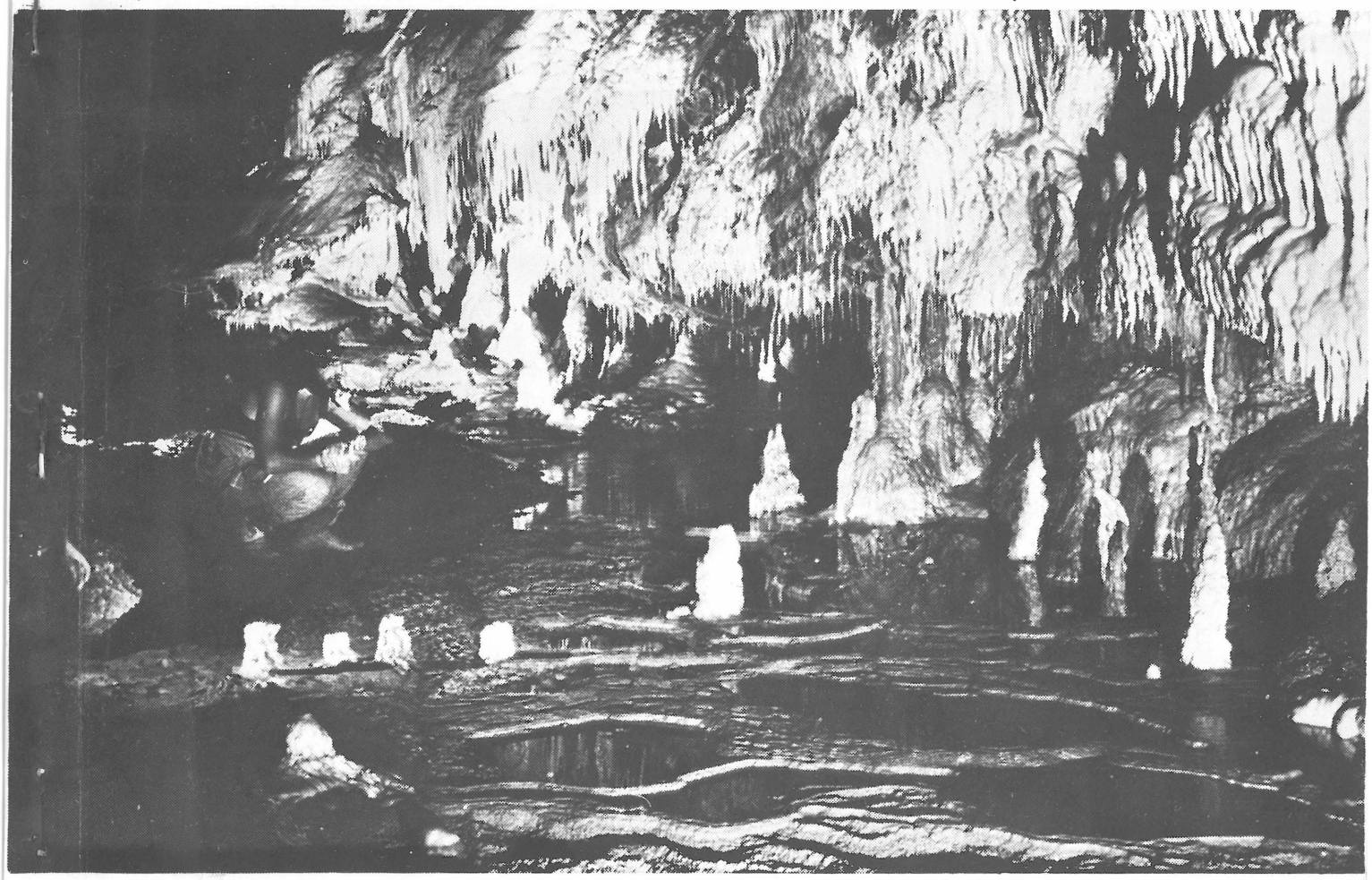
NIUGINI CAVER

NEWSLETTER OF THE PAPUA NEW GUINEA CAVE EXPLORATION GROUP

Volume 4 Number 2 **June, 1976**



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

Maps Jim Farnworth

Typist Jean Bourke

Production of Last Number Michael and Jean Bourke, Jim Farnworth, Tim Sprod, Hal Gallasch, Japeth Morris, Anna Majdanska, and David Smith.

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Cover Photograph. Part of "Passage of a Thousand Wounds" in Irukunguai (Irapui) in the Chimbu. This passage is exceptionally beautiful and probably makes Irukunguai the best decorated of the recorded caves in the country. The passage is named for the numerous iron oxide deposits that surround small stalagmites on the floor. Note that the figure (Kevan Wilde) is bootless. This is the usual practice in this section to protect the delicate rimstone and crystal floor. (See N.C. 1(3):70-74 for a description of the cave.)

Photo by R. M. Bourke.

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TOKTOK BILONG EDITA - GRAUN BILONG HUSAT?

Having done most of my P.N.G. caving in the lowlands and in remote parts of the Southern Highlands, I was quite surprised when I encountered a minor cave access problem in the highlands last year. The question of access to caves rarely arises in the lowlands, aside from Bougainville. However in the highlands it is an aspect of caving sometimes calling for considerable diplomacy and patience. It does no harm to remember in all areas that cavers have no rights when it comes to access and prior consultation with the "papa bilong graun" is wise. The only problem with this little homily is the need to find the "papa tru"!

On the subject of access: In the highlands it is the practice of the cave owner to charge an entrance fee to visitors. This practice has in fact been encouraged by certain cavers, provided the fee remains moderate. For this they have come in for criticism from other cavers, mainly those from overseas, who have felt that a caver has every right to visit any cave for nothing. The practice seems to have gotten somewhat out of hand in places, with villagers asking such exorbitant fees as K5 per head per cave. At this rate caving becomes an expensive sport, especially when exploring a large number of minor caves!

My feeling on the subject is that a reasonable fee, say K2 per party per major cave, is fair enough where this is what the villagers expect. This seems to be much of the highlands I gather. However exorbitant fees should not be paid. If the owner persists with the demand, the caver would do better to decline to visit the cave. Some careful "tok gris" on the relative magnitude of caves in other areas or an explanation as to the difference between a one up tourist caver and a regular caver may be useful in converting the owner to your frame of mind. Future cavers will not thank us for encouraging high fees.

.....

On page 81 of this issue there is a list of P.N.G. subscribers to this issue of N.C. Just as when the last such list was published in N.C. 2(4), it is noted that there is a concentration of cavers in Port Moresby, on the Gazelle, and in the highlands. At that stage I suggested that perhaps another go at more formal groups should be encouraged. I took the issue up with various active cavers in all three centres, but without much positive response. The scattered nature of the highland cavers and the future plans for departure of many of those on the Gazelle seem to preclude any formal groups in these areas. However, I remain convinced that a viable group in Port Moresby could once again be established.

The interest shown by Y.H.A. parties in Javavere is an indication of the potential interest in the city. The problem remains that Port Moresby is isolated from major caving areas, but this problem was overcome by the cavers in the sixties with their charters to the highlands. A formal caving group in the capital city may offer the best hope for local speleology in P.N.G. in future years. It would also provide a home for the library and modest finance and equipment inherited from the PMSS, the GCC, and the PNGCEG.

R.M.B.

* * *

RECOVERING THE FOSSILS FROM SELMINUM TEM

R. Wells *

Dr. Wells was invited to join last year's British expedition to collect fossils (some vertebrae and ribs) embedded in the walls in Selminum Tem Cave. The following is an extract from a letter he wrote home on his return to the Tabubil mining camp. It is reprinted with permission from Newsletter 20(4): 48-50, the publication of the Cave Exploration Group (South Australia) Inc.

.....

I have arrived back in Tabubil with the fossils and my life. In retrospect, it was an exciting experience, but at the time it was quite frightening. I flew out of here in the helicopter on the morning of Thursday 13th November, 1975, up the valley of the Ok Tedi to the north. We then flew along the face of the Hindenburg Wall, a massive limestone escarpment between 450 and 1500 m. In one part of the wall there is a cave, actually the efflux of a river system that I was to enter from the other side. The river no longer flows out of this hole which is about 120 m from the top of the cliff. The pilot flew the helicopter within about 6 to 9 m of the cliff face so I could see right down into the cave. We then swept up over the top of the wall, the trees looked about 2 to 3 m high, later I found they were at least 30 m, and down into the valley of the Ok Finem. The cavers' camp was in a clearing in the forest above the river on the main walking track between Tabubil and Tifalmin. It consisted of two native huts with plastic sheeting for a roof and a leanto for cooking. The ground was very swampy and we sloshed around in mud and slush up to our ankles. The beds were all on wooden platforms above the ground and the floor consisted of lots of logs laid side by side.

I stayed overnight here and set off next morning to walk to the cave. The camp was at 2550 m and I found the climb up another 300 m very tiring, particularly as one is walking either in mud and slush or balancing on moss covered logs 2 or 3 m above the jungle floor. It took me two hours to get to the cave, which is twice the time taken by the cavers and the native porters. We finally reached the helicopter pad on the edge of the doline. The pad was built to rescue an injured caver, but he eventually was well enough to walk out. 120 m below us in this immense doline was the entrance to the cave. The trip down was extremely wet and muddy and we climbed up 30 m on to a ledge where we camped the night. We entered the cave about 2.00 p.m. passing under a small waterfall and climbed down a big boulder pile into a cave the size of Mullumullang. It differed in that there was a large underground river and several waterfalls which we had to cross and pass under respectively. The passage was 21-24 m wide with ceiling heights of 24-30 m. After travelling through this for about 1.6 km we came to a muddy slope and down against the wall were two small holes that lead to a 24 m shaft about 1.5 m in diameter. The walls of the shaft consisted of a sharp cherty limestone and towards the base the walls were covered with masses of mud. I had asked that the cavers bring a safety line as I was not all that experienced with jumars. The safety line reached only half way down the shaft to a point where the main climbing rope had cut a groove in the limestone. This aspect did not please me, but when I got to the bottom of the shaft, not only could I hear water, but to my horror I noticed bubbles on the ceiling, indicating this area had recently been completely flooded!

* Flinders University, Adelaide, South Australia.

I had another 30 m to go along a narrow rift and through an empty sump to the fossil site. I felt somewhat uneasy and decided to forget the photography and concentrate on the removal of the fossils. While I was working, I thought I heard the note of the stream below me change slightly. I stopped working and the caver who was with me also stopped and listened. He assured me it was O.K. as he had caved a lot in the wetter areas of England. Then a sudden roar started like an express train coming through a tunnel. I jumped up and started running and crawling towards the rope. Still the other caver said it was all right, but I asked him to bring the cameras and the first bag of fossils. He ran past me, placing the camera bag on a ledge and dropping the fossils. He jumped for the rope and disappeared up the shaft. I had tied my harness on the bottom of the rope as another caver had wanted to pull it up later to use it. It seemed to take an eternity to undo it and get it on. By this time the roar was deafening. I reached for the cameras but these had dropped into a slot in the floor. I jumped down, grabbed them, clipped them to my harness and grabbed the climbing rope just as the first rush of water hit the tunnel. I did not have time to rig the jumars properly and somehow I managed to climb fairly fast hand over hand up the rope to a small ledge where the other caver was hanging. Then my light went out! He continued his ascent showering me with great lumps of mud as he scrambled up the hole. Once he reached the top, I could readjust my jumars and in the dark, climbed to the point where the end of the safety line hung and clipped on to it. Finally I reached the top of the hole exhausted.

The noise in the main cave had reached a crescendo and we hastened to make the 1.6 km trek back to the entrance. We had one light between us and a rucksack each. The first waterfall was a raging torrent and we had to pass under it and avoid being swept off the rocks into the river. Just as I was under the waterfall, Tony's light went out. He passed me his rucksack and I sat clinging to the rocks with one hand. In total darkness he managed to climb down the ledge beside the river and relight. I then edged towards the light and passed him one of the rucksacks; we then continued towards the entrance with Tony moving forward and shining his light back so I could move up. The second waterfall was O.K. but the river had risen considerably. We found the narrowest point and by linking hands we could reach the other bank while still hanging on to the other side. The current was very swift and it was difficult to maintain a footing but we crossed it and made our way out into the pouring rain and climbed 30 m up greasy poles to our perch on the cliff. The ordeal had taken five hours.

I had lost my equipment except the camera and worst still, there were three other people down in another part of the cave called the Phreatic Maze. We were sure they would be drowned. As fate would have it, they had gone a different way and avoided most of the flood and finally emerged two hours after us. The next day I did not feel like going back, particularly as it had poured with rain most of the night. However, two of the more intrepid cavers said they were willing to investigate. They recovered a lot of gear and a considerable portion of the accessible fossil material. They found the passages we had been in had flooded to the ceiling.

The fossil is in the limestone, that is, it is of Miocene age. It looks mammal like and I think it is a marine creature, perhaps a primitive dugong!

* * *

THE PANAMECHO CARVINGS, NEW IRELAND

Lindsay Wilson *

Panamecho Village is 84 km by road from Kavieng and is built on the edge of a rocky shoreline on the west coast. The west coast road skirts the village, and gives way to a steep slope studded with limestone outcrops - within a short distance becoming a sharply ascending escarpment, rising in places to almost a hundred metres above the shoreline. This escarpment forms a massive amphitheatre in which the villages stretch across the mouth. Near the top of the limestone wall are a number of jagged clefts which have been used for the storage of artifacts by previous inhabitants. In all cases access is difficult and dangerous, in some cases necessitating the use of ropes (see map).

It seems probable that at the time artifacts were placed in the recesses, people were living on a site close by. Near the edge of the escarpment, low stone walls divide an area into squares and rectangles suggesting the boundaries of village house plots. Similar walls are found inland from Medina on the east coast, and they seem to have been a common method of indicating divisions between home sites. A village situated on top of the escarpment would be in an excellent defensive position, while good land for gardening is found close by. The present residents of Panamecho use the land on top of the escarpment for gardening as no suitable area exists on the narrow coastal strip near the village.

At the beginning of the German administration of New Ireland numerous communities lived on the lower mountain slopes where the soil is better. German "kiaps" enforced movement to coastal sites to ensure plentiful labour for road building, and also to make administration easier.

Early in 1973, Benson Bambai, headteacher at Panamecho primary school, assisted by villagers, descended from the top of the cliff to a recess of a few metres down. They found the malanggan figures still upright against the rear wall and facing out to the Bismarck Sea. The smaller pieces rested at random on lower levels. Considerable numbers of bleached bones were scattered on the floor of the platform although only one skull was in evidence. Sections of bamboo stored to the rear held particles of burnt bone and ashes - the opening in each container plugged with fibre and leaves.

The wooden sculptures, seven in all, were removed to the village and placed in a temporary display house. It is obvious that existence of the burial cave has been known for some time, but a combination of traditional tambus, the dangerous means of access and a lack of incentive to remove the carvings, has largely left them undisturbed. An exception was the sale of two pieces to an Australian in 1968 (Figures 8 and 9) - these were removed without publicity. The price was said to be $100 each. Enlarged photographs were sent to the villagers and the drawings were made from these.

The remarkably good condition of the carvings at the time of their removal from the cave tends to belie their age. Clearly they were made before the introduction of steel tools, placing their age in excess of eighty years. Rot and

* Keravat National High School, Keravat, E.N.B., P.N.G.

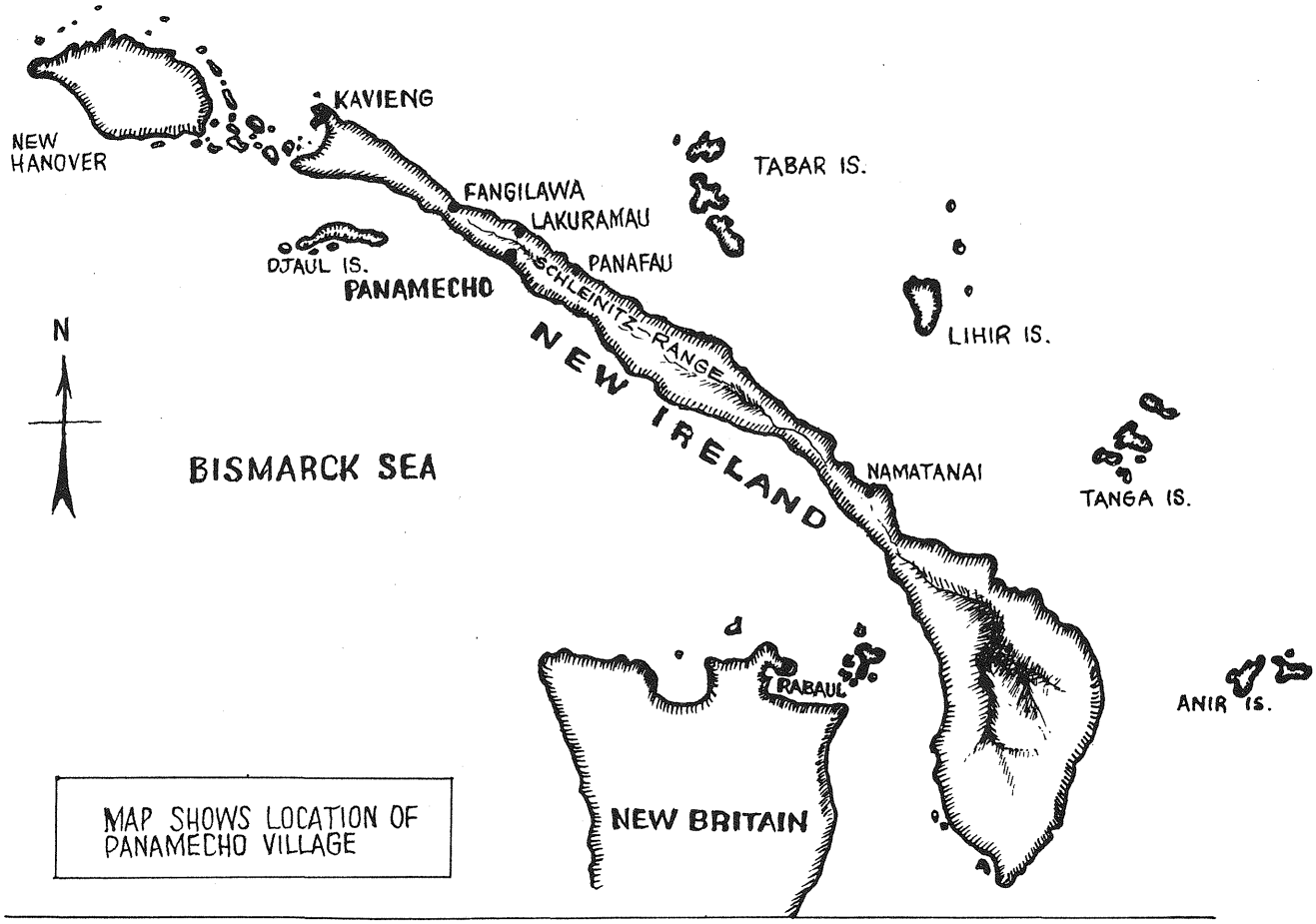
borers have affected some parts, but the general detail is very clear. In all cases fibre, representing hair (Figures 1, 2, 3, 4) has decayed and some of the supporting cane framework with it. An exception is the mask (Figure 3) whose framework is damaged but largely intact. As might be expected almost all pigment has been removed through partial exposure to the elements. Some traces of black and white are evident in places, although the general appearance of the wood is greyish-white. The sea-snail operculum used widely in New Ireland for eyes of Malanggan figures is still in place on several of the carvings. The broken parts are shown in the drawings, and in the main occurred where the grain of the timber ran at rightangles to the direction of the member. An example of this can be seen on Figure 7 where a beautifully intricate snake motif curled about the body. Parts of it can be seen around the neck but the other sections have broken away completely. Figures 6, 7, 8 have arms missing, and Figures 7, 8, and 9 show damage to the finely cut ribs.

Close examination of the carvings does not reveal any sign of the use of sharp cutting tools, indeed the flowing lines are in contrast to the modern carvings which appear angular and stilted. It must be assumed then that the commonest method of carving was used here. In essence, it is better described as "burn and scrape". A carver would have a stock of sticks split from exceedingly hard timber - these would be prepared well ahead and vary in thickness from a few millimetres up to perhaps four centimetres. The ends of several sticks would be kept smouldering in a fire throughout the carving process, and applied to the softwood used for carving, in appropriate sizes. For example a small stick would be used for the hole in an earlobe, the carver blowing gently on the end to produce glowing coals which would burn into the timber. The charcoal was scraped away with a sharply ground shell and progress checked before the process was repeated. In this way, shapes could be refined indefinitely. The smooth surface was achieved by scraping with shells, or filing with sections of "leaf" coral.

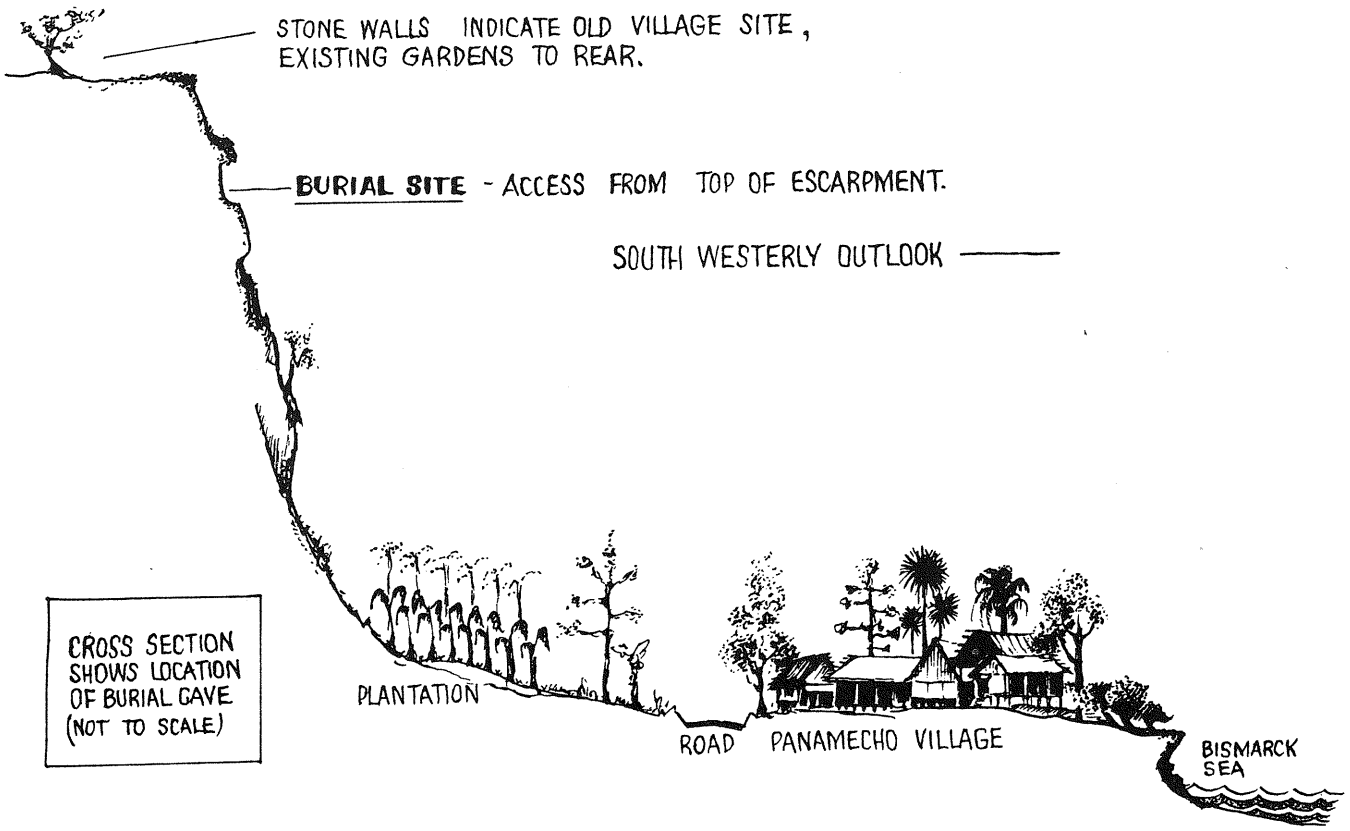
Contrary to popular belief, stone adzes (or clam-shell adzes) were not commonly used for carving. Clearly, their crude performance would not be suitable for carvings of the type illustrated. Older villagers agree that the adzes and axes were employed for hacking vines and light timber, and that their use was extremely limited. Sharkskin and a leaf with an abrasive top surface was also used for finishing. Only the softest timbers were used for Malanggan carvings, both for technical reasons and by virtue of the fact that they were never created for permanency.

It is highly probable that the Panamecho scultures were created in this way. Bearing in mind that several of them are nearly 2 m in height and sculpted from one massive block of wood, the technical achievement is astonishing. The complexity of the designs, and aesthetically pleasing appearance, indicate the work of master artists. Such was the importance of the Malanggan rituals, that a whole village would contribute work and produce, over a period of many months, as the commissioned artists created their pieces. Each stage in the creation would be marked by traditional payment or a small feast, leading eventually to display of the carvings and the main ceremony. The artist was respected and honoured and took pride in craftsmanship and creativity.

The lengthy period covered by the preliminaries to the main ceremony is



MAP SHOWS LOCATION OF PANAMECHO VILLAGE



CROSS SECTION SHOWS LOCATION OF BURIAL CAVE (NOT TO SCALE)

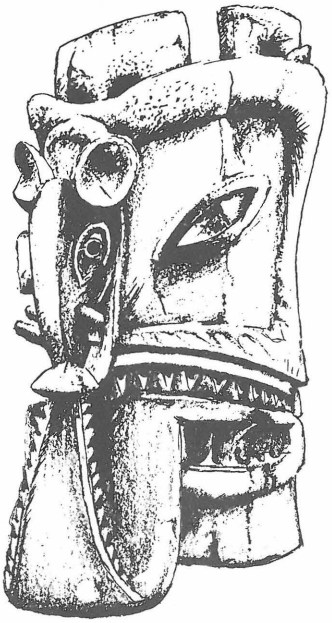


Figure 1 ... height 31 cm.

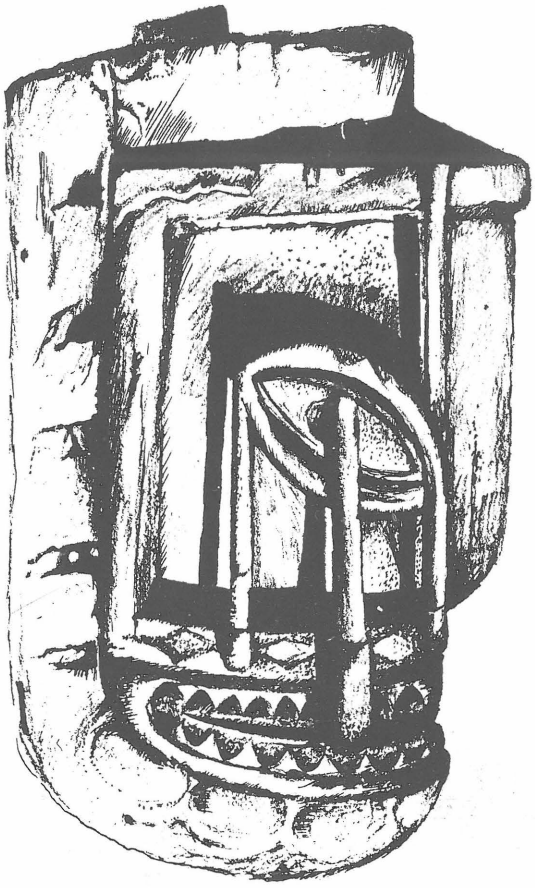


Figure 2 ... height 34 cm.

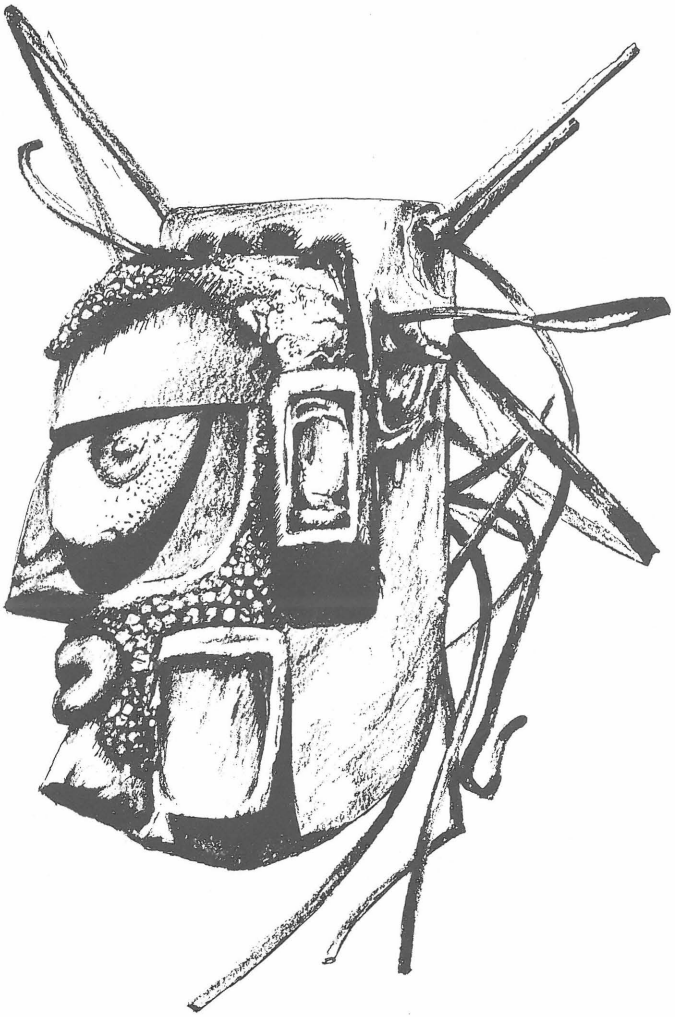


Figure 3 ... height 26 cm.

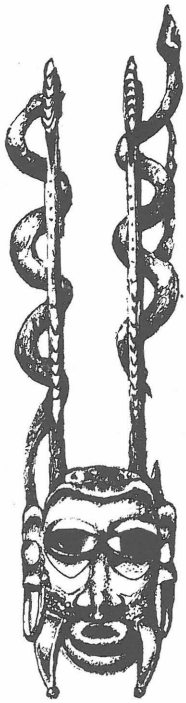


Figure 4... height 74cm.

Figure 6... height 153 cm.

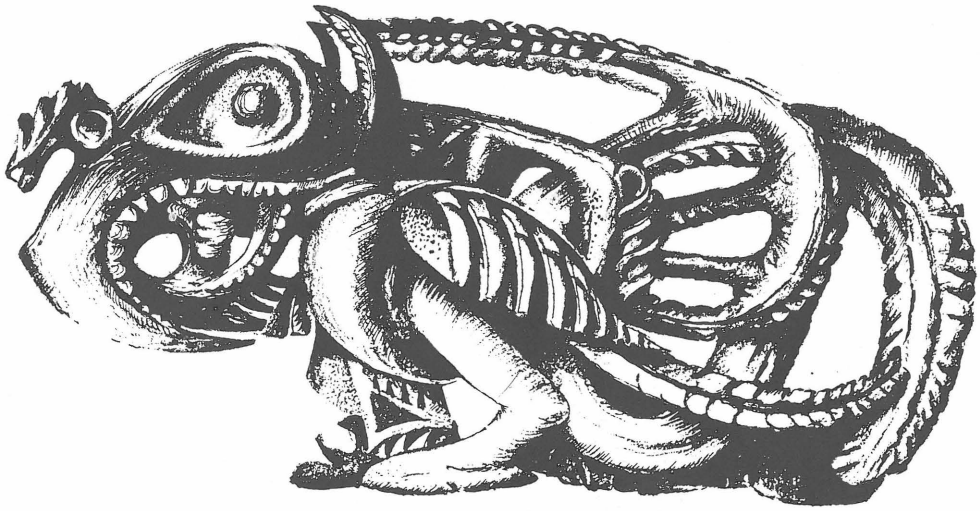


Figure 5 ... length 67 cm.

Figure .7
Height... 194 cm.

Figure.8
Height.. 175 cm.

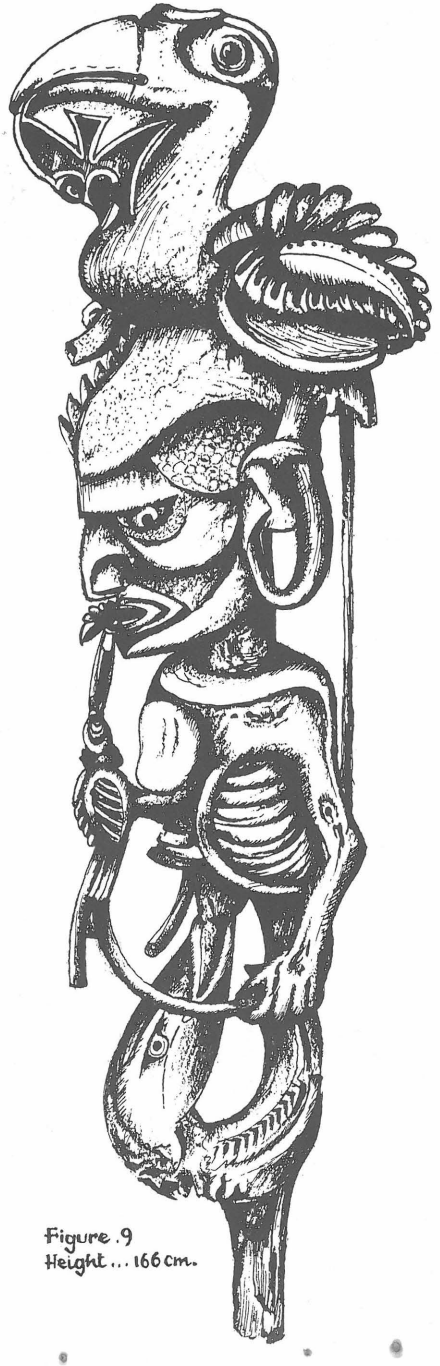


Figure .9
Height... 166 cm.

understandable, when the immensity of the artist's task is considered. That the result of the months of concentrated effort was destined for swift destruction is difficult for a European mentality to comprehend. It was usual for ritual carvings to be destroyed by fire immediately after the ceremony. Placement in secluded "tambu" places appears to be unusual.

Efforts to discover the significance of the carvings in Panamecho society were largely fruitless. It can be assumed that the pieces fulfilled the same purpose in Malanggan rituals as those that have been carved in more recent times. These ceremonies are well documented elsewhere. Some of the carvings display characteristics commonly seen in pieces in museum collections, and are fairly typical in execution to pieces collected last century in other parts of New Ireland. Figure 5 is more unusual - it apparently represents a Maningulai (a species of eagle) and at one stage held a snake in its beak. The ornate mask (Figure 4) was identified as Malis. The wooden headpiece surmounts a body made of fibre, the figure being displayed in a reclining position with arms outstretched. Lewis (1969) identifies the same type as a Gas Malanggan in the Notsi language area of the east coast.

Villagers at Panamecho generally agreed that Emos Gamela was likely to be the most knowledgeable in regard to Malanggan ceremonies. He gives his age as 56 years. Although regarded as a "big man" locally, he freely admits that he has no knowledge of the carvings. There is no man living at Panamecho who has specific knowledge of the use or type of the Malanggans. Emos was able to give the generic name"maru" to Figures 1, 2, 3, and 4, but this name is used widely throughout New Ireland for masks. The author contacted Paseng of Panafau Village on the east coast - he is reputed to have an excellent knowledge of Malanggan types and designs. Although he was able to recognise many characteristics, and specifically name Figure 4 (Malis), he was not able to supply any more information, other than note that Figure 5 was of a type peculiar to the west coast people. Paseng is estimated to be more than 70 years old.

Emos was asked why the Malanggan carvings had been removed from their cave. His answer was emphatic, indicating that the power of the "big men" who commissioned the carvings, and their successors, no longer influenced the villagers. Contact with Christian missionaries, the influence of the government and the existence of a cash economy made the reasons for Malanggan seem unimportant. Although Malanggan was still practised in modified form, the young people did not take it seriously. They had no respect for the traditional values and customs, or for that matter, the sacred places. They were no longer afraid to desecrate places that had long been protected by the "tambu" of Malanggan. Older people who still held to some of the values of the past were often ridiculed. Emos considered this state of affairs to be deplorable, but did not feel that it could be altered.

In regard to the carvings purchased from villagers in 1968; it is likely that the universal disregard for customary beliefs amongst younger men, coupled with a need for ready cash and a willing buyer, led to the removal and sale of the artifacts. It is significant though, that the sale took place with some secrecy.

Young Papua New Guineans are encouraged in school to be active in preserving

their traditional culture. Most schools have positive cultural programmes orientated towards learning about cultural history and sustaining interest in modern cultural forms. Probably this is another factor involved in the removal of the artifacts. Curiosity, and the considerable interest in Papua New Guinea art, would make them highly desirable additions to the village. Since they have been displayed in the village, the carvings have attracted numerous visitors, mainly Europeans, who are charged a substantial fee to look at the pieces. This is equated with traditional usage by the argument that new carvings are by custom hidden from sight until ceremonial payment is made. They may then be viewed.

The carvings are displayed in a facsimile of a customary display house, but with an iron roof as a concession to the elements. They are in the temporary custody of two brothers, Titilip and Esau, upon whose property they were found. This does not imply that the brothers have ownership rights. In an effort to comply with tradition, and establish ownership before it was uncertain, the Parents and Citizens Association of the school purchased the carvings through payment of two pigs and a small amount of money. A feast was held to cement this arrangement, and the skull and a container of bone fragments from the cave buried in the village cemetery. It is planned eventually to build a permanent display house in the grounds of the school and move the carvings to that site.

A number of attempts have been made to purchase the carvings from the villagers. One was by a government institution and others by individuals. These attempts have been rejected by the people in favour of retention in the village. A cultural property preservation ordinance would prohibit export of the carvings in any case. The delicate state of preservation of the artifacts is cause for concern, and it appears that they have deteriorated further since being displayed in the village. They have been sprayed for eradication of borers, but rot is well advanced in some carvings. They are adequately sheltered, but in close proximity to the sea.

Their value to the people of New Ireland and the nation is substantial. There are no comparable examples of Malanggan art in Papua New Guinea, and they would appear to compare well with similar examples in European and American collections. It is understandable that the people of Panamecho wish to retain this link with their ancestors, but regrettable that they do not possess the expertise to preserve the carvings for future generations.

REFERENCE

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DO YOU KNOW - that the Batu Caves just outside Kuala Lumpur in Malaysia are probably the nest known caves in South East Asia? The caves are open to the public and feature two Hindu shrines. Their fauna has been described in a number of papers. There exists an extensive literature on Malaysian caves, karst and fauna.

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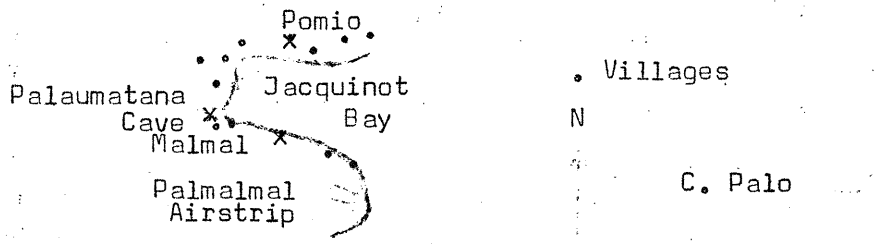
HOW JACQUINOT BAY CAME TO BE

C. Palo*, S. Kotak*, and E. Guamaga*

In the past, Jacquinot Bay was not a bay: it was a forest. At that time there was no salt water. An old woman and her grandson lived by themselves far away from the other people. When the woman prepared food (taro leaves) she would put salt on her food but not on her grandson's. Her food tasted better than the boy's and he asked her where she got the salt from, but she would not tell him. So one day he hid when his grandmother went to get the food and followed her. She went and opened a hole in the rock to let some salt water out, then closed it and went home. So he opened the rock himself, and the salt water poured out and down the valley. All the people were drowned and the villages washed away, but the animals still live in the sea. Some dogs are still living in the sea and can be caught in nets (porpoises).

The cave where the salt water came out is still there and the salt water in the cave is deep. The name of the place is Pelaumatana which means "where the sea came out" in the Maengen language. It is about half way between Pomio and Malmal. It is possible to see the cave when we are about one kilometre away from it.



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LEMORE CAVE, KANDRIAN AREA, NEW BRITAIN

J. Talinge *

This legend is about the very large cave about 1.5 km away from my village, Kumbum village in the Kandrian area of West New Britain. Inside the cave it is really very dark so that you can't walk in without a light. When we want to go into this cave we need to get a lamp, torch or fire before we go in. During the Second World War, people from my village and some villages around the area came over and hid themselves in this huge cave.

A legend goes like this. A long, long time ago the cave was built by a snake; the name of the snake was Lemore and the cave is named after the snake. The people have always believed that the snake built the cave.

The cave is situated close to the beach. When any visitors come, we boys take them there and show them the cave. Every part of the cave is made out of stone and big trees grow on top of it.

* * *

* St. Mary's High School, Vuvu, Via Rabaul, E.N.B., P.N.G.

PIRI CAVES, WEST SEPIK PROVINCE

L. W. Bragge *

The following is from a report written in June 1964, when the author was a patrol officer stationed at the Green River Patrol Post.

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The Piri Caves, which occur in limestone outcrops, are 2¼ hours' walk ENE of Terauwi Village. This is 5-6 hours' walk from Green River Patrol Post (see Map 1). The Piri area is owned by two Terauwi men, Nimbiva/Angamia and Kwaini/Mameimo. The actual rights exercised by these two appear to be those of owners or custodians. However the whole population of Terauwi Village has the right to sleep in the caves and to hunt the bats. Access to Piri from Terauwi is as follows: 55 minutes walk along an uncut bush track over slightly rising ground; 33 minutes walking upstream in Liwo Creek; 40 minutes walk on a rough bush track from the bank of the Liwo to the first cave.

Cave 1. The floor is composed of clay and fallen blocks of limestone. The section A to D is wet with water dripping from the ceiling. The only light in this section comes from C and the cave mouth. Between G and H the floor has a dip in it. There is a stone shelf at X and Y. At Y there are charcoal drawings and at X there are marks scratched into the stone. (See Map 2)

Cave 2. This is located 5 minutes walk ESE of Cave 1. The floor deposits consist mainly of clay with occasional pieces of fallen limestone. The floor from J to K is clear of stone and appears to be deep clay. The cave mouths at I, F and G are piled high with fallen stone and rubble. Stone work was found in this cave. (See Map 3)

Cave 3. This is a small cave located on the bank of Abara Creek, 6 minutes walk from Cave 2. It is subject to flooding from the creek.

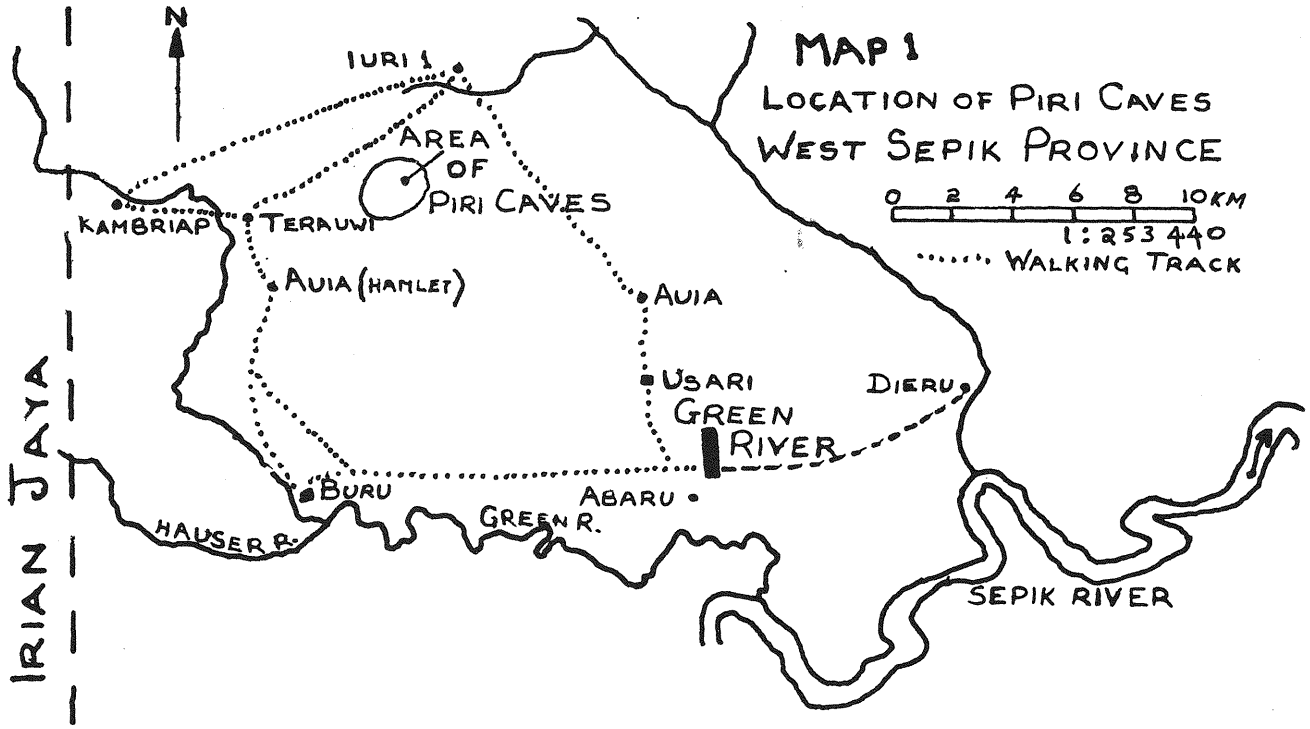
Cave 4. Located on a hillside above the west bank of Abara Creek, 20 minutes walk NE and upstream from Cave 3. It is on a steep hillside about 45 m above Abara Creek. The cave floor consists of clay and ash. The chipped stone implement was found about 30 m below and to the SW of point A. The cave is still occasionally used. There are skulls and an old suit of cane armour inside. An old jaw bone was found in a small room. (See Map 4)

Cave 5. This small cave is on the west bank of Abara Creek 15 minutes walk further up the creek. It is subject to flooding from the creek.

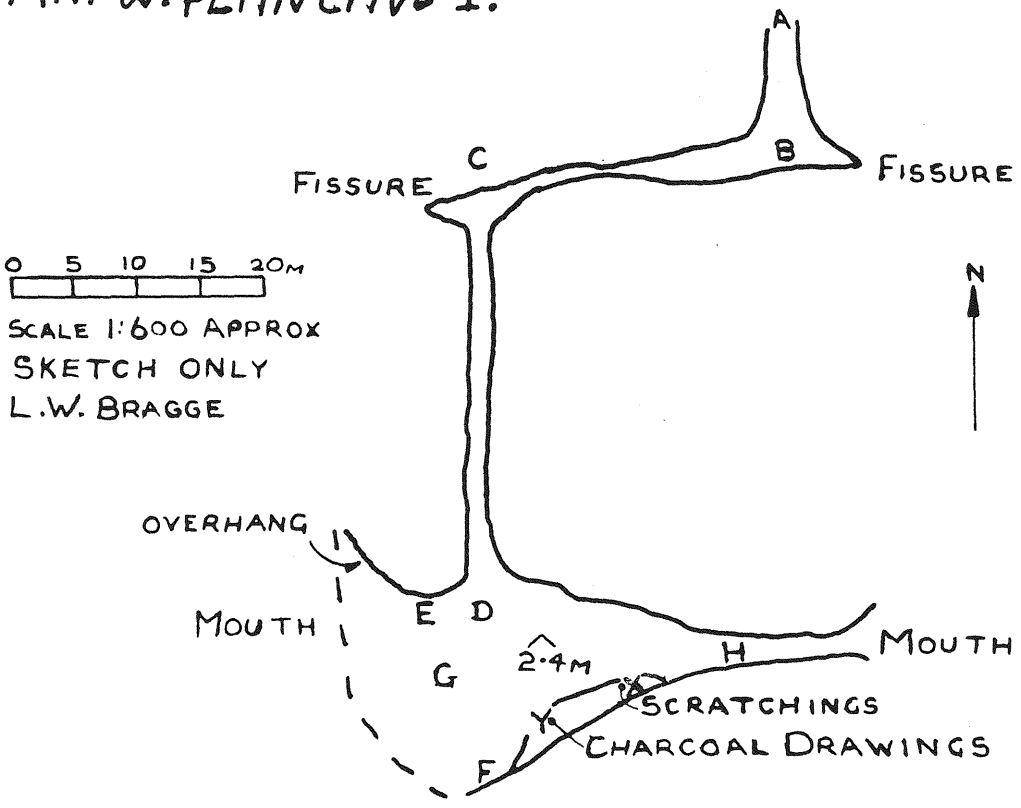
Cave 6. Located on the hillside 90 m further upstream and to the west. It is 6 m above the level of Abara Creek and is 90 m from the creek bank. The floor is clay and ash with a greater proportion of clay than the floor deposit of Cave 4. (See Map 5)

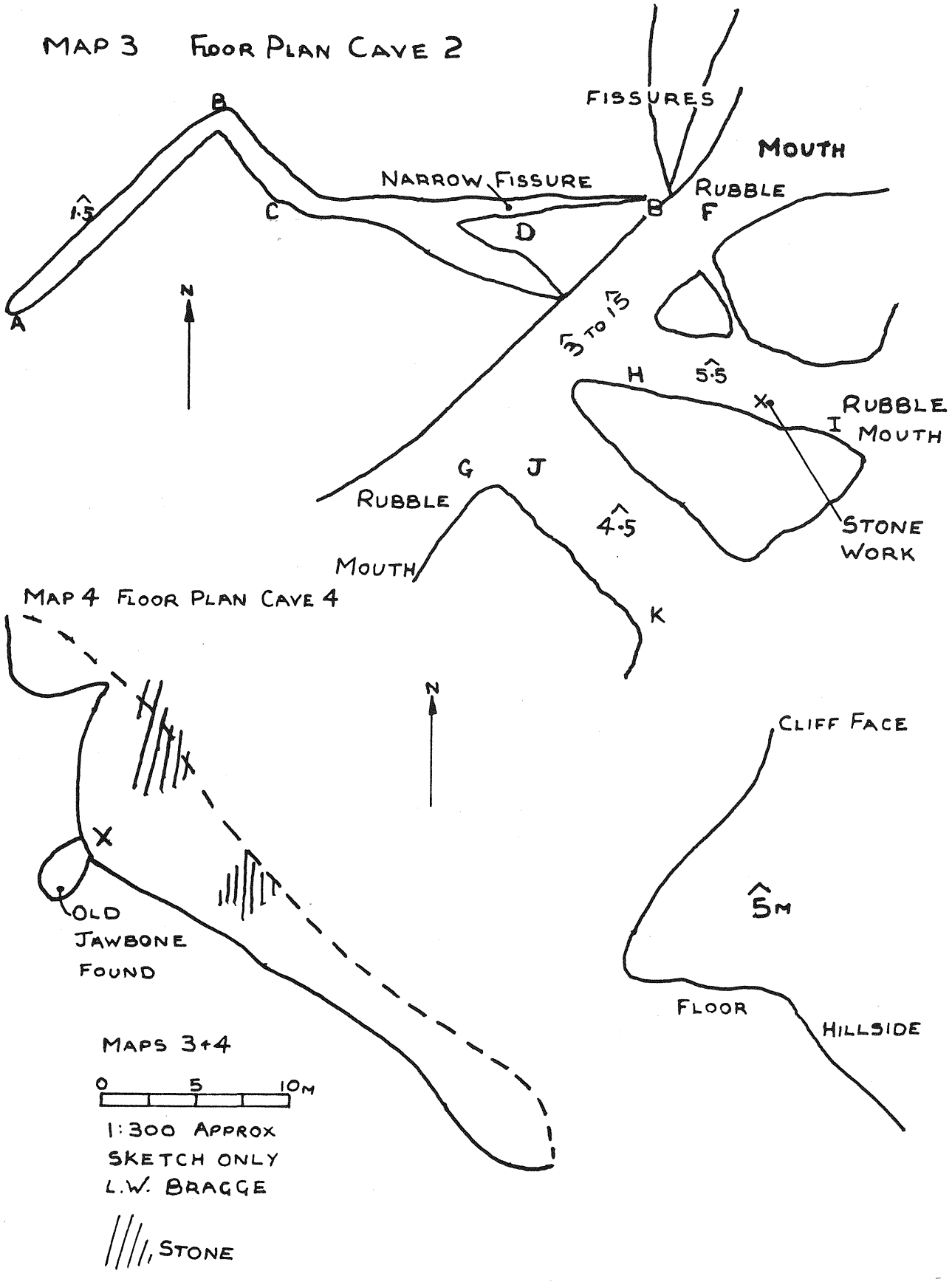
The floor plans for the cave maps tend to indicate that the caves are narrower than they actually are as the walls seldom rise vertically.

* Present address unknown



MAP 2. PLAN CAVE 1.




MAP 3 FLOOR PLAN CAVE 2
FISSURES
MOUTH
B
NARROW FISSURE
RUBBLE
F
1·5
C
B
D
N
A
3 TO 15
H
5·5
X
RUBBLE
I MOUTH
G
J
RUBBLE
4·5
STONE
WORK
MOUTH
K
MAP 4 FLOOR PLAN CAVE 4
N
CLIFF FACE
X
5M
OLD
JAWBONE
FOUND
FLOOR
HILLSIDE
MAPS 3+4
0 5 10M
1:300 APPROX
SKETCH ONLY
L.W. BRAGGE
STONE

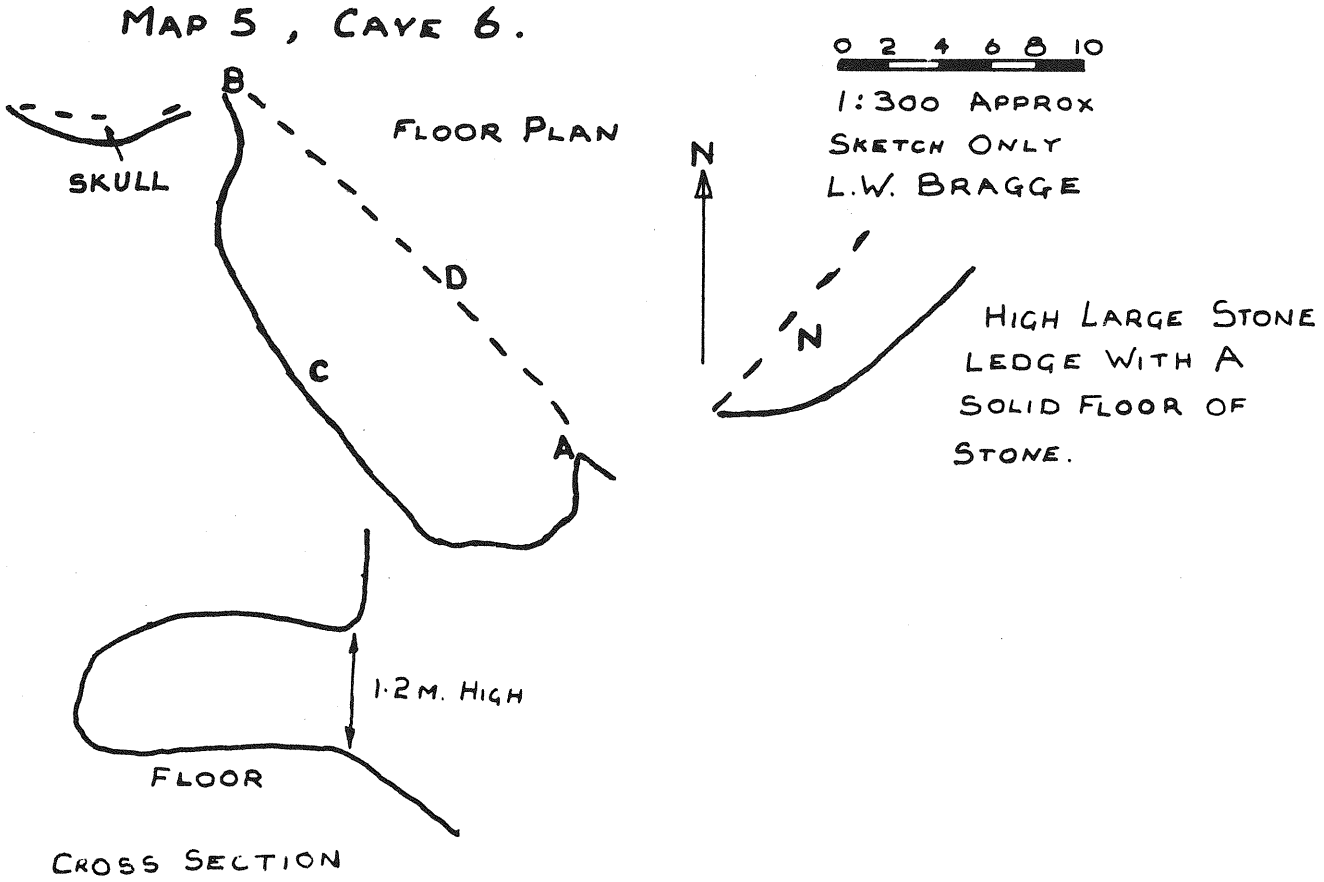


FIG. 1. SCRATCHINGS AT POINT 'X' IN CAVE Nº. 1

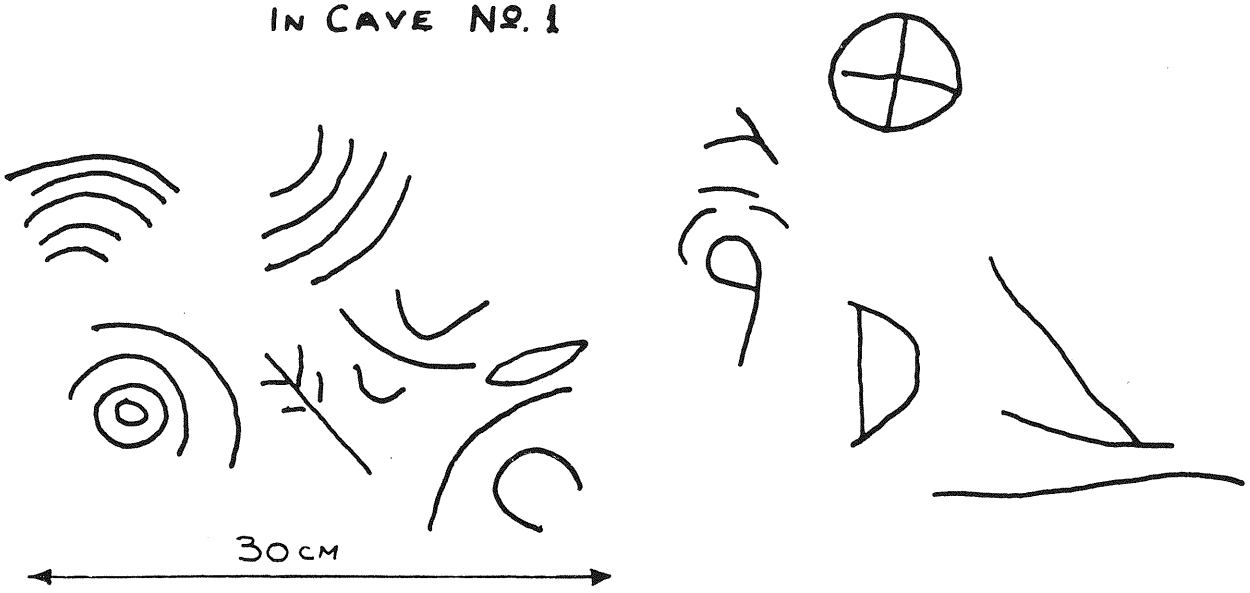


FIGURE 2. DRAWINGS OF LIZARDS, CAVE 1

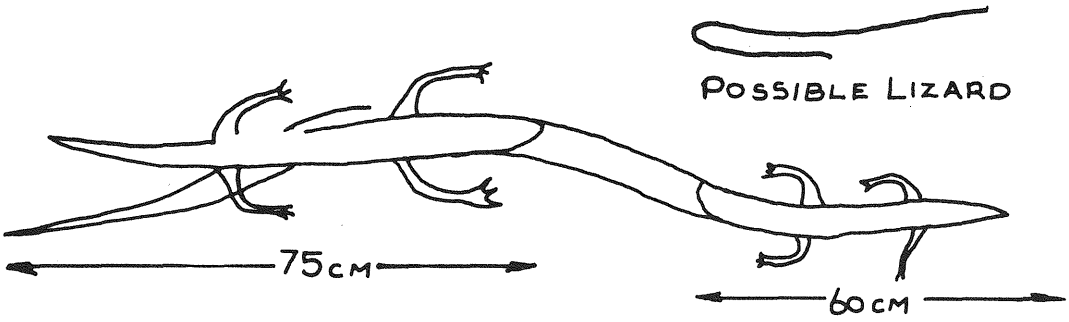
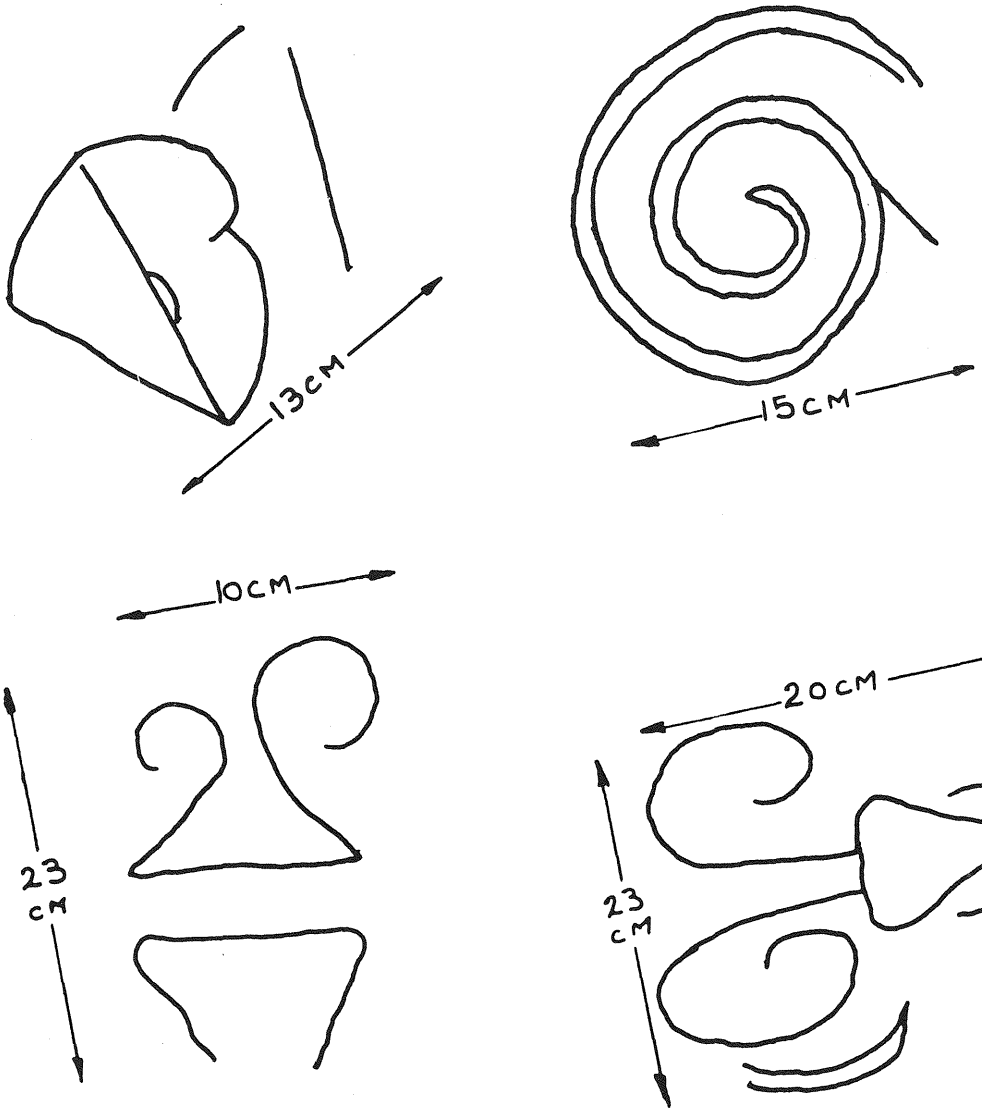


FIGURE 3. DRAWINGS, CAVE 1



Cave Scratchings. Cave scratchings or engravings were seen in Cave 1 at the point marked X on Map 2. They are located in the ceiling of a ledge where the floor level is about 60 cm below the level of the ceiling of the ledge. The scratchings in the stone are deep enough to be felt when the fingers are run over them. They are plentiful and seem to be in an untidy unrelated mess. Those given in Fig. 1 are only a small section of the ledge ceiling. The people claim to have no idea who made the scratchings.

Cave Drawings. These were found only in Cave 1. They have all been done in charcoal. The local people have no idea who made the drawings, but probably associate them with the legend of a hermit who was believed to live in the cave at one time. All of the drawings are on the ceiling of a ledge in the wall (point Y on Map 2). They are closer to the cave mouth than the scratchings.

The original drawings are all faint and difficult to see. The larger of the two lizards seems to have been recently retouched with charcoal (Fig. 2). The two lizards seem to be drawn over the top of a snake, but this is difficult to see. The snake shows only as a smudge. The larger of the lizards is facing the cave mouth. Both of the lizards are about 45 cm long. There are at least two more lizards, but these have flaked away from the ceiling to a large extent.

The other drawings (Fig. 3) are nearer the cave mouth than the lizards. They are very faint indeed and it is difficult to tell whether the sketches are completely accurate as the thickness of the lines is difficult to make out. There are probably other similar drawings present that I could not see.

Stone Work. This is located in Cave 2 (see Map 3). The floor of this section of the cave is fairly moist and clayed as the floor level is lower in this section of the cave than in the remainder of the cave. The stones in the structure seem to be firmly embedded in the cave floor. They are unshaped but appear to have been chosen for their flatness.

The purpose of the structure seems to be water catchment. The mouth of the cave at point I is piled high with fallen blocks of limestone so the cave floor slopes down from the mouth. The end of the stone work nearest the mouth commences at the base of the slope. The large flat stone standing on its edge between the cave wall and the inside wall of stone channel would certainly catch water if water came in through the cave mouth. The channel itself seems to have no clear purpose unless it was to direct water into a vessel at the other end of the channel. At the point marked K on the floor plan (see Map 3), there are the possible ruins of two similar channels.

Chipped Implements. While I was climbing the steep track to Cave 4, I found a chipped implement made of a siliceous stone (probably chert). This was found approximately 30 m below Cave 4 and slightly to the downstream side of it. I think that it is most likely that it was originally in the cave and has been washed or knocked down the steep slope to where it was found. The local people did not recognize it as a man made implement. This type of stone is not used in any implements now or in the remembered past.

I checked in all the caves examined for stone chips, but could find no flint or chert. Several pieces of quartz were found in Caves 1, 2 and 6. Some

of the pieces from Cave 6 seemed to show signs of having been worked. All the stones found were on the surface, no digging being attempted.

Human Bones. These were found in Caves 4 and 6, both of which seem to have been used for burial in the recent past. Only one skull was found in Cave 6. In Cave 4 over a dozen skulls and a collection of human bones were seen. The skulls were nearly all on a natural stone ledge on the cliff face. With them was an old suit of cane armour. This was probably left with its former owner as an expression of his fighting prowess.

In Cave 4 there is a small opening in the cliff wall (point X on Map 4). Beyond this opening, which can be climbed into with little difficulty, there is a small stone-like cave. In this room there is the remains of a skeleton. The skull was missing (it had probably been removed after the body had decomposed and been put on a high rock ledge somewhere) but the jaw bone was still in the room. I examined this and found that the bone was a dark brown colour and was soft to touch. Only six teeth remained in the jaw (three molars on each side). The rest of the teeth could well be still on the floor. The molars were very worn to the outside of the jaw. A number of measurements were made on the jaw bone and these were compared with a "normal" jaw. The measurements were quite different.

* * *

THE NEW CONTRIBUTORS

Laurie Bragge is a former patrol officer with many years experience in remote areas of the country. He has visited caves in a number of areas.

David Cole was based in Goroka in the early sixties and caved in the highlands at that period with the Goroka Caving Club. After leaving the Admin., he joined the University of Washington archaeological project.

Emanuel Guamaga is from Malakur Village, Pomio Sub-province, E.N.B , and is a fourth form student at Vuvu High School via Rabaul.

Rick Hutchings is a former member of the Cave Exploration Group (South Australia)Inc. He did some caving in P.N.G. in the sixties.

Steven Kotak is from Matong Village in the Pomio Sub-province of E.N.B., and is a fourth form student at Vuvu.

Camillus Palo is also a fourth form student at Vuvu. He comes from Pomio Village in E.N.B.

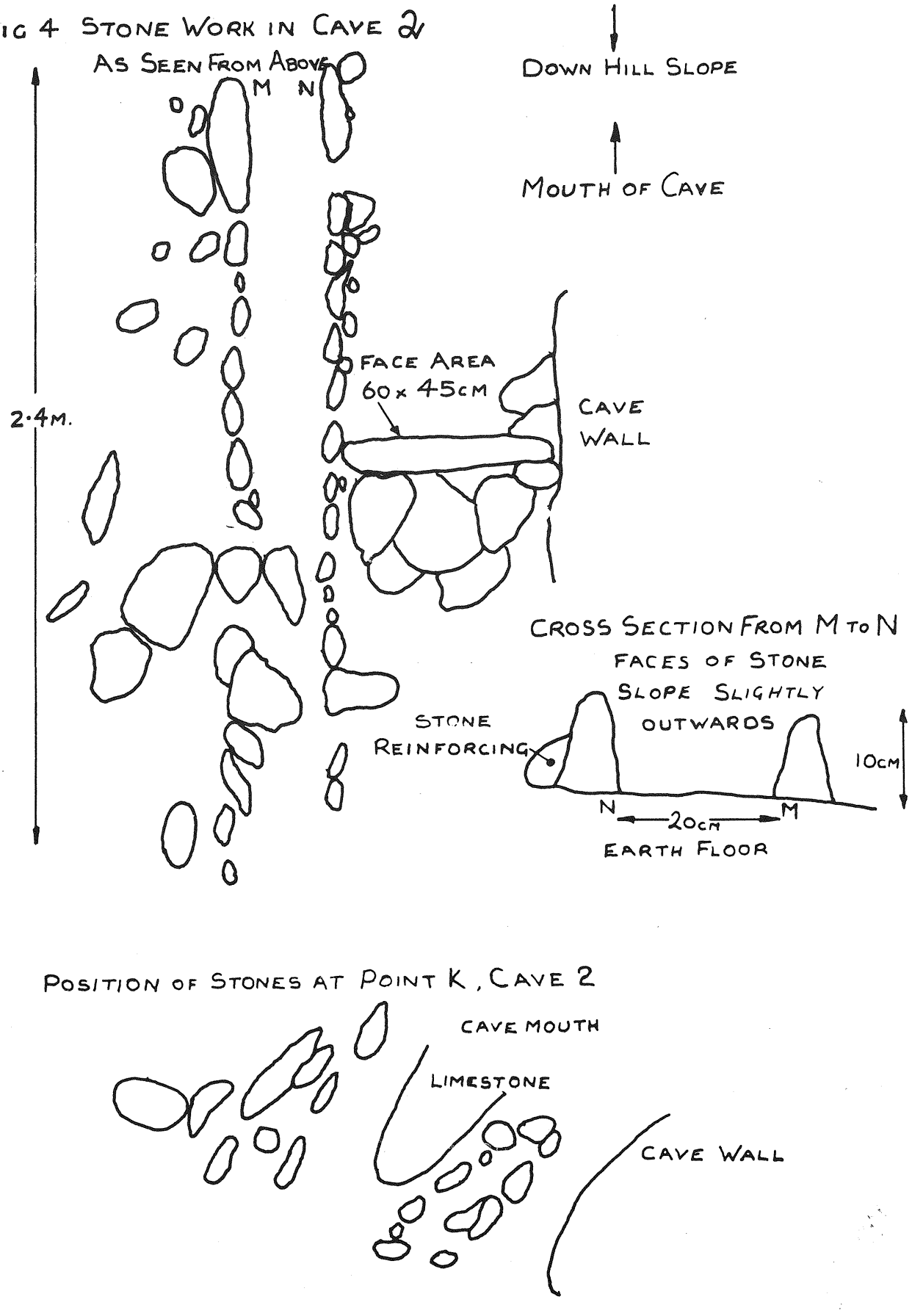
James Talinge is from Kumbun Village in the Kandrian Sub-province of West New Britain. He is a fourth form student at Vuvu.

Rod Wells is a palaeontologist and a member of the Cave Exploration Group (South Australia) Inc. He joined the British expedition to P.N.G. last year briefly. He is well known in South Australia for his work with the fossils in Victoria Fossil Cave.

Lyndsay Wilson's professional interest is P.N.G. art, especially that of New Ireland. He has visited caves in the Eastern Highlands, Chimbu and on New Ireland, mainly to look at art sites.

* * *

FIG 4 STONE WORK IN CAVE 2



POSITION OF STONES AT POINT K, CAVE 2

UMA CAVE

TELEFOMIN SUB PROVINCE – WEST SEPIK

SCALE :- 1:240

0 2 4 6 8 10 12M

MAGNETIC NORTH

SURVEYED BY :- R. HUTCHINGS AND K. BLACK (21·10·67)

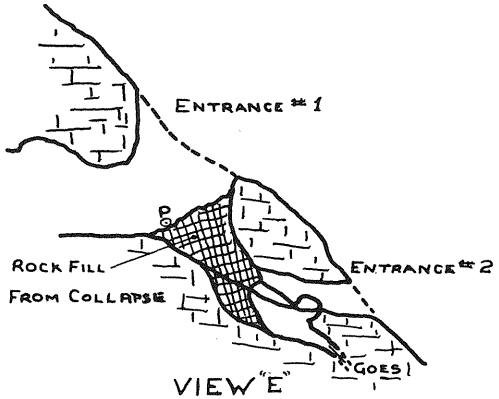
USING HAND COMPASS AND STEEL TAPE

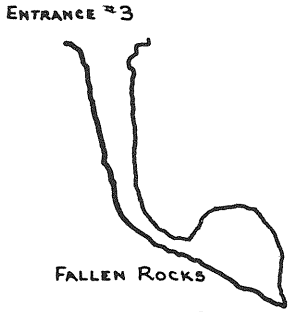
C.R.G. GRADE III

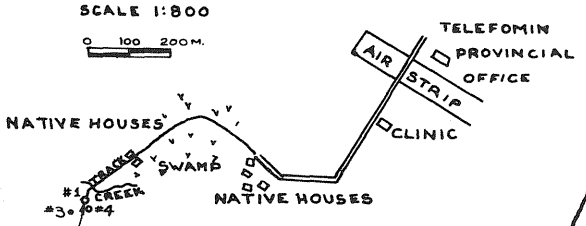
DRAWN BY :- R. HUTCHINGS (26·10·67)

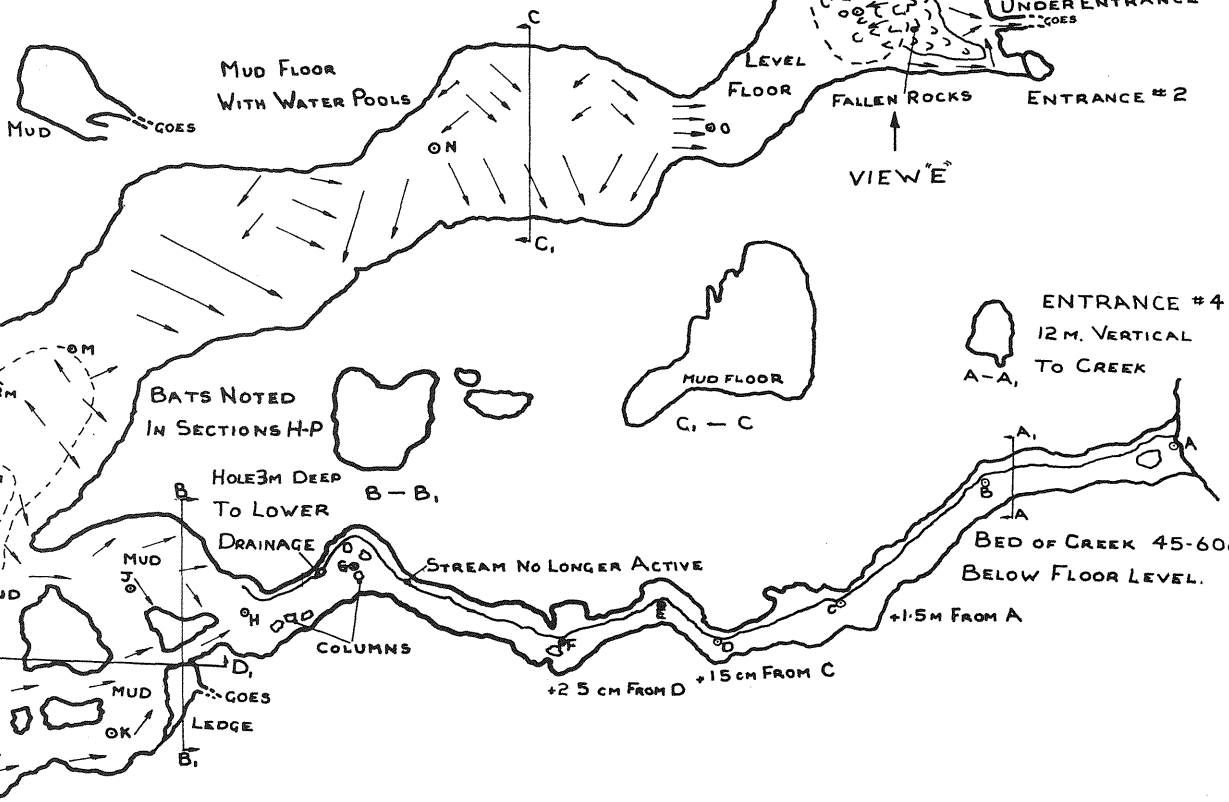
LEGEND

- FALLEN ROCKS
- SURVEY STATION
- SLOPE OF FLOOR
- 15M ROOF HIGHT









A BASALT LAVA CAVE, NEW BRITAIN

T. Sprod *

A small cave has been found in a thick sequence of basaltic lava flows from Turanguna (South Daughter) outcropping behind the Talwat Primary School on the Praed Point road near Rabaul. The entrance is 2 m wide and 1 m high. Inside, the cave opens up to 2 m high, 3 m wide and 8 m long. The walls and roof are rubbly, suggesting that they consist of a flow bottom. The cave ends abruptly in what appears to be cross-section of the flow. Lava fragments of up to 20 cm width cover the floor.

The suggested mode of formation is phreatic explosion, that is explosion driven by superheated steam formed from contact of groundwater with hot lava. A similar nearby cave of larger dimensions was described by Fisher (1939); he ascribed to it the same origin. This cave can no longer be found and has apparently been blocked by sediment. Fisher went into the cave, collapsed from lack of oxygen and had to be dragged out.

Fisher (1939 p37) describes the cave as follows:

"Two small eruption centres associated with Tavurvur /Matupit/ are found on the flat land respectively 1,100 yards southeast and 880 yards NNE of the centre of the crater..... Just north of these /former/ craterlets in a small gully, a hole with an aperture of 25 feet diameter has been blown out underneath a lava flow. This hole is the mouth of a considerable cavity, the floor of which near the opening is only three feet or so above sea level. The accumulated steam pressure below has forced an opening at the side rather than bursting its way upwards through the heavy overlying lava flow. The mouth of the tunnel faces east, but a short distance inside it turns fairly sharply and extends for about twenty yards in a southwest to southerly direction. For some months after the /1937/ eruption, a very heavy gas layer, mostly carbon dioxide occupied the lower half of the tunnel. The floor was muddy and hot, with very small quantities of steam being given off in places."

REFERENCE

Fisher, N. H. (1939). Geology and Vulcanology of Blanche Bay and the Surrounding Area, New Britain. Terr. New Guinea Geol. Bull. No. 1.

* * *

MAP OF UMA CAVE, WEST SEPIK PROVINCE

Uma Cave was surveyed in 1967 by K. Black and R. Hutchings. As indicated on the location diagram, it is 900 m NNW of the provincial office at Telefomin (see map p64). Rick Hutchings placed a copy of the map in the files of the Cave Exploration Group (South Australia) Inc. The map was forwarded to Hal Gallasch by CEGSA.

R.M.B.

* * *

* P.O. Box 1391, Rabaul, E.N.B., P.N.G.

SPELEO PERSONALITY - HANS MEIER

Born in Switzerland in 1940, Hans came to Australia in 1961 and to Bougainville in 1968. He loves the place and has lived there since then. An industrial chemist by profession, he is employed by Bougainville Copper Limited as a research chemist. Hans and his English wife Elizabeth have acquired one pikinini to date. Interests other than caving include swimming, bushwalking and lately fishing.

For a long time he had a latent interest in caving, but it never took him further than tourist caves. Then in 1971 he met Peter Robertson on Bougainville and became involved in some "real" caving. Together they surveyed and explored Nenduma Cave near Kieta. Over the years, he has visited the cave on numerous trips and has caved in the Rotakas area of the island. He has also caved near Mt. Hagen and in Victoria in Australia - at New Guinea Ridge of all places! He is ambitious to visit the Keriaka Plateau again as his earlier trip failed when communications with the local villagers broke down. He has done a little rope work, but does not consider himself competent with SRT for underground usage. Hans has published articles on Nenduma and Kovava Caves in Niugini Caver.

Like other keen but isolated P.N.G. cavers, he has experienced the usual problem of no one to go caving with. He has tackled this problem by trying to get local people involved in caving. His efforts have met with limited success however - football and other diversions have tended to limit the interest shown. He also has a problem not usually encountered in P.N.G. - access to Nenduma is always touchy. Anyone wandering the bush on Bougainville is generally suspected of looking for copper or spying for B.C.L. - activities no longer favoured by Central Bougainville villagers.

Hans Meier is not amongst the most experienced cavers in P.N.G. - but he must be one of the most persistent. For five years he has been systematically exploring a few caves on Bougainville and has been the enthusiast in a small and unstable group, even if it was down to one member at times! His policy of grabbing anyone who shows even a slight interest in caving and taking them out to Nenduma has paid off. And who knows? His persistent efforts to get local people interested in caving may give rise to a speleological group in Bougainville when the sport fades elsewhere.

R.M.B.

* * *

DO YOU KNOW - that numerous lava tubes are reported from the Hawaiian Islands? They are up to 6 km long and occur up to 2440 m a.s.l. The tubes form in basalt, usually by the crusting over of lava rivers. Lava caves are also known from Kenya, Australia (north Queensland and western Victoria), continental U.S.A., Western Samoa, Korea, French Polynesia, Canary Islands, Cameroun, Easter Island, Zaire, the U.S.S.R. and other countries. They are even suspected on the moon!

Lava caves feature decorations such as stalactites and stalagmites as are found in limestone caves. They are formed by dripping lava when the cave is formed. Unusual features in lava caves include levee banks.

* * *

THE CAVING SCENE

British Expedition. Members of last year's trip have met with a tremendous response on their return to the U.K. There have been numerous newspaper articles, some of which were rather distorted unfortunately, and a number of television interviews. There are at least two companies interested in the film. The Royal Geographical Society are going to devote an edition of their journal to the expedition. The deputy leader, Andy Eavis, toured Australia after the trip and spoke and showed slides in Adelaide, Canberra, Hobart and Sydney. No news has yet reached P.N.G. about the final lengths and depths of the discoveries. The report should be out late this year.

Central Province. Malcolm and Alison Pound and a small party went out to Javavere in early March for a surveying trip. The survey of Old Cave is coming along steadily. In early April Mal took a party of 43 (!) from the Y.H.A. The trip was an introductory one for most of the people and some expressed an interest in returning. Bill Lehman and Mal plan a trip out to Cape Rodney soon.

Chimbu. Things are very quiet in the Highlands lately. The only activity was a quick trip by Doug Rogers, Kev Wilde and a girl called Sue out to Irukunguai in May. It was Doug's first caving trip.

East New Britain. Michael Bourke, Jim Farnworth, Hal Gallasch, Alan Leadley, Alan Olden and Tim Sprod did a trip through Rururunga, the longest pumice cave at Keravat, in late March. The water was quite high at the time and part of it was blocked by flood debris - a good sporting trip. The party followed the creek upstream for a few kilometres, but apart from a lot of pumice in boots, the only find was a small pumice cave some 9 m long. This brings the total number in the area to four, the others being in welded tuff.

A month later Michael, Jim and Tim surveyed Vunarakan, the top cave in the welded tuff, and a kilometre or so of creek. The traverse down the creek was interesting - it must be one of the few creeks flowing upstream! Maybe I should have picked someone a bit shorter than Tim to sight on to with the clinometer. Tim came across a 6 m lava tunnel near Praed Point not far from Rabaul recently. This is the first recorded lava tunnel in P.N.G.

Muller Range Expedition. An advance party of three will go in late July for two weeks before the main party comes in on 10th August. They will be in the field for a month from then. Aims are to look at areas which are considered promising on the basis of the '73 trip and aerial photography interpretation. There will be about 15 people, mainly from Sydney, although it is possible that some New Zealanders, an American and some Canadians may come. Kev Wilde will be in on the trip for a few weeks. The group will initially divide into two and look at two areas - one at the extreme end of "The Cheese" and the other in the Camp Horatio area. The groups may combine if one area is much more promising.

Leaders are Julia James and Neil Montgomery. Anyone interested in the trip should write to Dr. J. James, Department of Inorganic Chemistry, University of Sydney, N.S.W. 2006, Australia. The cost ex Koroba is K300. The party will be taking 1200 m of rope together with climbing equipment. The trip is being run

with as little organization as possible, in contrast to the earlier Muller trip. Not much sponsorship has been sought. Porters rather than airdrops will be used to transport the gear into the base camp at Gororo.

New Ireland. Lex Brown recently gave a slide show and talk to cavers in Melbourne and Sydney on last year's Lelet expedition. The report should be out in the next issue of N.C. - hopefully. This year's Lelet trip will be going into the field in a few weeks. There are seven starters for the entire trip at this stage, with people coming from Queensland, P.N.G. and Sydney. Dave Larkin and Tim Sprod are the P.N.G. reps. Michael Bourke and Jim Farnworth will be joining the trip for part of the time.

The plan is to spend one or two days looking at the Dalum Efflux and other effluxes on the way in. Then a base camp will be established at a permanent water point on the high plateau at Kandalum. The party will operate on the high plateau out of this base. Let's hope one of this year's expeditions will crack a 500 m deep hole at least. Bibima has had its fair share of the record!

Solomon Islands. Unlike P.N.G. there has been very little interest in the Solomon Islands' caves aside from a few local cavers in the islands over the years. This year however members of the New South Wales Institute of Technology Speleology Society will be making a reconnaissance trip there to investigate the potential for a full scale expedition in eighteen months' time. The trip is being organised by John Weir who did some caving there a few years ago.

That's the scene then. Heavy on overseas expeditions and light on local caving; some action out of Moresby and on the Gazelle, but very quiet elsewhere. Let's hope there's a bit more to write about by next issue.

* * *

WHERE DOES NIUGINI CAVER GO?

The last issue of N.C. for 1975 was sent to the following countries:

Australia	62 copies
Papua New Guinea	59
U.S.A	9
New Zealand	8
England	6
France	4
Bulgaria, Japan, Switzerland	2 each
Canada, Cuba, Hungary, Italy, Kenya, Rumania, South Africa, Venezuela	1 each
TOTAL	162

* * *

PAPUA NEW GUINEA KARST TYPES. 5. CREVICE KARST

G. Francis *

"The country on to the spur-top (2025 feet) was of the same terrible broken limestone. If one could imagine some immense coral island suddenly thrown up several hundred feet above sea-level, it would probably bring forcibly to mind the type of country through which we were now working. Such an upheaval might mean that the coral would become frightfully shattered and large fissures would appear. This was exactly what seemed to have happened in this district. The lines of fissures ran south-west to north-east, and standing in these cracks I could see that the dip was about 15° to the south-west. The clefts running along the strike were not regular. Though the limestones were covered with dense forest, very little soil was to be seen, and the roots of the trees clung to the rocks and among the decomposed leaves. Weathering had caused the rocks to become very jagged, with sharp razor-like edges jutting out. One carrier to-day received a nasty wound in the leg owing to a fall through some roots which covered a crevice underneath." (Austen, 1926).

.....

Crevice karst is terrain which has been dissected by systems of solutionally enlarged fractures. These fractures vary from 2 m to 20 m in depth and are up to 5 m in width. The smaller fractures are known as "grikes" while the larger ones are called "corridors". Well developed crevice karst is found in the Darai Hills, on Manus Island and in several other parts of Papua New Guinea. (Jennings and Bik, 1962; Williams, 1971). Wilford and Wall (1965) have described similar features in Malaysian karst areas. In the Fitzroy Basin, Western Australia there are systems of enlarged fractures up to 7 m wide and 30 m deep. This type of terrain has been termed "giant grikeland" by Jennings and Sweeting (1963).

The enlarged fractures may have bedrock floors but are often partially filled with soil or alluvium. In the humid tropics crevice karsts are densely forested with the trees growing in fissures being generally taller than the ones on the dissected limestone surfaces. Thus creviced terrain often presents a deceptively level appearance when viewed in the distance or from the air. Logs and other organic materials fall into the fractures, occasionally forming false floors which are treacherous underfoot. Even soil or sediment floors are subject to subsidence caused by solution of the limestone along the soil-bedrock interface.

Crevice karst often develops along two sets of fractures which intersect at right angles, forming networks which are rectangular in plan. The specific form that an area of crevice karst takes depends partly on the orientation and spacing of fractures and partly on its stage of evolution. Where fractures are closely spaced, finely dissected networks with narrow grikes and small residual blocks develop. In the Darai Hills, Australasian Petroleum Company geologists have described surfaces on which it is impossible to take two consecutive steps in any given direction (Williams, 1972). Where fractures are more widely spaced, the residual blocks are larger.

* Robb College, University of New England, Armidale, N.S.W. 2351. Australia.

Within an area of crevice karst, there may be variations in the depths of the enlarged fractures. Thus grikes and corridors can terminate in vertical drops or blind walls. In some cases vertical fissure caves make up part of the crevice network or occur as continuations of the enlarged fractures. Both Jennings and Bik (1962) and Williams (1971) have noted that crevice karst is often found along level surfaces in major valleys and cockpits. In Central Manus the enlarged fractures in these locations have formed through solution by groundwater moving slowly in a horizontal plane. A few grikes still contain groundwater, though subsequent stream incision has lowered groundwater levels and exposed many crevice systems. Once exposed, the crevices collect throughfall and surface flow. Vertical and overhanging walls often exhibit solution ripples. Parts of the walls are undermined by solution, resulting in collapses which drop chock-stones into the crevices. The crevices are widened by these processes and in the later stages of development the surface consists of pinnacles arranged in rows. These pinnacles vary in size according to the original spacing of fractures and depth of crevices. It is not certain whether other crevice karsts have evolved in this way.

Williams (1973) considered that crevice karst was best developed at elevations from sea level to 300 m and did not occur above 500 m. But he stressed that these observations were based on limited field work. Subsequently Caffyn (1974) described a small area of crevice karst about 2800 m above sea level in the Muller Range. It has also been noted at about 1200 m a.s.l. on the lower Waga River southwest of Poroma in the Southern Highlands (R. M. Bourke pers. comm.).

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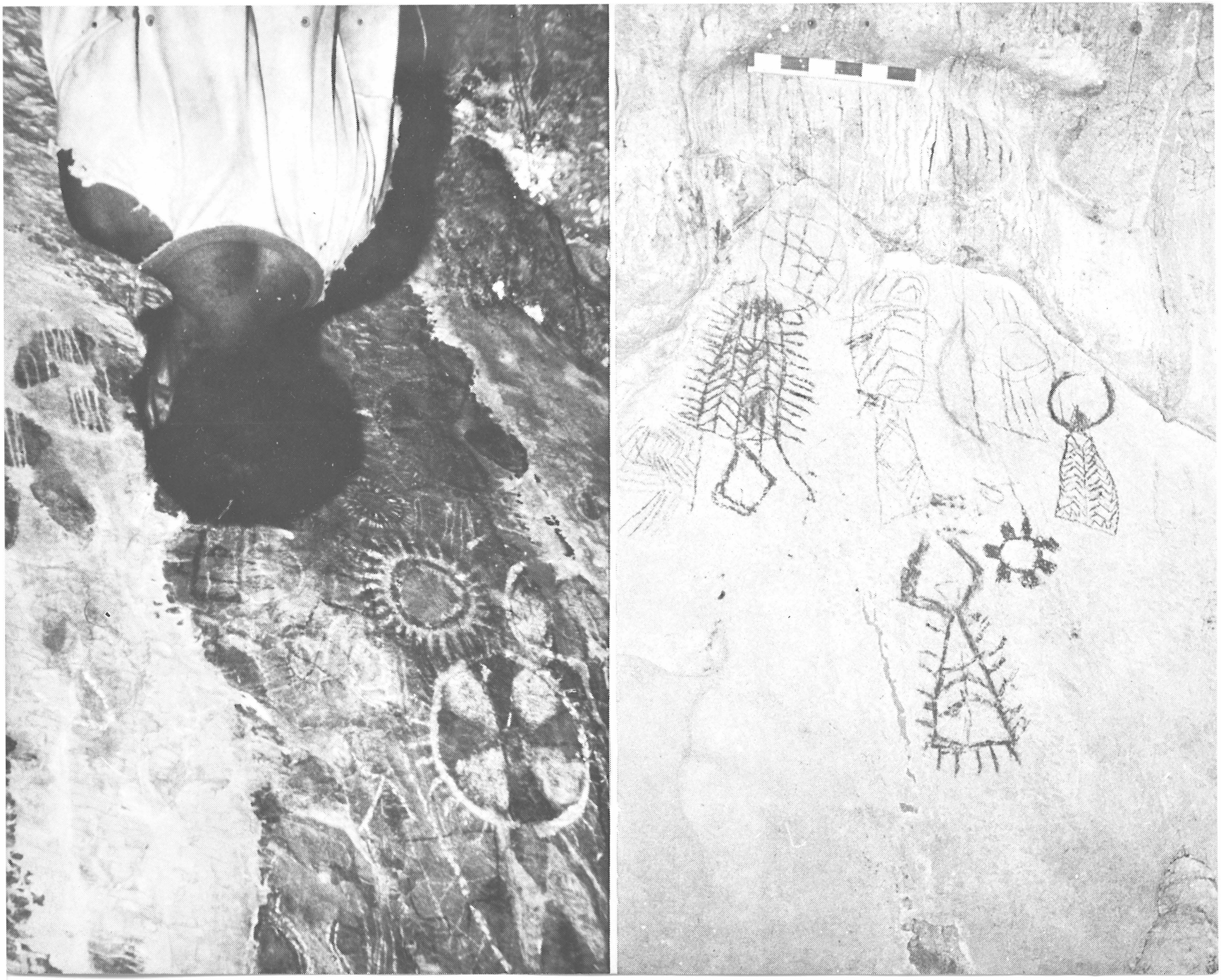
Crevice karst in the middle of the Kari polje, about 800 m N.N.W. of the Pokohol, Central Manus Island. (Photo by G. Francis).



SOME POINTS AND GUIDELINES FOR RECORDING ROCK ART SITES

Kevan A. Wilde *

Since Niugini Caver commenced publication, there have been twenty nine references to rock art in it. Most of these have been casual in nature, but some have been more significant, whilst two articles have been devoted entirely to the subject. In most cases the material has been tantalizingly brief and in consequence inadequate. If a site is worth recording, and most sites are, then it is worth recording in a manner that will be of use to persons carrying out research in this particular field. Accordingly, I have drawn up a series of guidelines mainly based on Specht (1975). Dr. Specht, who is the curator of anthropology at the Australian Museum, describes the current material from the western Pacific as being inadequate because of poor reporting. Although the following points are perhaps incomplete, if followed they should provide sufficient data to be of value.

1. The precise location of the site should be recorded. (Where possible vandalism is likely the precise location should not be given, but can be recorded and lodged either with the editor of N.C. or the Anthropology Department of U.P.N.G.)

2. Geological context should be described including a brief description of the general regional geology.

3. Describe the type of site; that is, cave, rock shelter, boulder cluster, cliff-face, or overhang.

Upper photograph. A villager examines rock art at Kafiavana near Goroka in the Eastern Highlands. The art occurs under a limestone overhang and in niches on a boulder. The site is a rich archaeological site, but the art is yet to be described. Bichromal circular and occuli motifs can be seen. The deposition on the right hand side of the photo indicates ancient age. At the same site are abstract human figures and diagonally bisected rectangular motifs. There is a rich variation at the site. (Photo by R. M. Bourke).

Lower photograph. Art in Ak Kagamugl, Chimbu Province. The three major figures in the photo belong to Gerigl Ambu figures. The one on the right hand side is the opposite way up. Almost all Gerigl Ambu figures appear with the head towards the cave floor. The designs are in monochrome charcoal.

Gerigl Ambu is said to be a malevolent guardian of the caves of the Singganigl and Kwinigl Valleys. One interpretation is that the figures represent a spider woman. Another is that they represent the spirit of a frog. The legend of Gerigl Ambu is also known from Bundi-Gembogl-Upper Chimbu areas. The figures mostly occur in Ak Kagamugl but it also occurs in Mebikombogo and in Ogi Oga Kombogo. (Photo by K. A. Wilde).

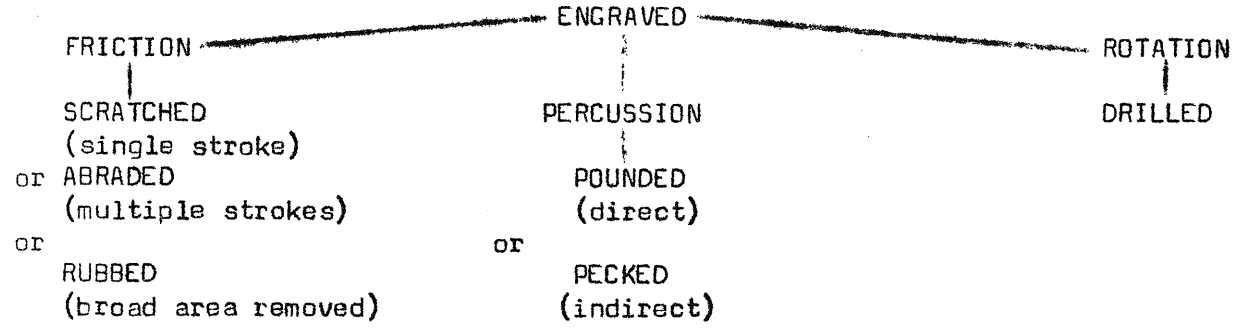
* P.O. Box 1055, Goroka, E.H.P., P.N.G.

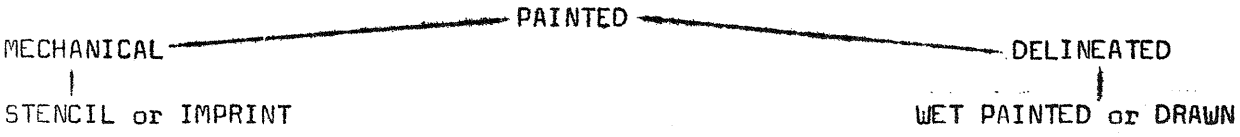
4. Description of topographical context; that is, valley, ridge, riverside, coastal, mountain, hillside, etc. In addition briefly describe the regional topography.

5. State land use; that is, habitated, cultivated, hunting and gathering, trade route etc.

6. Give elevation (even an estimation will suffice).

7. Describe techniques used. To assist in the classification of technique, I have presented in full a scheme reproduced from Specht's paper which should encourage consistency of description.





8. Colours should be described and materials identified wherever possible; that is, charcoal, white clay, red vegetable dye, blue mineral, etc. Where only one colour occurs in a design, it is said to be monochrome; two, bichrome; more than two, polychrome.

9. Method of applying the technique such as drawing with charcoal, painting with finger, blowing dye/paint by mouth, painting by imprint, striking with stone or pointed instrument, scratching with a sharp instrument, cutting or abrading with a sharpened object, should also be described where possible.

10. Form (design), motif, size and character of the art should be described as clearly as possible. Identification with the recorder's conception of form, such as fish-like, shield-like etc., is permissible, providing it is remembered that this does not reflect the original intentions of the artist. Where possible reference should be made to previously recorded material and photographs included. Description should be adequate but simple, taking into consideration whether the art is believed to be abstract or representational. Specht points out that context is the major criterion not symbolism. Current interpretation of design by persons inhabiting the area is sometimes valuable, but mainly its relevance lies with their conception of the form and not the artists. The re-occurrence of motifs and superimpositioning should also be recorded.

11. The recording of legends and myths are valuable to the preservation of the culture, but are of no value in assessing the nature of rock art unless it has been executed within living memory.

12. The condition of the art, rock surface and environment should be described; that is, whether the art is faded, clear, exposed, protected, located behind the drip-line of the shelter, cliff or cave; subject to wall-wash, located beneath an area of active deposition of minerals, or partly covered by moss or algae.

13. Where possible a survey or sketch should be made of the site and the art should be described in its relationship to survey points and the morphological characteristics of the rock surface. Failing this the extent of the site and art should be described.

14. Finally, but probably most important, the prohibitions, customs and wishes of the people currently owning the site should be respected at all times.

Specht defines rock art as follows: "Rock art includes all marking of presumed human origin on natural or prepared rock surfaces, except where it can be demonstrated that the markings are a by-product of a manufacturing activity unrelated to any designs at the site."

The author would appreciate any correspondence relating to rock art sites within Papua New Guinea as he is currently preparing a paper on the subject which is to be presented at the International Congress of Speleology in Sheffield next year.

REFERENCE

Specht, J. (1975). Rock Art in the Western Pacific. Unpubl. manuscript. The Aust. Museum. Sydney.

* * *

PHOTOGRAPHS WANTED

Got any interesting photographs of P.N.G. caves, karst, or people, insects, bats, art, etc. in caves? Niugini Caver usually runs five photos per issue and photos are needed for publication. Either slides or prints or negatives can be used. Prints should preferably be exactly 8" wide and about 5" or so high. They should show a lot of contrast and be printed with a matt finish.

All contributions welcome.

* * *

SOME CAVES AND ROCK SHELTERS OF THE YONGGAMUGL AREA, CHIMBU PROVINCE

D. Cole *

The following is condensed from a report written in the mid sixties.

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Location. The northern backslopes of the Porol Range, east of the Chimbu River, 5 km north of Kundiawa.

Area Description. The limestone is tertiary and dips 30 to 40° on the northern backslopes. The strike is roughly east-west. It is slightly southeast between Kerowagi and the Chimbu Gorge and turns slightly northeast between the Gorge and Chuave. A vertical scarp terminates the backslope with a cliff face up to 150 m high. Some outcrops of marls and slates are found in the landslips on the southern base of the scarp. See Brookfield and Brown (1963) for a good description of the geology of the area.

The northern backslopes are devoid of trees between the Chimbu Gorge and Mebik. The cover is kunai grass and much of the steep slope has been used for gardening. North of the Kwingl River, the ground rises rapidly to the foot of another series of limestone outcrops. This area is wooded with heavy undergrowth near the Kwingl and garden area mentioned above.

DESCRIPTIONS OF CAVES AND ROCK SHELTERS

The caves and rock shelters will be described starting from the Chimbu Gorge and ending with the rock shelter Au-Kombogo east of the gorge, directly across the Kwingl and slightly southwest of the Gorama rest house.

1. Vertical pothole. Name unknown. It is approximately 50 m west of the lower track on the edge of a kau kau garden and is marked by a small clump of brush. The vertical entrance is approximately 2 m (east-west) by 1 m (north-south). The cave falls vertically beyond the line of sight in conformity with the strike of the Porol Limestone. An estimate of the depth is 20-30 m.

Villagers believe that the entrance leads to a horizontal cave of considerable length. They claim that they have descended the drop in search of bats and birds. The cave has not been explored by the Goroka Caving Club (GCC). It is highly likely that it is related to Yerikomgui, the entrance of which is some 1.5 km east of Yonggamugl No. 1.

2. Goro-Kombogo. Wilde (1973) uses the name Kurakombogo for this cave. He also refers to it as Goro Kombogo (Kura Kombogo) (Wilde, 1975). It is short but interesting with two entrances, one of which lies within 5 m of the lower Kwingl track and approximately 100 m from Yonggamugl No. 1.

The main entrance is marked by a large gum tree. The low entrance (1.5 x .6 m) opens rapidly to a ledge approximately 1.8 x 2.5 m. A test pit was excavated by Peter White from the drip line at the entrance into this ledge. After 2.5 m the floor of the cave drops about 1.5 m to the main level over a distance of 3.5 m.

* Present address unknown

I excavated a small test pit 6.4 m from the entrance at the foot of a large boulder.

The reason for the intense archaeological attention is the obvious signs of habitation in the form of soot on walls and ceiling and a thick deposit of ash on the floor. This deposit is evident throughout the cave's length which is unusual. As well a great number of charcoal drawings have been found on the walls. The drawings are in the form of cross hatched lines. The general dimness of the cave as well as its rather obscured entrances probably weaken the chances of it being a rich archaeological site.

The recent history of Goro-Kombogo, as told by the inhabitants of this area, is that it was discovered about 80 years ago when a man was burning off the steep slopes which fall to the Kwingl River. It is said that the cave was used as a refuge during times of tribal fighting. A shield was placed over the entrance to further conceal it.

3. A Small Rock Shelter Used for Camping by the GCC. This shelter is formed by a slightly overhanging ledge which does not prevent a heavy fall of top soil from the steep slopes above. It was a house site at one time. It is located between Irukunguai and Goro-Kombogo. A fish trap is still intact on a ledge nearby and the mandibles of slaughtered pigs are hung on a limb a few metres north of the level area. The site is not suitable for excavation directed towards anything but the recent history of the area. The influx of clay and the influence of weather is too great to afford a permanent deposit of cultural material.

4 and 5. Two rock shelters located between Irakunguai and Mebik. The floor of No. 4 is too steep to allow a permanent cultural deposit, but No. 5 is more promising. A large boulder has fallen on to the floor, probably quite recently, and would have to be removed. Although this shelter is not the most promising site in the area, visiting archaeologists should take a look at it as a potential site.

6. Mabik. This is a long and interesting strike cavern. The entrance is large and soot covered. There is a considerable deposit of ash on its floor as well as a ledge behind the first entrance which contains some cultural material in the form of bits of charcoal. There are some rather interesting drawings in charcoal and white clay to the left of the entrance. Two test pits have been excavated at the cave mouth. One was by Peter White and the other by the author. It was found in both cases that penetration of heavy clay had reduced the archaeological possibilities of this site. Further investigation of this cave could however be profitable especially of the large level ledge in the rear of the main entrance chamber which may have escaped the clay penetration. Wilde (1973) uses the name Mebik Kombogo.

7. Bogan-Kombogo. About 400 m beyond Mabik on the main track south of the Kwingl River is the entrance to this unexplored cavern. The entrance is low and well washed with clay. It does therefore not provide much archaeological potential. Beyond the entrance, the cave opens to what might prove to be an extremely interesting passage from a speleological point of view. The passage extends south from the entrance for about 30 m and then a 4.5 m vertical drop is encountered. Beyond this point no exploration has been attempted. Village people

claim however that the cave is long. Near the cave's mouth in the twilight area, a number of small deposits of heat fractured stones were found. These are said to be connected with the killing of pigs but no ethnographic follow-up has been made.

8. Au-Kombogo. About 60 m southeast of Bogan-Kombogo, the first of two large rock shelters face north across the Kwingl River. The second shelter, about 30 m further east is also called Au-Kombogo. These shelters are perhaps the most interesting from an archaeological point of view of all the shelters and cave mouths described herein. They are large, open to sunlight, protected from weather, allow little penetration of heavy clay and have level floors. Beyond the dropline the ground drops abruptly to the banks of the Kwingl about 30 m below. The main track running parallel to the Kwingl crosses the entrances of these shelters only a few metres below. The shelters provide a sufficient platform to contain cultural deposits of considerable volume. Some signs of recent habitation are evident.

9 and 10. Singga-Komgogo and Ogle-Ogla. Directly across the Kwingl River from Au-Kombogo No. 1 and opening on river level is the rather charming entrance to an unexplored limestone cavern Ogle-Ogla. (Wilde (1975) refers to this as Ogioga Kombogo). Entrance is via a small corridor to a large daylight chamber. The Kwingl enters the daylight chamber from the east and leaves to the west, causing a grotto-like setting within the cavern. Above the river a number of terraces of light soil show sign of habitation. There are some paintings on the walls of the cave. Northeast of this daylight passage, a small passage leads away. It was followed for 60 m or so and shows every promise of continuing. Southeast of the daylight chamber, a small passage leads down a clay bank and seems to end. However by removal of a pile of heat fractured stones, a passage was found which is very narrow but opens to a larger passage. It is rather puzzling why the passage has been blocked by the inhabitants of the area. Although time has not allowed exploration of this passage, it may be worthwhile. Reports have been received which state that a number of ground riverstone objects have been found in Ogle-Ogla.

Singga-Kombogo is a second entrance to this system about 25 m above Ogle-Ogla. It has not been explored.

REFERENCES

Brookfield, H. C. and Brown, P. (1963). Struggle for Land: Agriculture and Group Territories Among the Chimbu of the New Guinea Highlands. Oxford University Press. Melbourne.

Wilde, K. A. (1973). Some Caves of the Kundiawa Area. Niugini Caver 1(4):95-103.

Wilde, K. A. (1975). Rock and Cave Drawings of the Singganigl and Kwinigl Valleys of the Chimbu Gorge Area of the Chimbu District of Papua New Guinea. Occas. Papers in Anthropology 4:5-34.

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SOME RECENT LITERATURE

A number of publications relevant to P.N.G. speleology have appeared recently. Some of these are:

Proceedings Tenth Biennial Conference Australian Speleology Federation. Ed. A. W. Graham. (1975). This is available for $A5 from the University of Queensland Speleology Society, c/- The Union, University of Queensland, St. Lucia, Qld. 4067.

The proceedings include five papers on pseudokarst including "Pseudokarst Caves of the Gazelle Peninsula, New Britain, Papua New Guinea" by R. M. Bourke on pp 16-19. The other P.N.G. paper is "Notes on the Rock Art of Aibura Cave, Kainantu, Eastern Highlands District of Papua New Guinea" by K. A. Wilde on pp 57-68. Other papers include "Preliminary Speleology Reconnaissance of Fiji and Tonga" by J. R. Dunkley on pp 107-110 and "How Well Off is Australia for Caves and Karst? A Brief Geomorphic Estimate" by J. N. Jennings on pp 82-90, and "Pseudokarst: Definition and Types" by K. G. Grimes on pp 6-10.

"Rock and Cave Drawings of the Singganigl and Kwinigl Valleys and the Chimbu Gorge Area of the Chimbu District of Papua New Guinea" by K. A. Wilde. Occasional Papers in Anthropology No. 4, 1975 pp 5-34. Anthropology Museum, University of Queensland. This paper is an expanded version of the one published in N.C. 2(2):163-180. The complete Occasional Paper may be purchased for $A2.75 plus postage from Dr. P. K. Lauer, Anthropology Museum, University of Queensland, St. Lucia, Qld. 4067. Surface postage for this publication is $A2.15. There are 10 other papers in this number including one on tattooing from Goodenough Island and another on the ecology of subsistence on the Wopkaimin Mountain people of the Western District.

The Australian Museum's publication Australia Natural History 18(6) is devoted to caves of Australia and is a worthy addition to any caver's library. Papers by a number of well known Australian cavers cover the following aspects: history, exploration, mineral decoration, geomorphology, fossils, rock dating, aboriginal man, ecosystems and conservation.

This number can be purchased from the Australian Museum, P.O. Box A285, Sydney South, N.S.W. 2001. for $A1.45 (P.N.G. and New Zealand price. Other overseas countries $A1.70).

Ancestral and Prehistoric Sites in the Purari River Basin. Ed. P. Swadling. Dept. of Anthropology and Sociology, U.P.N.G. 1975. In this monograph Ms. Swadling lists recorded ancestral and prehistoric sites from the upper reaches of the Purari River system to the south coast of New Guinea. Most of the sites are in the five highland provinces. Many of these are located in caves or rock shelters. One is struck both by the number of sites that have been gathered in the P.N.G. Archaeological Survey File, the source of this information, and at the same time by the paucity of information when the actual number of sites that must exist is considered. It is gratifying to note that the information published in N.C. is being recorded in the Survey. The cover features the Spider Woman "Gerigl Ambu" from the Chimbu, first published in N.C. 2(2).

P.N.G. has featured in the British caving magazine Descent recently. Number 31 (May/June, 1975) included an article on the coming 1975 British trip and included a number of photographs from P.N.G. with one of the Iaro River Cave on the cover. Number 32 included an article on the coming (1975) Lelet Expedition giving a brief history of caving expeditions to P.N.G. (as distinct from expeditions from P.N.G. as in The British Caver 63:6).

Numerous newspaper articles on P.N.G. caves in the Post-Courier, Island Trader (Rabaul), Highland News (Goroka) and in Australian, British and even Bulgarian newspapers have appeared in the last year. Most of the articles refer to the British expedition.

R.M.B.

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CORRECTIONS NIUGINI CAVER 4(1)

p4. The photographs were printed upside down. The "left photograph" is the one with two figures in it.

p27 para. 5 line 1. This line should read:
N22. Umarah and N23. Kistobu, Kolonoboi Mission. See Gallasch (1974a) for descriptions.

p38 para. 2 line 3. The Muller expedition was in 1973 not 1972.

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PAPUA NEW GUINEA SUBSCRIBERS TO NIUGINI CAVER VOLUME 4

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SHAROTT, Ali	Chuave High School, Chimbu Province.
STIBICK, Jeff	D.P.I., P.O. Box 2417, Konedobu, N.C.D.
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VAN AMSTEL, John	P.O. Box 41, Kundiawa, Chimbu Province.
WAU ECOLOGY INSTITUTE	P.O. Box 77, Wau, Morobe Province.
WILDE, Kevan and Beverley	P.O. Box 1055, Goroka, E.H.P.
WILSON, Lindsay	National High School, Keravat, E.N.B.

This list has 35 subscribers from 9 provinces with a concentration of subscribers in Port Moresby, on the Gazelle Peninsula of New Britain, and throughout the highlands - a situation that has not altered much since the last list was published at the end of 1974.

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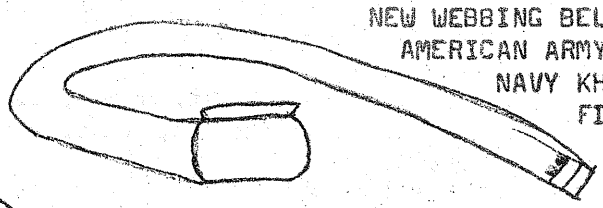
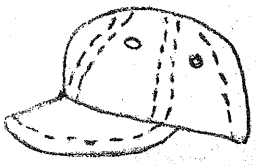
NEW GUINEA DISPOSALS

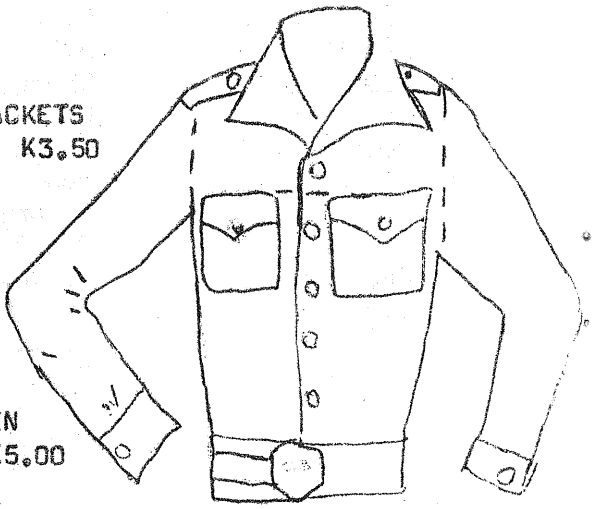
Ph. 92 1263 P.O. Box 71, RABAUL. PAPUA NEW GUINEA. Ph. 92 7131 ah.



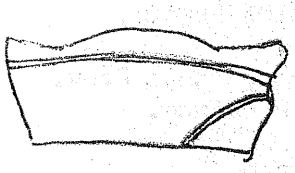
NEW WEBBING BELTS 1¼",
AMERICAN ARMY, WHITE, BLACK,
NAVY KHAKI K2.50
FITS UP TO 42"



AMERICAN GI CAPS
USED K2.50



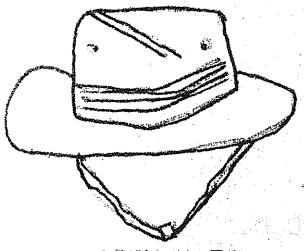
BATTLE DRESS JACKETS
GOOD CONDITION K3.50



NEW DENIM JACKETS
OLIVE WITH BRASS
BUTTONS K10.50

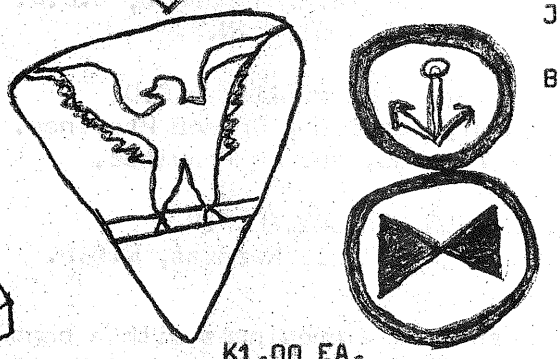
FORAGE CAPS
NEW K1.00

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



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

SHOULDER PATCHES



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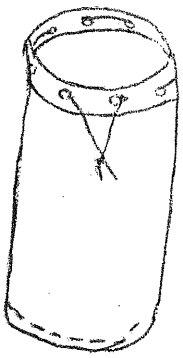
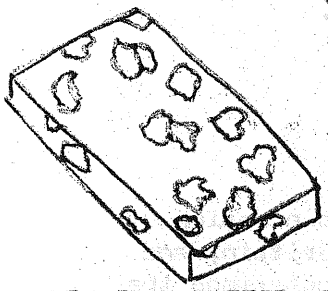


KIT BAGS
WHITE NEW K3.50
WHITE USED K2.75
JUNGLE GREEN USED
BUT GOOD K5.50
BROWN K3.50



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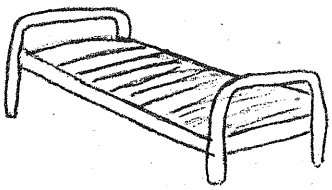

STEEL BEDS 2' 6" x 6' 3"
GOOD USED CONDITION
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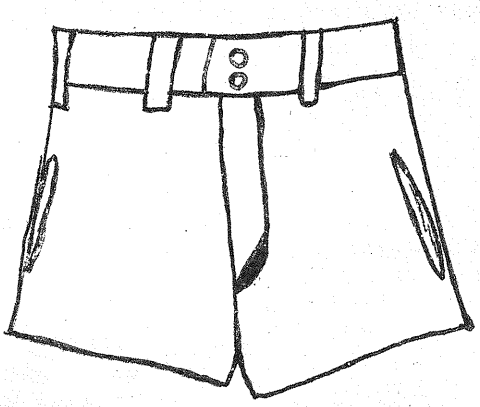
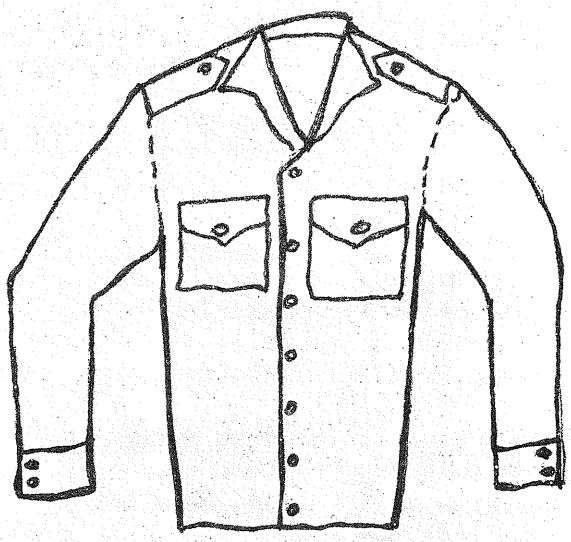


NEW ARMY SHORTS
NAVY WHITE KHAKI JUNGLE GREEN
SIZE 27" - 40" K3.50
USED K1.50 - K2.50

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
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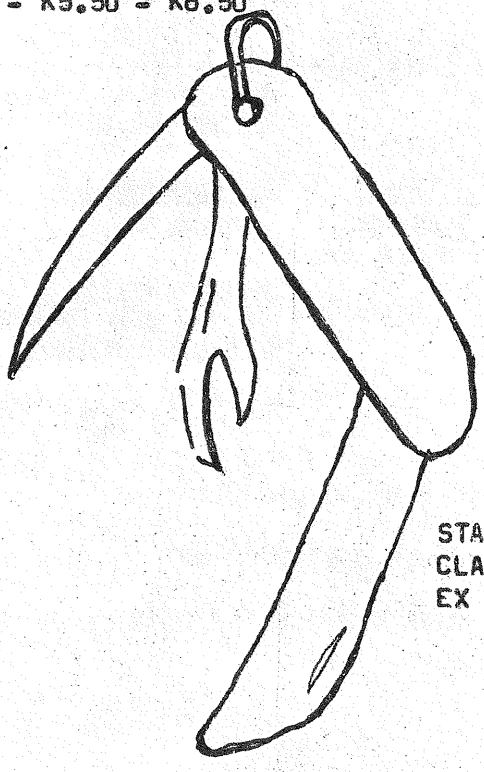

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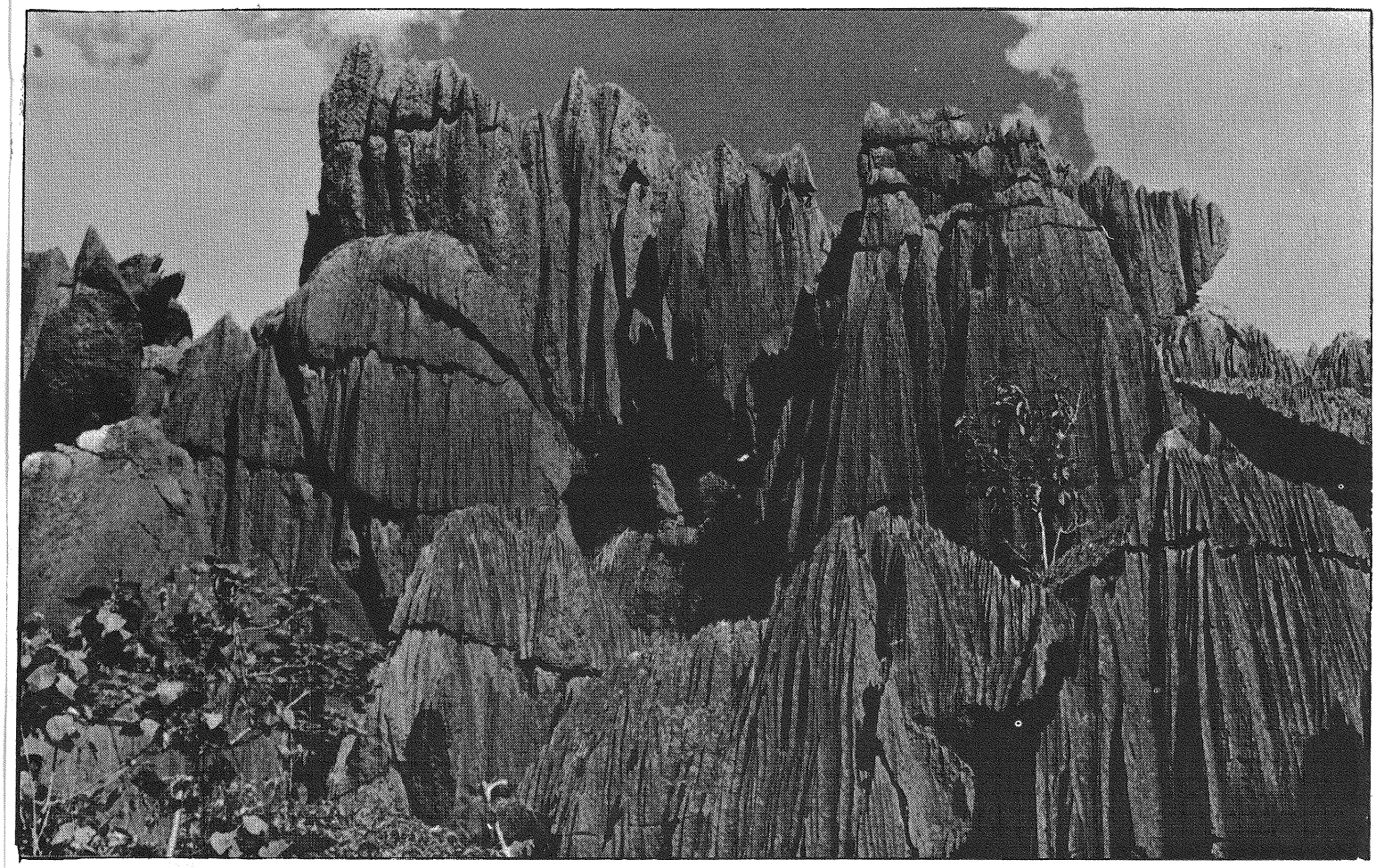

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