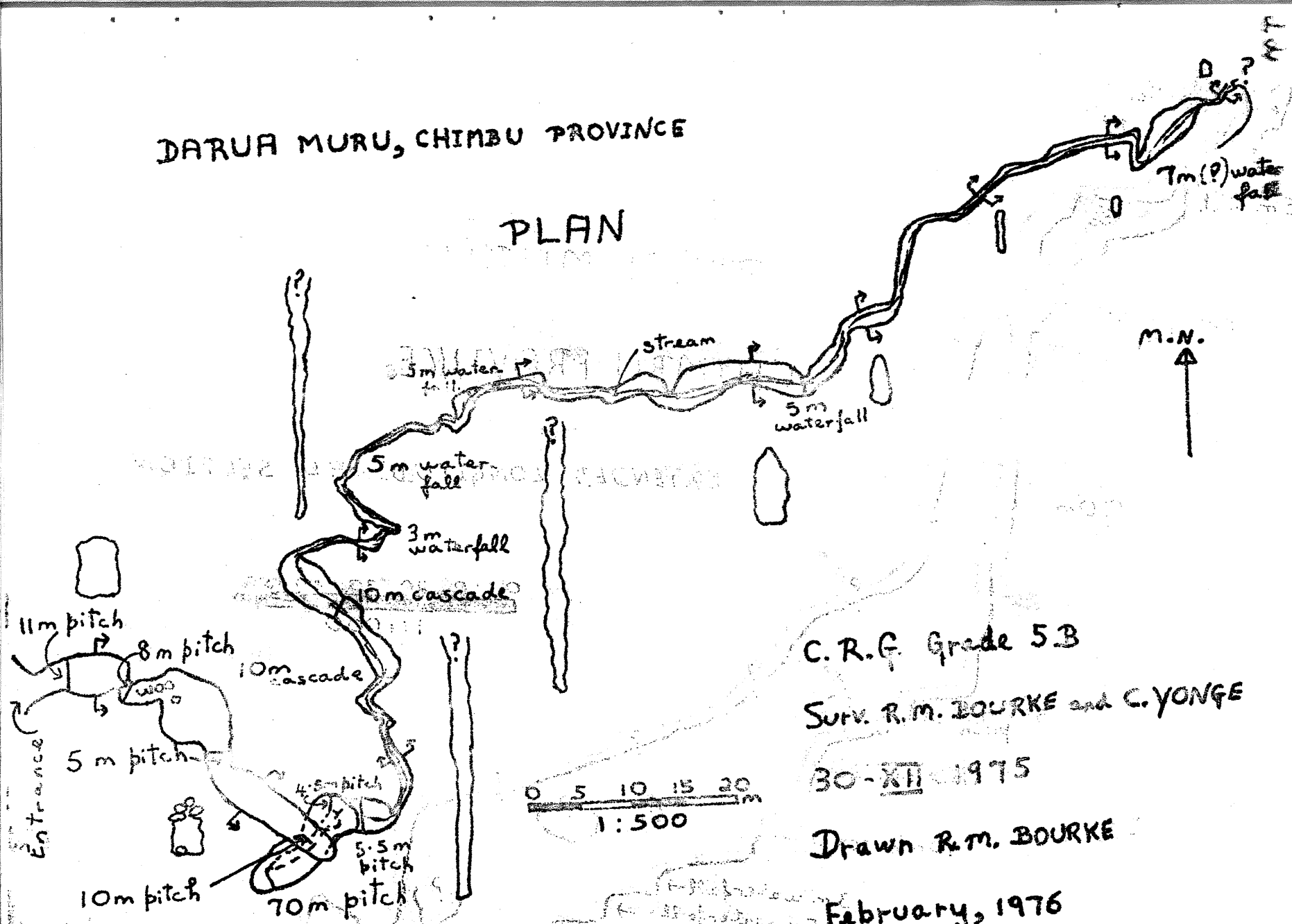
CHIMBU PROVINCE.

EXTENDED LONGITUDINAL SECTION



DARUA MURU, CHIMBU PROVINCE

PLAN



C.R.G. Grade 5.B

Surv. R.M. BOURKE and C. YONGE

30-XII-1975

Drawn R.M. BOURKE

February, 1976

ANGUNGA SINK, CHIMBU PROVINCE

Kevan A. Wilde * and Tony White **

On the last two days of the Christmas '75 Chimbu trip we had a look at the shaft noted by Wilde (1974) near Nola Village at the back of Chuave. The shaft, known as Angunga, has strong possibilities of connecting with Kiowa River system with possible depth potential of 300 m. Local legend has it that both Angunga and Nola Sinks are related to Kirove Cave. Between the three systems there is a valley with a number of dolines and stream sinks, running NW to SE for some 5 km with a drop in elevation of about 300 m. An extensive river system could exist between Kirove and Kiowa, thus establishing legend as fact.

The entrance to Angunga is a mere 200 m from Nola Village. Kevan abseiled down the first pitch on a 40 m rope, but it was too short. Tim and Chas rigged the pitch and set off down what turned out to be a clean, free hanging, wet 44.5 m pitch that led into a narrow, but high, rift stream passage. They followed the passage for 250 m to a 3 m climb. After the next short section of narrow passage they emerged, as in a caver's dream, into a rapid flowing river passage 8-10 m wide and 10-15 m high, the floor covered with limestone and sandstone boulders. A quick trip downstream led them to an apparent sump, whilst the upstream section kept going. After 80 m the passage became narrow with deep water. They tried swimming, but it proved impossible with their water filled clothing. So they retired and surveyed out from the rope climb.

The following day we descended and continued surveying in from the 3 m climb. We carried on to what was believed to be the sump and decided to check it out. After submerging ourselves in the deep, still water and peering around the corner, we discovered that the passage continued without diminishing in size. We continued exploring and surveying along a continuously well developed stream passage with no sign of closing down. On the right a splendid flowstone cascade was noted. Running out of time and apprehensive of continuing without support, we turned back and surveyed up the main passage to where the water became too fast to negotiate without wetsuits.

Altogether some 250 m of side passage and 250 m of main passage were surveyed. It is almost certain that the three systems of Kirove, Angunga and Kiowa are related. Provided they do not sump, an extensive system can be envisaged. (Kirove is known to sump, but it may be possible to push the stream in Angunga as far as possible.) Kiowa is known to be fairly extensive and is unlikely to sump. As there is of the order of only 50-60 m between the surface and the main river passage in Angunga, it can be expected that there are numerous vertical wet pitches to be found. Exploration would require a well equipped party of five or more in the dry season and the rewards could be substantial. The Chimbu is by no means caved out and the prospects are exciting.

REFERENCE

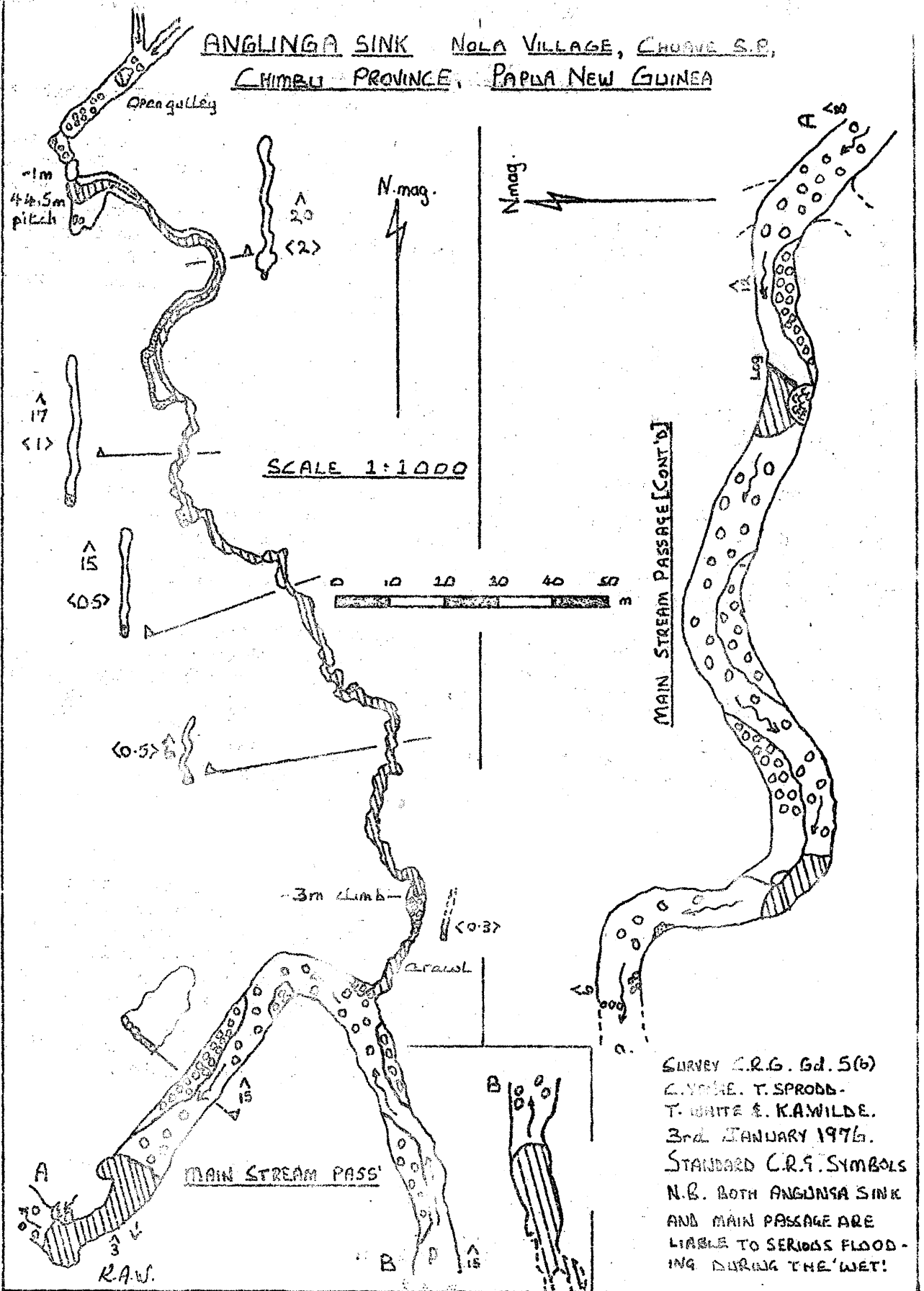
Wilde, K. A. (1974). Trip to Gomea and Nola Villages Area, Chuave, Chimbu District. Niugini Caver 2(4): 249-250.

* P.O. Box 1055, Goroka, E.H.P., P.N.G.

** 89 Leek Chase, Hunslet, Leeds 10, England.

* * *

ANGLINGA SINK NOLA VILLAGE, CHUAVE S.P.,
CHIMBU PROVINCE, PAPUA NEW GUINEA



MEBIKOMBOGO CAVE, CHIMBU PROVINCE: THE SURVEY

C. Yonge *

On the Christmas Chimbu trip, the opportunity was taken to survey Mebikombogo. Fred Parker was the first to describe the cave and applied the name Mebik to it. (Parker, 1967). Wilde (1973) also gives a description. Petar Beron visited the cave in November, 1975 and collected fauna as far as the duck.

Mike Bourke and I did the surveying. At 45 m from the complex entrance, a small passage led leftwards and steeply downwards with the dip. A discernible noise of running water was emanating from within which served to endorse Kevan's comments that the system could possibly be more extensive (Wilde, 1973). On our return Tony, Tim and I investigated the passage. Following the dip passage downwards, we soon encountered a small 3-4 m pitch which was free-climbable, and beyond we could see a water-lashed chamber. A number of inlets entered at the point including one large one heavily charged with sediment. We deduced that the water was being taken directly from the river as we were now level with it. The complex aggregation of inlets led shortly to a sump.

From the passage leading to the water, we continued along the main passage which in general headed eastwards on the strike although taking a slightly upward trend of around 2°. A change in section and we were in a low, uniform arched passage with a shingle floor of black rounded xenopebbles. This had the slightly worrying atmosphere of the phreatic tunnel and sure enough a short duck under stalactites confronted us. We were 130 m from the entrance.

Beyond the duck, the passage becomes its largest and maintains its 'lean-to' cross section virtually until the end of the cave, producing at one stage a 120 m corridor of constant dimension and undeviating in direction. Although we were progressing 'upstream', the water flow was extremely slight and the existence of three mud soaks indicated the presence of a lower drainage. Large stalagmite bosses 15 m upstream of the duck had been undermined extensively at some stage during the cave's development leaving a false ceiling of clinging calcited boulders. There is a calcified 'bombom' (firestick) at one stage.

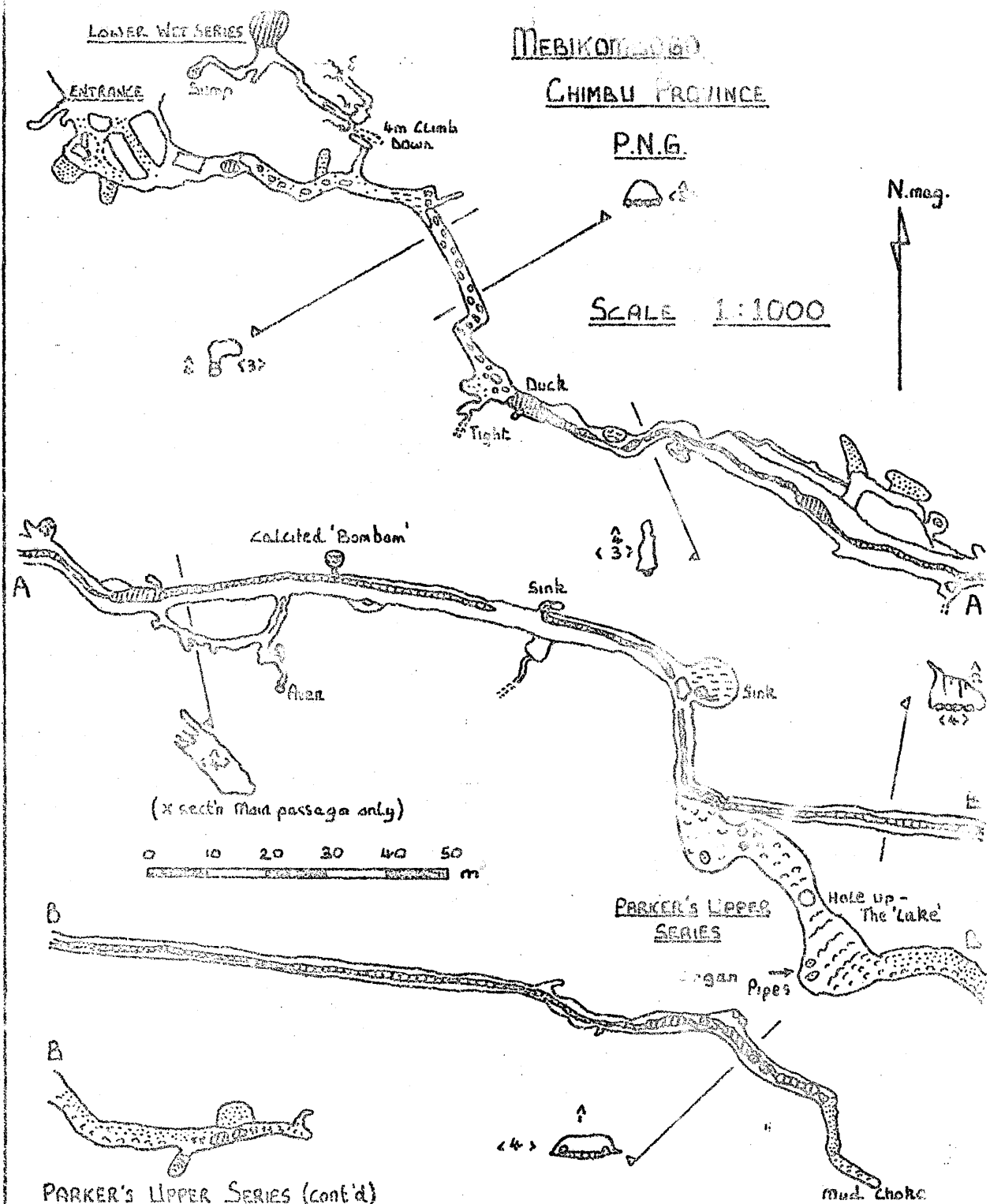
On the bend before the 'corridor' (just before B on the survey), a climb up flowstone for some 25 m brings one into the series described by Parker (1967). It was not difficult to see the effects which he ascribes to earth tremors as one large 'organ pipe' formation has been slit along its entirety and displaced bodily by a few centimetres and healed by recalcification. Large flakes and stalactites littered around are likewise congealed into a frozen chaos. All this can be seen by popping up through the plughole in the lake described by Parker (1967).

REFERENCES

- Parker, F. (1967). Caves of the Porol Ranges between the Chimbu River and Chuave, in the Chimbu District of the Eastern Central Highlands of New Guinea. Communications Occasional Paper No. 2 pp20-27. Sydney Speleo. Soc.
- Wilde, K. A. (1973). Some Caves of the Kundiawa Area. Niugini Caver 1(4): 95-103.

* 29 Bankhouse Road, Sheffield 6, England.

* * *



PARKER'S UPPER SERIES (cont'd)

SURVEYED LENGTH -- 642 m
 APPROX' TOTAL LENGTH -- 740 m
 LOWER WET SERIES -- Gd. 2.
 SIDE PASSAGES -- Gd. 1.
 STANDARD C.R.G. SYMBOLS
 CROSS SECTIONS NOT TO SCALE

SURVEY C.R.G. Gd. 5(b)
 C. YONGE & R.M. BOURKE
 29.12.1975
 DRAWN C. YONGE.

R.A.W.

PRELIMINARY NOTES FROM A BIOSPELEOLOGICAL TRIP TO NEW IRELAND

P. Beron *

The biospeleological work done by the members of the British Speleological Expedition in the Telefomin area (July-November, 1975) has shown that the caves in the highlands harbour a rich fauna including many troglobitic species (species that spend their entire life cycle within the cave). I was interested in comparing this fauna with the fauna of lowland caves, especially the fauna of the numerous caves of the Bismarck Archipelago.

After a short stay in New Britain, I went to New Ireland and over 15 days I visited several points on the east coast and the Lelet Plateau, including 14 caves. This is the preliminary report on this trip. My exploration was greatly aided by the earlier exploration of New Ireland caves by Michael Bourke, Harold Gallasch and other Australian and P.N.G. resident cavers. (See N.C. 2(3)). The plan for my trip was largely based on the information in Niugini Caver. The help of Michael Bourke was extremely valuable. Following his suggestions, I chose for my study the area included in the quadrangle Ratabu Plantation-Sohun-Lamerika Plantation-Kalili Plantation (see map). The following caves were visited:

N30. Kabase Cave, Sohun Village. See description by Gallasch (1974b). This 400 m long cave harboured (24.XI.75) about 700-800 bats (at least 4-5 species including 2-3 flying foxes). About 200 m inside the cave (temp. 26 °C) the following were collected: bats, cave crickets, *Schizomyda* (spider-like arthropods), centipedes, spiders, two species of isopods, worms, diplurans and interesting carabid beetles. Thousands of diplurans (primitive insects) live in the guano.

N24. Tumaduit Cave, Kenapit Plantation. Gallasch (1974c) gives the name as Marabunge-Tumaduit, but my guide Elinda Sakamaen told me that Marabunge is another cave in the same area. He pronounced the name of N24 as Tumadot. It is a sink where a river enters a cave canyon about 15 m high. There are two entrances superimposed. It is possible to enter through the upper entrance, about 10 m above the lower, to walk about 15 m and going to the canyon, to follow it some 20 m more down the wall. The length of the cave has not been established. In the dry part about 30-40 small bats were flying together with about 10 flying foxes and several swiftlets. I collected spiders, isopods, diplurans, small beetles etc.

N22. Umarah and N23. Kiatibu? Kolohoboi Measlang See Gallasch (1974a) for descriptions. Cave temperatures (21.XI.75) were 25.6° and 24.3° respectively. These two caves are situated close together on the same stream. There were several bats, both insect eating ones and flying foxes, inside. Spiders and other arthropods were collected, but the fauna was not very interesting. The engravings near the entrance of Umarah have been damaged in 1974 and 1975 by visitors writing their own names over the ancient engravings.

N21. Belik Cave, Belik Plantation. This was described by Gallasch (1974b). There are many bats, including flying foxes, inside and appreciable amounts of

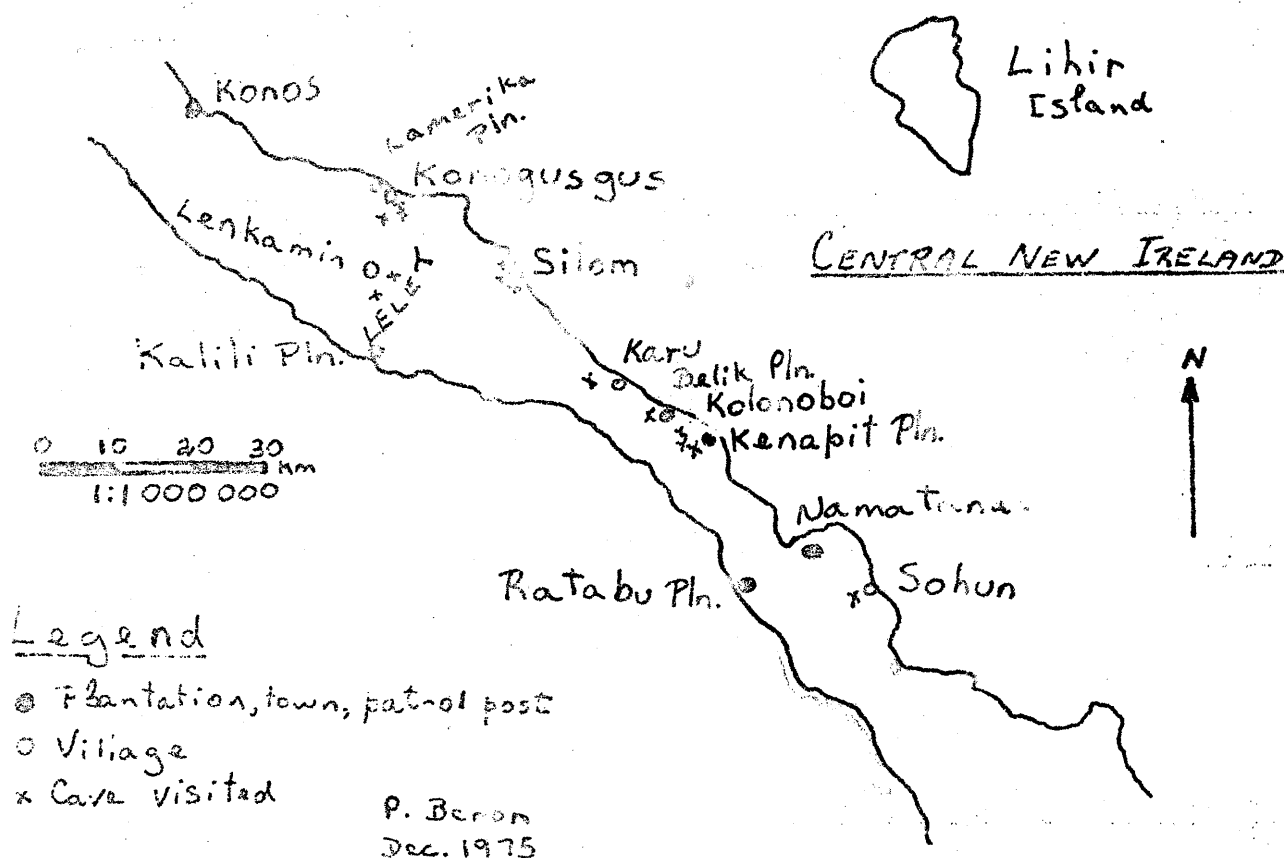
* Zoological Institute, Bld. Ruski 1, Sofia, Bulgaria.

guano. Crayfish were seen in the river. Non-cavernicolous beetles (carabids and catopids) and isopods were collected on the guano and on branches.

N16. Ririe Cave, Karu Village. Gallasch (1974b) describes this cave as 'Karu Cave'. It is situated about 2 km SW of the Kavieng-Namatanai and Karu-Konogogo road junction and is easy to find. My guide insisted that the cave's name is Ririe which is also the area name. The cave is a resurgence with interesting fauna, especially in the dry side passage. The temperature was 25.4° . I collected one carabid beetle (the same as in Kabase Cave?), spiders, several Schizomyda, amblypygids (spider-like arthropods) etc. on the guano. Four or five flying foxes were observed.

N14. Mromon Cave, Silom Village. Bourke and Gallasch (1974) describe this cave under the name 'Silom Cave'. Gallasch (1975) uses the name Moramon. Only spiders were collected. My guide Malua told me that during the war many people used to hide in the cave.

N13. Lemetura Cave, Silom Village. Described by Gallasch (1975). This is situated very near to the edge of the main road and is very easy to visit, but it is not very interesting biologically. Pholcid spiders were collected. The temperature (27.XI.75) was 25.0° .



N34. Minim Cave. This large cave is not included in the list of Bourke and Gallasch (1974). It is situated at about 100 m a.s.l. in a cliff not far from the main road at Lemerika Plantation. There is one big chamber, 50-60 m in diameter and several dark and short passages. The entrance is about 25 m long and 15 m high. More than 4000 bats, including hundreds of flying foxes right up in the ceiling, were observed. There is thick guano covered by thousands of scarabeid and some carabid beetles (like the ones in Kabase Cave) and staphylinid beetles, centipedes, springtails, spiders, crickets etc. The temperature (28.XI.75) was 25.0°.

N32. 'Kamiriba 1 Cave', Konogusgus Village. Wilde (1975) used the name Buangmeriba for this burial cave. Members of the 1975 New Ireland Speleological Expedition visited it and recorded the name Kameribuk (pers. comm. R. M. Bourke). Some 200-300 bats were seen inside, and some were collected. The name of the village is pronounced Kanamusmus, not Konogusgus as it is spelt on maps.

N34. 'Kamiriba 2 Cave', Konogusgus Village. This is a sink in the village gardens. There is one passage 10-12 m long with a 2 m pitch at one end. The passage is up to 2-3 m high and wide. The floor is clay, very like guano. I collected many insects, mites, millipedes (not cave dwellers), a cricket, 2 frogs (there were 7-8 frogs in the cave), and one specimen from the group whip scorpions (Amblypygi). The temperature was 27.1°.

Danmin Cave. This cave has not been previously described or explored by speleologists. It is near the new Konogusgus-Limbin road in a dry valley. A guide should be taken from Konogusgus. A steep slope (about 30 m) in a very large chamber gives access to an underground river. This was followed for some 20 m until the stream forms a lake. A siphon or a passage is possible after the lake. About 50-60 flying foxes and many swiftlets were observed. The terrestrial fauna of the cave seems to be very poor (spiders, harvestmen, millipedes) but in the river I caught two species of white crayfish with small eyes (one large one in the river itself and four small ones in a pool at the river bank). The air and water temperature was the same, 22.3°. It would be interesting to dye the stream in the cave and check the Dalum resurgence near the coast for the dye.

L46. Kanemeraborunda, Lelet Plateau. This was one of the two caves I managed to visit on the Lelet. The altitude is about 850 m. It is a sink with one passage (over 100 m) and two large chambers. The temperature in the first chamber was 18.8° and in the water it was 19.6°. Even during floods, large parts of the chambers remain above the water level. The floor is clay, some guano and rotten logs. I collected one bat, some millipedes, spiders, harvestmen and a spider-like arthropod from the group Uropygi. Several water beetles were collected in the water.

The name of the cave in the Mandak language means 'the hole of the masalai's pigs' (Kanemer = hole; bo = pig; runda = a masalai or ghost).

L63. Ningilau Cave, Lelet Plateau. This cave, situated in the bush 2-2½ hours walk from Lenkamin, is quite big. (About 70 m deep and several hundred metres long. Pers. comm. R. M. Bourke). My guide was Lakuna. As I was alone and without equipment I only saw the first part of the cave to the top of the

first pitch. As it is regularly flooded, this cave seems to be less interesting for biospeleology than Kanemeraborunda. The temperature was 18.9°. Some non-cavernicolous insects and snails were collected.

SUMMARY AND CONCLUSIONS

In a short trip (20.XI - 4.XII.75) 14 caves were visited on New Ireland. Apart from a little collecting done by R. M. Bourke, the first collections of cave fauna from the island were made. Of the caves visited, 12 belong to the coastal limestone (0-200 m a.s.l.) and 2 are on the Lelet Plateau (about 850 m a.s.l.). There is about 6 °C temperature difference between the coastal and plateau caves.

Some of the caves visited (Kabase, Danmin, Ririe, Kanemeraborunda) offer quite favourable environments for troglobites and in other areas would harbour a rich troglobitic fauna. In fact, their fauna is really rich, but does not seem to contain any terrestrial troglobites, unlike the Chimbu and Telefomin cave fauna. The most interesting water fauna was found in Danmin Cave. Some of the caves visited (Minim, Kabase) contain large bat colonies which are amongst the most important known in P.N.G.

The caves visited represent a very small proportion of caves reported from New Ireland which number many hundreds. They are however considered to be enough to give some idea about the cave fauna of the east coast and, to some degree, the Lelet Plateau.

A move should be made by the government to urgently protect the engravings in Umarah Cave which have been partly damaged by vandals.

The author wishes to thank several persons who made his travel pleasant and as fruitful as possible: Mr and Mrs Dove Larken (Lamerika Plantation), Mr and Mrs Ray Frost (Kalili Plantation), Pastor Patemos Togan (Kolonoboi Mission), the kind and helpful people in the villages visited (Barok and Mandak) and last, but not least, Mr Michael Bourke.

REFERENCES

- Bourke, R. M. and Gallasch, H. (1974). Caves of the New Ireland District. Niugini Caver 2(3): 193-205.
- Gallasch, H. (1974a). Cave Giants of New Ireland? Niugini Caver 2(2): 160-162.
- Gallasch, H. (1974b). Caves of the Namatanai Area of New Ireland. Niugini Caver 2(3): 222-228.
- Gallasch, H. (1974c). Stori Bilong Tumbuna - Cave Legends from New Ireland. Niugini Caver 2(3): 206-207.
- Gallasch, H. (1975). A Further Two Caves from New Ireland. Niugini Caver 3(4): 139.
- Wilde, K. A. (1975). More Caves of the Lelet Plateau - New Ireland. Niugini Caver 3(1): 6-12.

* * *

A SOLUTION CAVE IN VOLCANOLITHIC ARENITE - LIHIR ISLAND

H. Gallasch *

On a visit to Lihir Island, some 60 km northeast of New Ireland, mention was made of a cave near the airstrip. A 10 minute drive through kangaroo grass-eucalypt savannah brought us to the top of a doline like depression at the bottom of which was a deep ravine. The cave is near Londolovit Plantation on the northeast side of the island. A natural bridge of limestone led across to the other side of the ravine. After crossing and following the crest downstream for several hundred metres, a place was found where it was possible to climb down the side to the stream bed. Near the crest, limestone strata was crossed but the rest of the gully and the stream bed had developed in a weathered basaltic like material. A little further downstream the creek went underground through an impressive vegetation encrusted arch. Massive stalactites hung from the ceiling 17 m above the stream bed (Diagram 2).

The first chamber, 30 m long by 9.5 m wide, led to a pile of boulders over which the stream cascaded into a deep pool (Diagram 1). This filled the whole width of the cavern and was the furthest extent of all previous exploration. However it was found possible to wade through the neck deep, chilling water. After 10 m the pool had shallowed and the stream skirted an 18 m high bat filled chamber before the passage again narrowed. Some 30 m further on the narrow high passage opened out on the crest of a waterfall. The vertical fall was estimated to be about 15 m. Here the cavern again opened to a large chamber of total height of perhaps 30 m, with the stream exit through a passage opposite the waterfall. Further progress would only be possible by rope over the lip of the fall.

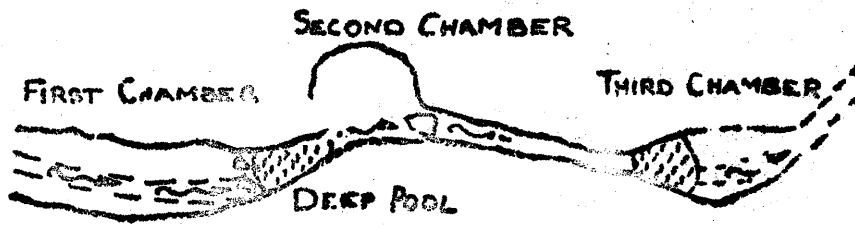
Although stalactite formation was noted in several places, very little limestone, apart from occasional fallen flowstone, was noted. This led to a closer examination of the entrance profile (Diagram 1, vertical section). Apart from the surface strata of recent limestone, the total depth of the cave had developed in layered strata of apparently volcanic type rock. Interbedded with layers of a fine tuffaceous material were beds of a weathered sandy matrix containing numerous rounded boulders. These boulders, from several to 80 cm or more in diameter, appeared to be weathering out from a soft background matrix. Sections of a boulder were examined by Mr. J. Webb at the University of Queensland and identified as volcanolithic arenite. This was described as follows: "It is composed largely of rhyolitic glass fragments and dust which have devitrified, obscuring the grain boundaries and giving a uniform quartz-feldspathic groundmass. This contains small amounts of chlorite, biotite, and epidote, and up to 10 per cent of augite and hornblende, some as euhedral crystals. Also present are large numbers of forams and calcite fragments (10 per cent of rock). Barry Fordham, who is studying Papuan forams, has identified the following species from the sample: Globorotalia miocenica, G. coltrata, G. tumida, Globigerina bulloides, Globigerinoides trilobus, Orbulina universa, O. suturalis and Sphaeroidinalopsis subdehiscens.

These give the rock a latest Miocene to early Pliocene age (N19-N20). This is somewhat older than the Quaternary age assigned to the volcanics of

* D.P.I., Keravat, E.N.B., P.N.G.

32

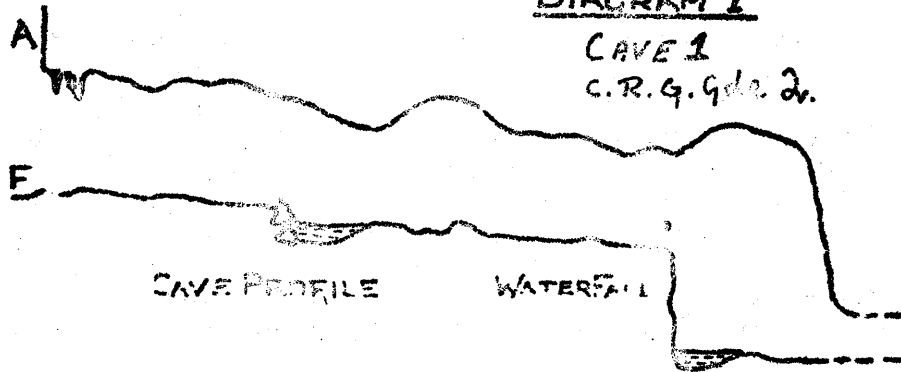
LIHIR CAVE
SCALE 0 10 20 30 M.



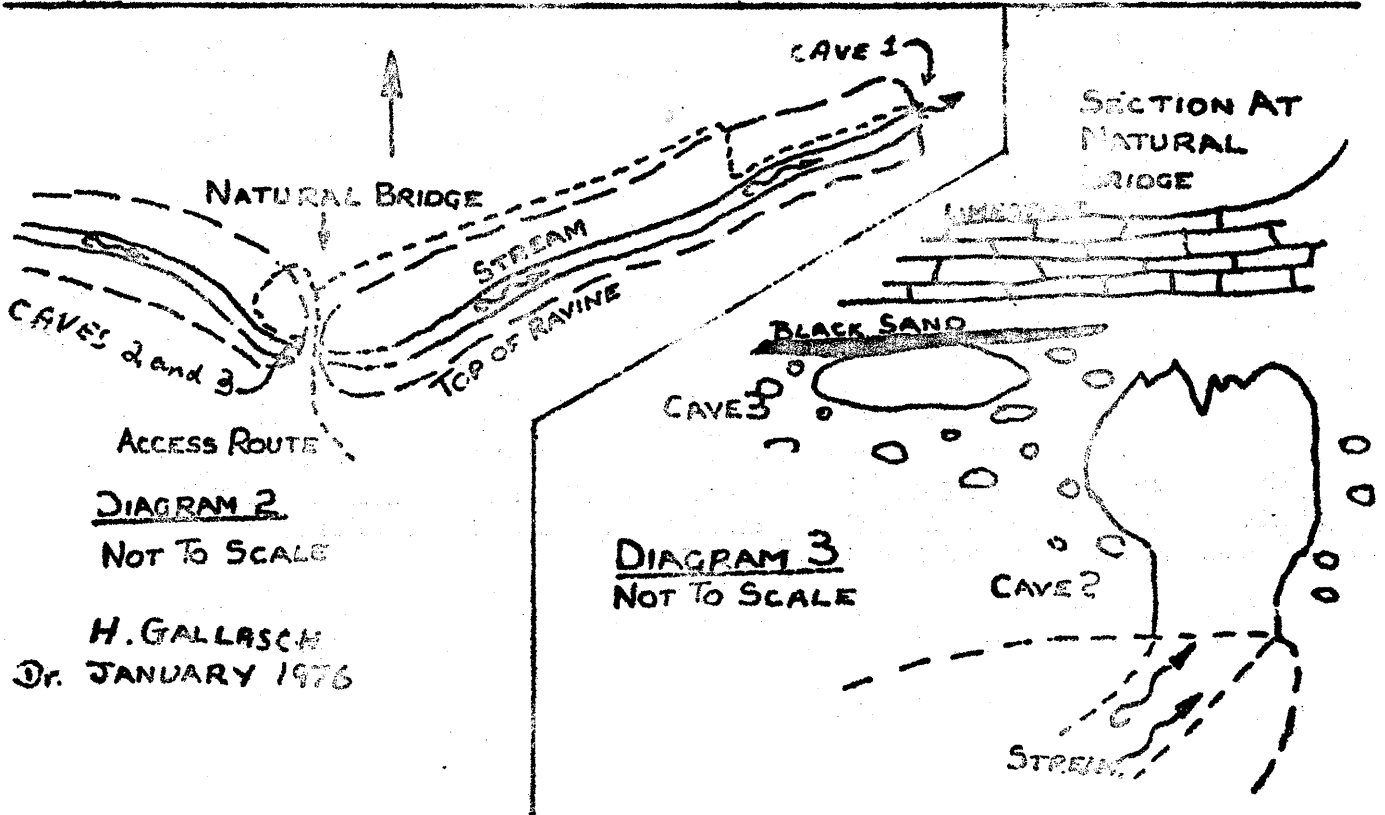
CAVE PLAN.
Surv. Sept. 1974

DIAGRAM 1

CAVE 1
C.R.G. gde 2v.



PROFILE
VERTICAL SCALE
0 2 4



Lihir Island on the 1972 geological map of P.N.G. The presence of the forams means the rock was undoubtedly deposited under marine conditions close to a volcanic terrain. It is relatively fresh, much of the glass having only just devitrified."

The cave is said to emerge on the coast, about 1.2 km away, at sea level. The entrance at stream level would be about 35-40 a.s.l.

Immediately upstream from the limestone bridge, a path leads down the side of the gully to the stream (Diagram 2). Two caves are accessible from here. The first is a high cavern through which the stream flows under the natural bridge. This is about 25 m long while the bridge above is much narrower. Although limestone was not found in this cave, stalactites hang from the ceiling of the arch. On a level with the ceiling, a second cave has developed in the arenite conglomerate (Diagram 3). Here again the strata contains various sized rounded volcanolithic boulders in a soft weathered matrix. Near the roof is a narrow layer of black sand. The depth of this opening is only 3 m.

Due to the apparently shallow depth of limestone on Lihir, there is little likelihood of true limestone caves being found. However the possibility exists of additional caves in the volcanic arenite and tuff deposits and there could be caves of direct volcanic origin.

- Strata in Diagram 1.
- A. Limestone
 - B. Soft tuffaceous arenite with boulders of hard volcanolithic arenite
 - C. Sandy tuffaceous material
 - D. As for B
 - E. As for C
 - F. As for B

* * *

CORRECTIONS NIUGINI CAVER 3(4)

There were a number of mistakes in the last number of N.C., most of which occurred because of difficulties experienced with the paper offset masters used. Corrections are as follows:

- p106 para.2 line 19. "... a chamber 900 by 500 by 450 feet ..."
- p107 para.1 line 3; para.2 line 4; para.3 line 3. Selminum Tem.
- p107 para.4 line 1. "... and 12 issues."
- p107 para.4 lines 9 and 10. National Capital District, not Province.
- p110 para.1 line 1. "... and found a couple of stream sinks which were descended for c.150 m to sumps".
- p110 para.2. The heading is Fugulil De Bom, not Aiyung De Bom.
- p112 para.5 line 3. The grass is not sub-alpine as the author stated.
- p138A. The scale on the map is 1:1000, i.e. 1 cm = 10 m.
- p143. The second reference should read:
Davies, H. L. (1973). 1:250 000 Geological Series - Explanatory Notes. Gazelle Peninsula. New Britain. Sheet SB/56-2
International Index. Bur. Min. Res. Geol. Geophysics. Canberra.

* * *

SPELEOLOGICAL PROSPECTS IN SMALLER ISLANDS OF THE MANUS PROVINCE

G. Francis *

This note follows the study of all available air photographs of islands in the province and consultation with villagers from those islands for which there is no coverage. There are three main types of outlying island in the province.

A. High Volcanic Islands. Islands of this type (Lou, Baluan, Rambutyo) are composed of extrusive volcanics, mainly Quaternary in age. They range from fifty to several hundred metres in elevation, and some like Rambutyo have raised reefs. The latter is a possible cave area (see map).

B. Raised Coral Islands. The only example in the province is Nauna, which is 100 m high. Such islands may contain extensive systems of phreatic caves. A number of examples from the Trobriands have been described by Ollier and Holdsworth (1968, 1969, 1970). Thus Nauna is probably the best speleological prospect among the outlying islands.

C. Low Coral Islands. These are low lying, usually extending only 2-4 m above mean high water level. Some are composed of coral, like Ponam and other islands along the northern barrier reef. Elsewhere the low islands are cays of unconsolidated coral sand, like Bipi. Even if the island is solid coral, there is still no prospect of finding penetrable caves. Coral of late Pleistocene to Holocene age is highly porous, with many large primary voids. Consequently it is so prone to collapse that it is unlikely to support sizeable caves. Most extensive caves in raised coral islands have developed in limestone which has been lithified by the precipitation of carbonate in primary voids, where solution takes place mainly along joints of faults.

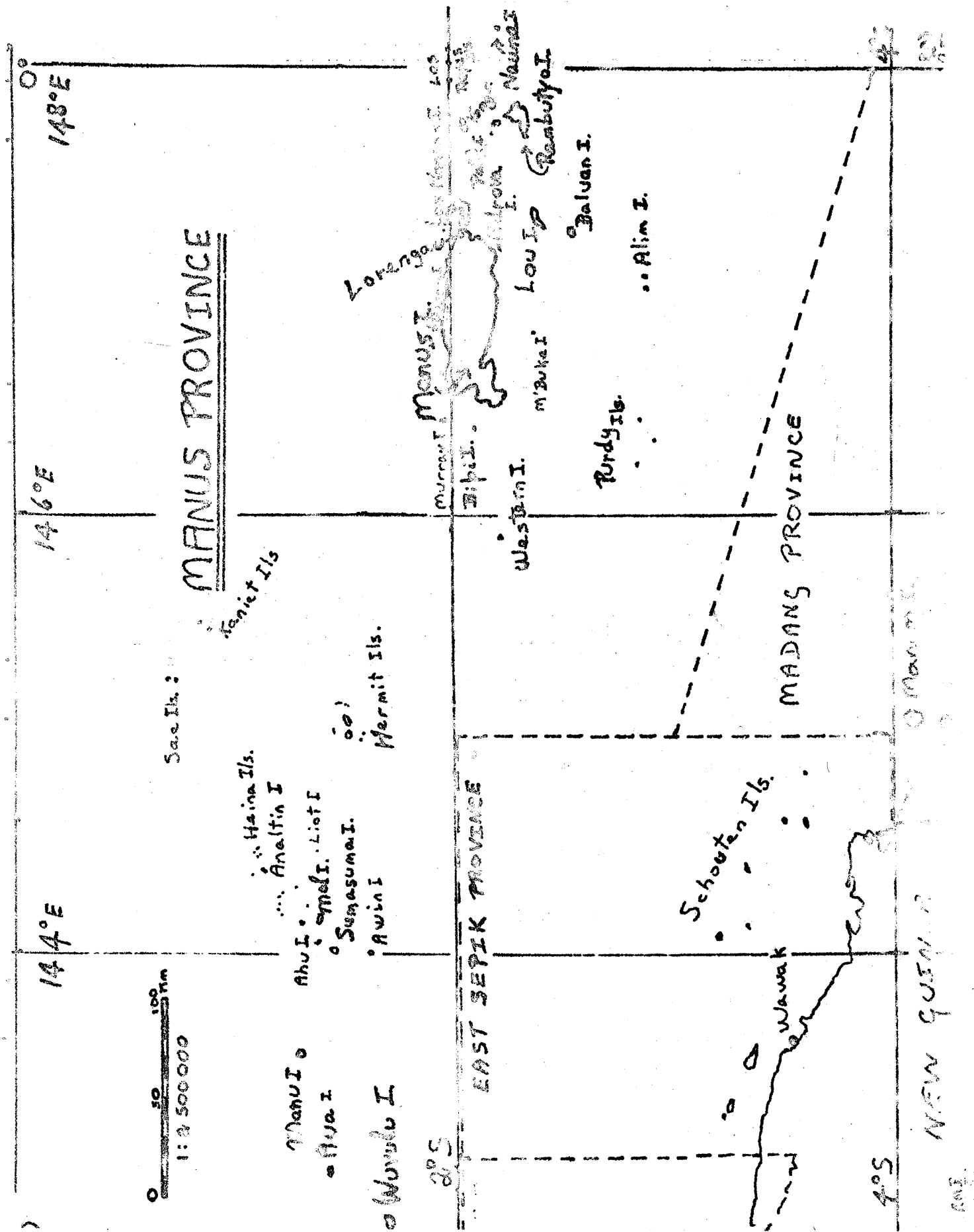
Furthermore, nearly all caves in raised coral islands are of phreatic origin, formed at or below the water table. Often these caves have no penetrable surface connection until they are partially unroofed by collapse, or exposed by back-wearing of the reef margins. As the water table is controlled by sea level, and usually slopes gently upwards towards the centre of the island, any caves now forming in low coral islands are water filled. It is only after the islands have been raised and the caves partially drained of phreatic water, that there is a chance of finding penetrable systems. Small caves are present on Ndrova Island, which has a core of Naringel Limestone extending 15-20 m above sea level. This is probably the minimum size island likely to have caves. Larger systems will only be found in higher islands like Nauna.

REFERENCES

- Ollier, C. D. and Holdsworth, D. K. (1968). Caves of Kiriwina, Trobriand Islands, Papua. Helictite 6(4): 63-72.
- Ollier, C. D. and Holdsworth, D. K. (1969). Caves of Vakuta, Trobriand Islands, Papua. Helictite 7(3): 50-61.
- Ollier, C. D. and Holdsworth, D. K. (1970). Some Caves of Kitava, Trobriand Islands, Papua. Helictite 8(2): 29-38.

* 29 Yellambie Street, Yowie Bay, N.S.W. 2228. Australia.

* * *



A TRIP TO A CAVE ON THE SNAKE RIVER, MOROBE PROVINCE

Frank Salt *

The following is an account of a trip in November 1975 to a cave near Marpos Village on the Snake River in the Morobe Province. An American, Paul Wotjkowski, and I made up the party.

The cave consists of a rift entrance giving access to a low phreatic passage which, after a few metres, opens out into a fairly large chamber with some attractive large formations. Going down the chamber for 50 m or so, we came across a small hole in the left hand wall out of which came the lovely sound of water. A short low passage brought us to the head of a pitch of about 8 m. We quickly descended this into a fantastic stream passage in a white limestone that was almost like marble. Near the base of the ladder, the stream fell down a shaft of 5-6 m with a force strong enough to make the climb down very difficult. However, a rift opening half a metre or so from the bottom of the ladder gave access to a beautifully decorated dry oxbow which bypassed the wet pitch and the pool below. From there the stream flowed at right angles through a series of rifts, finally roaring through a series of cracks too small to permit entry. A small tube gave further access until it developed into a rift dropping down into still green water. This I would say was the level of the local river and we had reached the water table.

Going back upstream past the ladder, we passed up a fantastic stream passage with small dry oxbows here and there until the way was blocked by a sump. A prod through with my feet revealed that it was only a metre or so long and easily dived. As this was Paul's first caving trip, I expected that he might draw a line at the sump, but he dived through without comment or hesitation, thus elevating my opinion of Americans! The stream passage continued for another 30 m or so. The flow of water divides, part coming out of a small rathole lined with sharp rocks and the other half coming out of a narrow, silted sump against one wall of the chamber.

With no way on we retreated back through the sump and up the ladder into the chamber in the upper entrance series. We pushed along this for a few minutes before the passage narrowed and then opened out on the edge of a 5-6 m pitch down which thundered our old friend the stream again. (This flowed out of a passage opposite us at the head of the pitch.) We laddered down the pitch into a large pool under the weight of the waterfall. We pushed the stream for only a few metres to where the flow, having split in two, sumped in a big deep rift and flowed down a small rathole too small to permit entry of both a body and the water. These were almost certainly the upstream side of the lower stream passage sump.

Returning up the pitch, we traversed across the shaft and into the stream passage on the other side and pushed on up a large and beautiful gallery. The passage was nicely decorated and a number of large dry passages were noted opening off at the sides. We pushed on to where the stream came up from a deep sump. A passage over this gave access to a couple of nicely decorated boulder

* P.O. Box 2, Bulolo, Morobe Province, P.N.G.

chambers before it dropped down into the stream once more. The passage continued getting lower until it was a low crawl and the roof met the water. However this turned out to be only a low duck and was passed by an easy dive to give access to a second duck after a few metres. After this the stream passage returned to a comfortable size and we pressed on at high speed to where the stream came out of a jumble of sharp boulders. From here a crawl down a narrow rift enabled us to get up into two large, very shattered, boulder filled chambers before dropping back into the stream passage again. A short waterfall was easily climbed and the stream passage, smaller in size but still carrying its full load of water, was pushed for several hundred metres to a large, dark chamber. The air here was still and the stream came up at an angle of about 15-20° out of a narrow muddy sump. We probed around but no obvious way on could be found. In view of the late hour (we had been underground for over six hours), we moved out of the cave taking no more than a quick glance at the numerous side passages. No attempt was made to survey the cave but we estimated from pacing that we had covered nearly 2000 m of passage.

From the entrance Paul walked down to the river bed and about 400 m below the cave found several large cracks in the bed of the river out of which came a large volume of water. This was undoubtedly the stream from the cave again. Having found where it comes out, all we have to do now is to find where it goes in, and find a bit more cave to connect the two ends.

* * *

SPELEO PERSONALITY - MICHAEL BOURKE

Mike Bourke is about to leave Papua New Guinea. One wonders which country will be next to benefit from his varied speleological abilities. Many cavers manage to leave behind a few footprints when they move on. Amongst other things Mike leaves behind caving journals.

He started caving in 1967, aged 19, with the University of Queensland Speleological Society while in his second year of an Agricultural Science Degree. His confirmation came the same Christmas when, while on a bushwalking trip to Tasmania, he spent three days underground in Exit Cave. The next 2½ years set the pattern of Mike's diversified caving - active weekend caving with U.Q.S.S., major trips, a conservation campaign, biological collection, society organization, and publication. Mike caved extensively at Texas and Mt. Etna in Queensland and had two major trips to Camooweal. To date he has caved in nearly all Queensland caving areas. He was heavily involved in the campaign to save the Texas Caves and Mt Etna Caves and later was to be the moving force in getting the book Mount Etna Caves underway. In 1968, while secretary of U.Q.S.S., he resurrected the society's newsletter, Down Under. Apart from Queensland and Tasmania, Mike has caved in Australia at Buchan, Yarrangobilly, Cooleman, Kempsey and Ashford. He has visited caves in Indonesia and Malaysia as well.

After graduating in 1969 he eventually took up a didiman's position with D.A.S.F. at Keravat near Rabaul. He has worked on tropical food crops ever since. He is close to finishing his Master's Degree at the U.P.N.G. and has published several papers on his work. At Keravat Mike suffered the usual Papua

New Guinea speleo-malaise - no one keen to go caving with. Despite a lapse in late 1970 when he declared, '... one last major trip - and that will be the end', Mike managed over the years to develop contacts throughout Papua New Guinea, and generate enough local enthusiasm to maintain steady caving. Most of his activity has been in New Britain and New Ireland, but he has also caved in the Southern and Eastern Highlands, at Javarere, the Chimbu, the Trobriands, Madang and Manus. In 1971 he undertook a 10 day solo reconnaissance trip to East New Britain in preparation for the Ora expedition.

The last six years in Papua New Guinea have involved Mike in almost as many expeditions. He led the 1972/3 six member U.Q.S.S. expedition to Ora Cave in New Britain and participated in the large '72 Muller expedition. A year later he spent two weeks as a 'consulting caver' on a Geological Survey hydrological investigation for a hydroelectric scheme in the Poroma area of the Southern Highlands. In 1975 he was instigator and joint leader of the month long New Ireland expedition to the Lelet Plateau.

Shaggy, bespectacled, but neatly dressed, Mike's expedition organizing abilities are not at first sight apparent. His quiet, tolerant, but successful leadership often gives more than a hint that he is the eldest of a family of eleven, used to the responsibility of organizing a large group.

Mike says that he has moved away from conservation and biological work towards cave exploration and documentation - reflecting, as he says, the different needs in Australia and Papua New Guinea. At the beginning of 1973 he produced the first issue of Niugini Caver and is now editing the fourth volume. The journal quickly reached a high standard, particularly since Mike's marriage to Jean in late 1973. Jean Bourke has been closely associated with its production. Mike has regretted not being able to form a speleological society in Papua New Guinea, but one can believe that the unifying effect of Niugini Caver has had virtually the same effect, providing a focus both nationally and internationally. As well as editing N.C., Mike has been preparing a bibliography of Papua New Guinea caves, and has also published numerous articles on P.N.G. in N.C., the ASF Newsletter and other magazines.

Mike enjoys caving - both vertical and horizontal. Competence in technical caving is very important to him. He enjoys the opportunity for documentation and publication that speleology provides, and prolifically corresponds with cavers everywhere. In particular, he enjoys the gregarious nature of caving trips.

Though Mike and Jean don't know yet to which country they will be moving, one can discount those countries which do not have an adequate supply of karst. But it will be hard for them to beat the view of the 750 m limestone cliffs in the Baining Mountains that they have from their living room windows at Keravat.

A. L. Brown

* * *

DO YOU KNOW - that more than 40% of the U.S.S.R. has been claimed to consist of karstic limestones, gypsums and conglomerate and that caves up to 26 km long and 360 m deep exist?

* * *

THE NEW CONTRIBUTORS

Petar Beron is a Bulgarian biospeleologist who has been caving and studying cave life since 1955. He came to P.N.G. last year to participate in the British expedition. As well as caving on the expedition, he visited caves and collected cave fauna in the Chimbu and on New Britain and New Ireland. Apart from Bulgaria and P.N.G., Petar has caved in France, Rumania, Yugoslavia, Czechoslovakia, Greece, Turkey, Syria, Iran, Hungary and England. He gained his Ph.D. last year studying Bulgarian cave fauna.

Dave Brook has many years of caving behind him and is a member of the University of Leeds Speleological Association. He was the leader of the British Speleological Expedition to P.N.G. in 1975. Amongst other things, he led an expedition to the Pierre St. Martin in France.

Phil Chapman came to P.N.G. as one of the biologists for the British expedition in 1975. He spent much of his time on the trip collecting specimens. As well as P.N.G. and England, he has caved in Vonezuela when he was the biologist on the 1973 British expedition there.

Joe Jennings is the Professorial Fellow in Geomorphology at the Australian National University, a member of the Canberra Speleological Society, and a former president of the Australian Speleological Federation. He is a distinguished karst geomorphologist and is the author of a book Karst as well as numerous papers.

Ernst Löffler is an Australian geomorphologist who has done extensive field work in New Guinea. He is currently writing a book on the geomorphology of New Guinea.

Chris Puqsley is a member of the Sheffield University Speleological Society who came to P.N.G. for the British expedition. He has also caved in the Chimbu and Eastern Highlands. Apart from the U.K. and P.N.G., Chris has caved in Morocco, Bulgaria and France. His particular interest is cave biology.

Frank Salt is an ex British caver with many years caving behind him. In 1963-64 he was involved in the proposed 1965 British Expedition to P.N.G. that turned into the 1965 Australian Star Mountains Expedition. Since arriving here in 1975, he has done some caving in the Morobe Province.

Tony White is a member of the University of Leeds Speleological Association who came to P.N.G. for the British expedition and who stayed for some caving in the Chimbu. Other overseas trips have been to France.

Chas Yonge is also a member of the Sheffield University Speleological Society who came to P.N.G. to participate in the British expedition and stayed for some caving in the Chimbu. He has caved all around Britain and also in France, Austria, Canada, Bulgaria and Yugoslavia.

R.M.B.

* * *

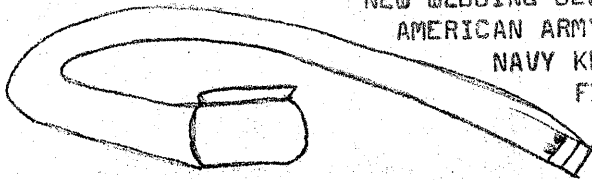
NEW GUINEA DISPOSALS

Ph. 92 1263

P.O. Box 71, RABAU.
PAPUA NEW GUINEA.

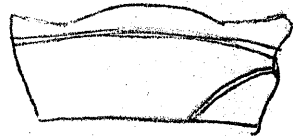
Ph. 92 7131 ab.

NEW WEBBING BELTS 1½",
AMERICAN ARMY, WHITE, BLACK,
NAVY KHAKI K2.50
FITS UP TO 42"



AMERICAN GI CAPS
USED K2.50

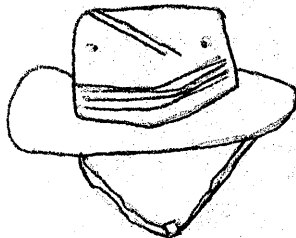
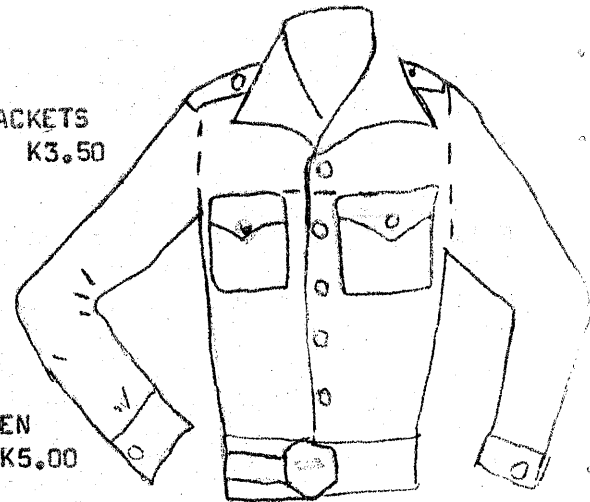
BATTLE DRESS JACKETS
GOOD CONDITION K3.50



FORAGE CAPS
NEW K1.00

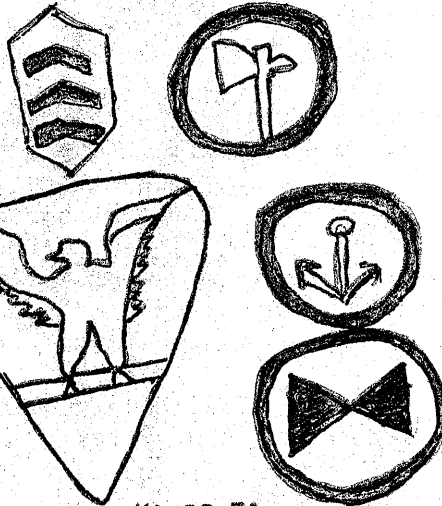
NEW DENIM JACKETS
OLIVE WITH BRASS
BUTTONS K10.50

USED NAVY DRILL
KHAKI OR JUNGLE GREEN
ZIP FRONT K5.50 - K5.00



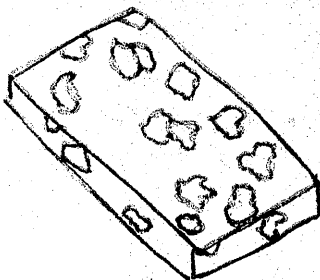
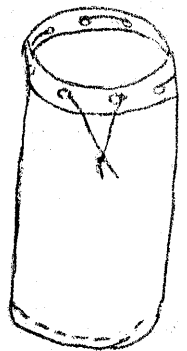
ARMY HATS
1ST GRADE K7.50
2ND GRADE K6.50
OR REPAIRS
K5.00

SHOULDER PATCHES



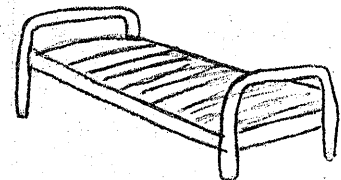
K1.00 EA.

KIT BAGS
WHITE NEW K3.50
WHITE USED K2.75
JUNGLE GREEN USED
BUT GOOD K5.50
BROWN K3.50



NEW FOAM MATTRESSES
4' 6" x 6' 3" x 4" K48.50
2' 6" x 6' 3" x 4" K31.50
2' 6" x 6' 3" x 3" K25.50
PRINTED COTTON COVERS

PILLOWS
NEW FOAM
K4.50
PRINTED COVER



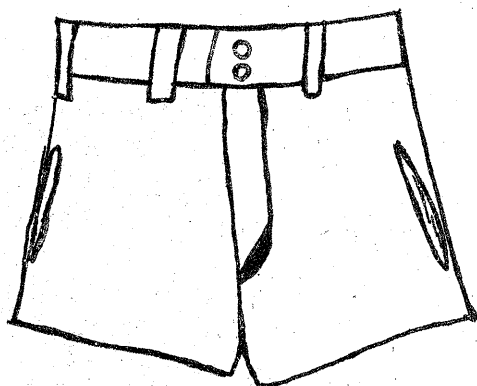
STEEL BEDS 2' 6" x 6' 3"
GOOD USED CONDITION
K27.50 - K30.00

NEW GUINEA DISPOSALS

Ph. 92 1263

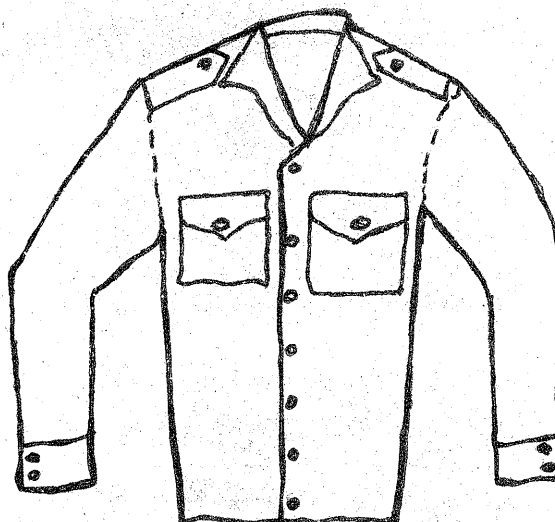
P.O. Box 71, RABAU.
PAPUA NEW GUINEA.

Ph. 92 7131 ah.



NEW ARMY SHORTS
NAVY WHITE KHAKI JUNGLE GREEN
SIZE 27" - 40" K3.50
USED K1.50 - K2.50

CIVILIAN SHORTS
SIZE 20" - 26" 60t - K1.50
27" - 40" K1.95 - K3.50

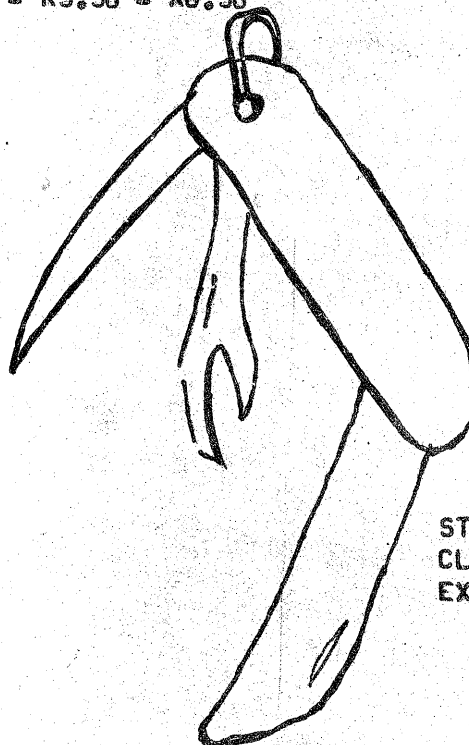


ARMY GREEN SHIRTS. NEW CONDITION K8.50
GOOD CONDITION K7.50 - K6.50; USED CONDITION K5.50
SIZES 12" - 17½" AS AVAILABLE
GERMAN AND AMERICAN SHIRTS ALSO- ALL SIZES
K4.50 - K5.50 - K6.50

LEATHER BOOTS EX ARMY
REPAIRED AS REQUIRED



ALL SIZES
K8.50 - K9.50



STAINLESS STEEL
CLASP KNIVES
EX ARMY K1.50

NEW GUINEA DISPOSALS

Ph. 92 1263

P.O. Box 71, Rabaul.
PAPUA NEW GUINEA.

Ph. 92 7131 ah.

ARMY, NAVY, AIR FORCE MILITARY SURPLUS
GENERAL MERCHANDISE
Ex. Aust. Army
Jungle Green Shirts
New/used condition
Sizes 11" - 17½"
K8.50, K7.50, K6.50

Knife Fork Spoon
3-piece combination
set. Aluminium alloy
non-rusting 65t set
used condition

Army Steel Dixie
Good/used condition
95t

Khaki Webbing Haversack
13" x 13" x 4"
New K6.50

Canvas Type as above
Plus 2 Front Pockets
'D' Rings for Tying on
K6.50 new

Jungle Green Cotton Trousers
Thigh Pockets for extra item
storing
Size 26" - 34"
K2.00, K2.50, K3.00

Army Slouch Hat
Good condition Puggaree
K6.50, K7.50

Cotton Drill Shorts
Used and New
Sizes 24" - 42"
Khaki, Navy, J/Green, White
K1.50, K2.00, K2.50, K3.00

Black Leather Ex-Army Boots
Repaired as Necessary
K9.50, K8.50

Vinyl Poncho
New K5.50

303 Bayonette
As new with Scabbard K13.95
Without Scabbard K11.95

Jungle Green Basic Pouch
New 65t

Webbing Straps
Large Assortment Blanket
Straps, Padded Harness,
Spiders, All Complete
50t to K1.50
Good/used and some new
condition

Webbing Belts
Australian Army K1.80
U.S. Pistol Type K1.50
Good/used condition

Nylon Mosquito Nets
Ex Army 72" x 36" x 36"
drop
As new K7.50

Nylon Mosquito Net
36" x 72" x 72" drop
New K3.50

WE MANUFACTURE TARPAULINS AND HAVE A REPAIR SERVICE

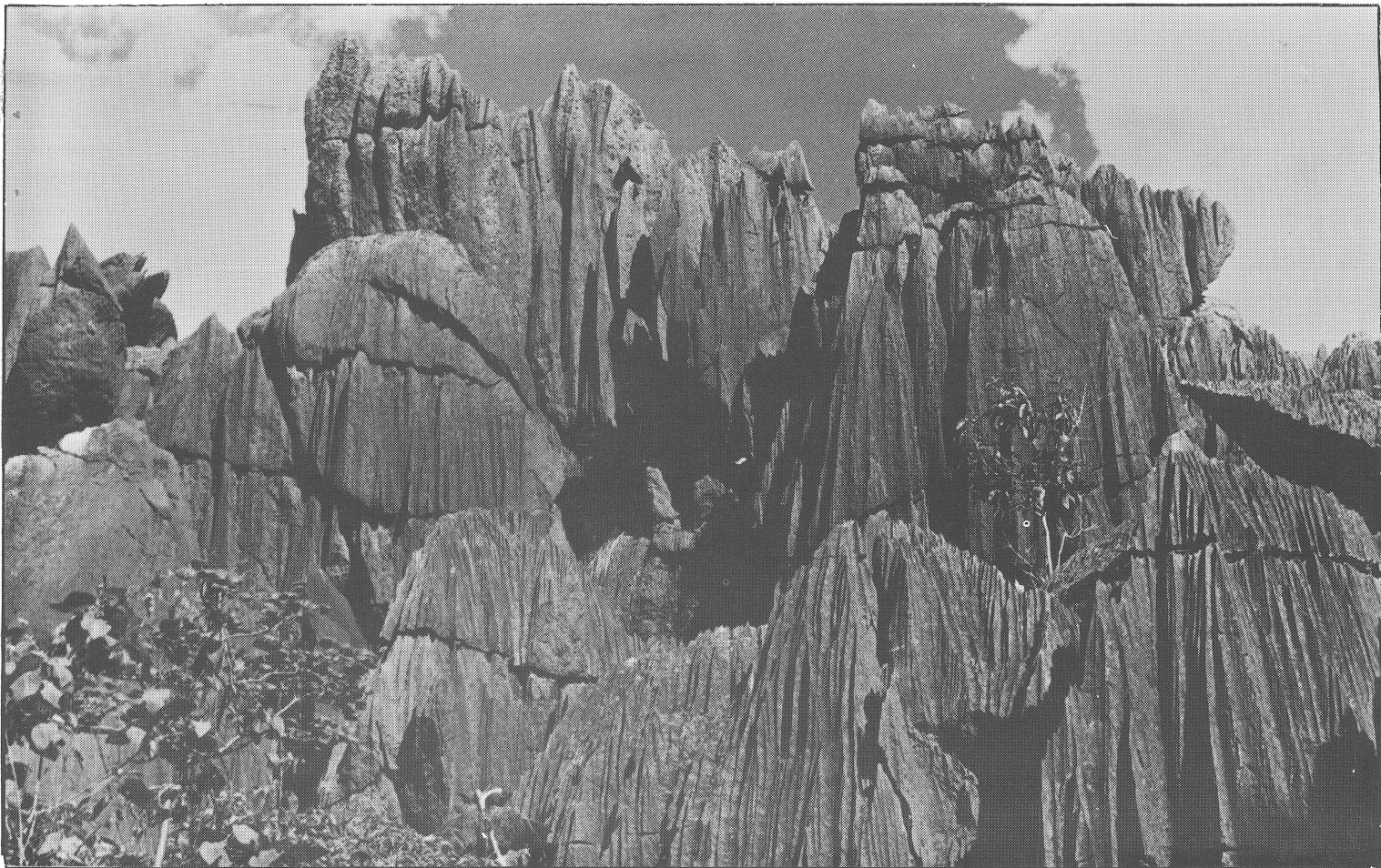
PRICES QUOTED DO NOT INCLUDE POSTAGE OR AIRFREIGHT

WRITE AND ASK FOR DETAILS OF OUR FULL DISPOSAL RANGE

* * *

BUSHGEAR PTY. LTD.

Suppliers of Cave, Bush, Snow, Ice, Rock, Canoe,
Orienteering & Cross—Country Ski Gear.



Mail orders supplied interstate or overseas.

Please send 50c for Catalogue.

46 Hardware Street, Melbourne, phone (303) 67 3354