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Cover Photograph. Engravings in the wall of Umarah cave, New Ireland. The engravings appear to be old and have not been previously recorded. The photographic field is about 2.5 m wide (See 'Cave Giants of New Ireland?')

Photo by Hal Gallasch.

* * *

CAVE GIANTS OF NEW IRELAND?

H. Gallasch *

It was stated in a previous article (Gallasch 1974) that recent upraising of parts of the eastern coast of New Ireland has resulted in subterranean drainage of the coastal belt at a relatively shallow depth. Many small caves occur and these can be entered from the bottom of doline structures or gorges eroded into the limestone. Such is the case with Umarah and Kistobu caves, located in newly cleared garden areas of the Kolonoboi people. These caves are about forty minutes from the main east coast road. Because of the dense regrowth in the area local guides are necessary to locate the entrance doline. The steep, thickly wooded sides slope down to a stream at a depth of about 20 m.

In the entrance of Umarah cave, on the upstream side, the creek has cut a narrow path through a platform of limestone 8 m wide. Above this, on a smooth wall of the cave and well sheltered from the entrance, are four faces carved into the limestone. These faces are outlined by grooves worn 5 cm deep into the stone. Associated with the faces are a series of lines and small holes. (See Figure) With the exception of the lower face, which appears to have been done at a much later date and is a rough copy of the others, the engravings are weathered and seem very ancient. They are sited about 3 m above the floor. This together with the size of the faces has led to a belief by the local people that they were drawn by giants who peopled the land before humans came to New Ireland. Questioning of the people indicated that they knew nothing about the origins of the engraving, neither did they have any stories about the cave as they did have about other caves in the area.

These engravings would appear to be unique for New Ireland and as far as is known have not previously been recorded.

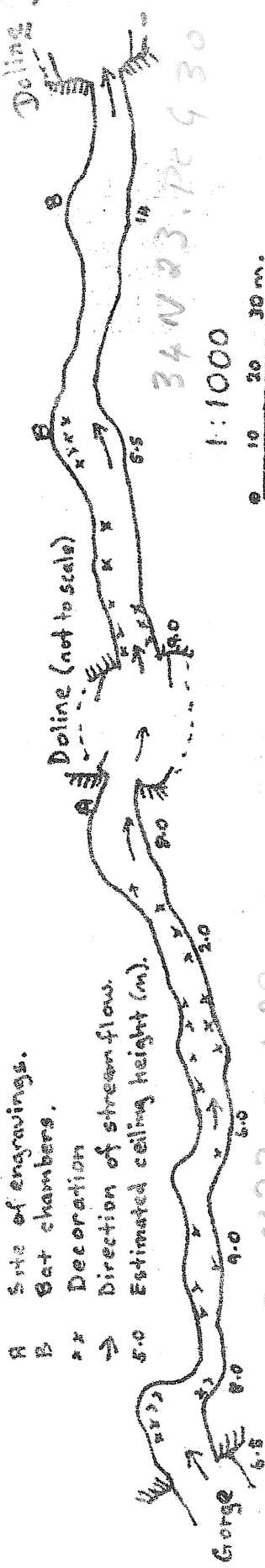
The creek can be followed upstream from the engravings through a passageway hung with large stalactites. This cave shows evidence of several creek levels, the current level being in a crevice up to 2 m deep in the former wide floor. After about 100 m the surface is again reached, in the bottom of a shallow gorge. From here to its source in the central mountain range the creek remains on the surface.

Downstream from the engravings the creek crosses the floor of the doline to enter another cave. At this place there are only a few metres of limestone over the entrance. The lower cave, of approximately the same length as Umarah, contains two

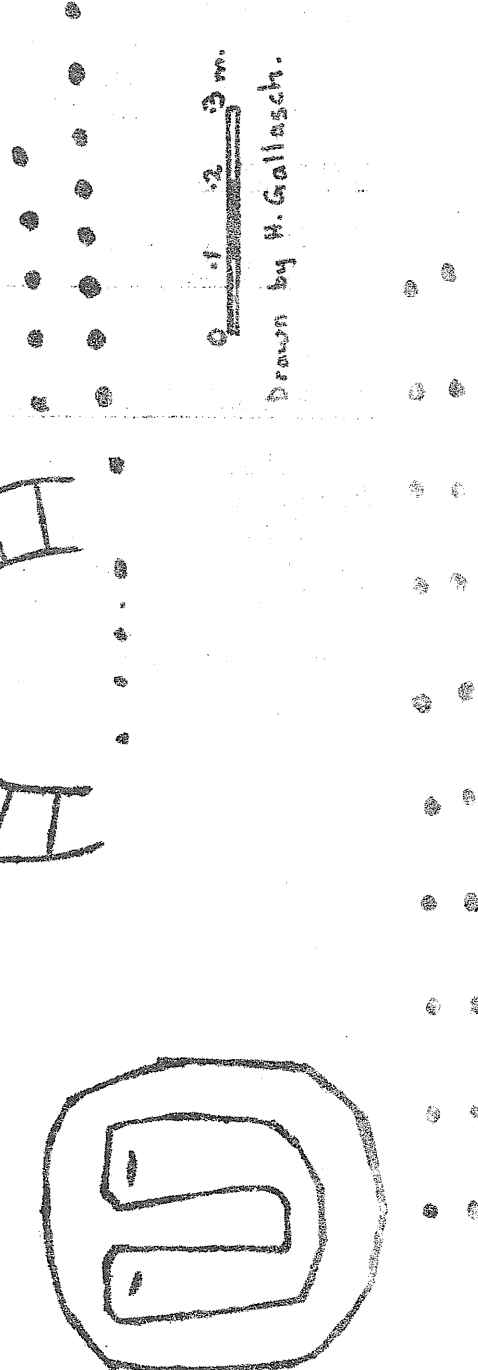
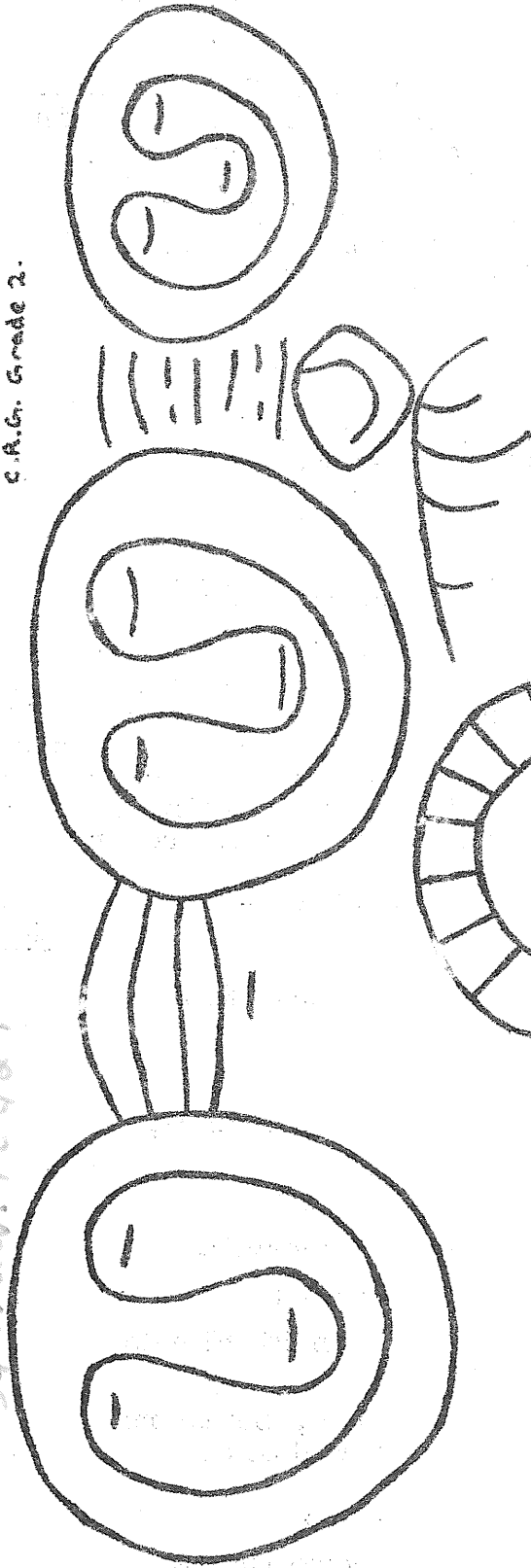
* D.A.S.F., Keravat, E.N.B., P.N.G.

UMARAH CAVE

- A Site of engravings.
- B Bat chambers.
- xx Decoration
- Direction of stream flow.
- 5.0 Estimated ceiling height (m).



KISTOBU CAVE



0 10 20 30 m.

C.A.G. Grade 2.

Drawn by H. Gollasch.

caverns which house many bats and flying foxes. These are particularly numerous in the lowest chamber, in the twilight zone, where large poles and bamboos have been positioned to aid the villagers in capturing them. This cave, known as Kistobu, emerges into another long doline. From the doline the stream again goes underground but cannot be followed. It is said to emerge into the Mi River which enters the sea on the boundary of Belik Plantation.

REFERENCE

Gallasch, H. (1974) Some Burial Caves in Papua New Guinea.
Niugini Caver 2 (1): 138-141.

* * *

A REVISED LIST OF THE DEEPEST CAVES IN THE SOUTHERN HEMISPHERE

This list has needed revision because of a discovery by a British expedition (Imperial College) in Peru in 1972, resurvey of Harwood's Hole at Christmas, and recalculation of the depth of the two deepest caves found on the Muller Range expedition last August - September. (The original calculations were made in the field.) This list does not claim to be an official one nor is it accurate to the last half metre or foot.

The revised list is as follows -

	<u>Metres</u>	<u>Feet</u>
Bibima cave, Chimbu District, Papua New Guinea	494	1620
Simla de Milpo, Peru	407	1335
Harwood's Hole, Takaka Hill, Nelson area, New Zealand	356.5	1169
Gorgoroth, Mt. Arthur, New Zealand	346	1136
Khazad-dum, Junee-Florentine, Tasmania	322	1054
Blackbird, Mt. Arthur, New Zealand	316	1037
314m Uliguria, Muller Range, Southern Highlands District, Papua New Guinea	313	1028
314m Kanada Heiowa Heia, Muller Range, Southern Highlands District, Papua New Guinea	305	1000

* * *

R.M.B.

THE NEW CONTRIBUTOR

Laurie Le Fevre was a member of the Port Moresby Speleological Society in the early sixties. He caved at Javarere as well as in the highlands.

* * *

NOTES ON ROCK ART AND BURIAL CAVES OF THE SINGGANIGL AND
KWINIGL VALLEYS OF THE CHIMBU DISTRICT

K. A. Wilde *

The Kundiawa area has much untapped potential for scientific and sporting speleology. There are many unknown and unexplored cave systems with much scope for the archaeologist, ethnographer and caver. There are many fascinating myths and legends to be collected before the deaths of the old men snatch them away forever. These notes deal with the rock drawings and burial caves accompanied by brief notes on Chimbu prehistory and cultural associations.

AK KAGAMUGL SITE

Ak Kagamugl Cave sometimes known as Kurakombogo or Yonaminge¹ is situated in the region of the Chimbu Gorge within the land boundaries of the Ogondia Clan of the Kumanagu tribe. In order to protect the cave and its contents the exact location is not given.

Description. The entrance to the cave is 4.5 m wide and 2.2 m high. To the front of the entrance is a semi-circular area 10 m wide and 5 m long. The entrance is otherwise surrounded by bush. The entrance is situated directly beneath a substantial overhang which affords protection to those drawings that appear on the rock face around the entrance. The area is maintained and kept clean and free of bush thus indicating that the site is still cared for by the Ogondia. The cave proper is 15 m long and at its widest point is 3 m. The roof varies in height but is an average of approximately 2.5 m high. The entrance passage is 4 m wide and slopes upwards at about 20°.

The floor of the cave is consistently dry and is constituted of fine earth. Most of the formation in the cave is 'dead' with the exception of isolated roof formation that is still in the process of growing. The cave, therefore, is almost completely dry. A variety of fauna inhabit the cave and cave swiftlets, rats, cave crickets, beetles and cockroaches have been observed but no specimens have been collected or identified. It was observed that the rats had gnawed many of the skulls leaving quite large holes in them.

It is said that the deceased of the Ogondia, Uramakani, Gowamu, Ukani, Auakani, Enduguakani, Yonggamugl, Simbugu, Wauga,

1 Yonaminge is the Kuman term for a place of burial.

* P.O. Box 113, Madang; or P.O. Box 1055, Goroka, Papua New Guinea.

Konandagu, Aruku, Mitnande and Kurumbu Clans have been buried in the cave. It is also said that the cave was almost wholly used for the burial of warriors killed in battle, but had on occasions, been used to dispose of persons deceased from natural causes. Most of the elders will not enter the cave because of evil spirits apparently due to the fact that they have also buried their enemies there in the past. In the centre of the cave is a collection of bones and a skull lying on the remains of a bark stretcher and is said to be the remains of a warrior killed in a dawn attack some 20-30 years ago. A number of other human bones are present on the floor of the cave accompanied by a number of woven arm bands and belt loops. A small number of unidentified wooden artifacts were also observed.

West of the entrance is a small burial cavity approximately 2 m long and 1 m wide containing a number of skulls, ribs, vertebrae and other small bones. Also present are pieces of wood and decayed matting. The entrance is concealed by branches and logs and is only 0.3 m high. Monochrome charcoal drawings appear profusely upon the overhang at the entrance and upon the walls in the interior of the cave..

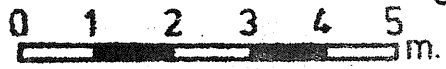
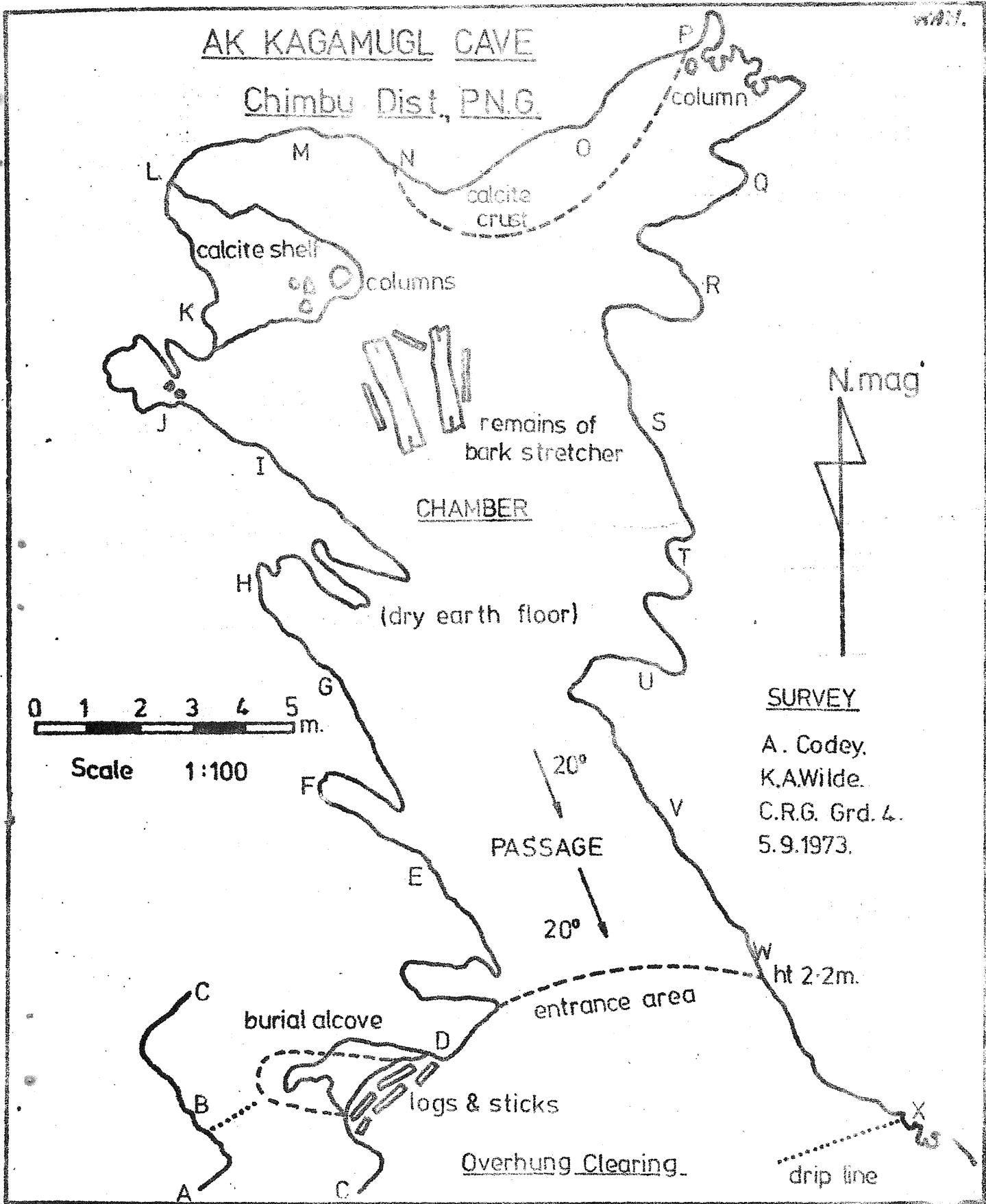
Interpretation of Designs and Motifs. Unfortunately (in terms of interpretation) unlike many Australian sites, as far as is known, the artists who executed the drawings dealt with in these notes are long since dead and all the drawings dealt with are beyond living memory. However, the local people of the area have their own interpretations of a small number of the motifs and figures, and where possible these interpretations have been confirmed by several informants.

Technique. All the drawings observed by the author are monochrome and executed in charcoal. No ochre paintings were observed in the caves of Singganigl and Kwinigl Valleys; ochre paintings have, however, been observed by the author and others, on a number of rock faces and overhangs in the area dealt with in these notes. As far as is known the drawings are previously unrecorded and undated. Ak Kagamugl burial cave was previously unvisited by Europeans, according to local residents; but the other sites mentioned are relatively well known.

Some authorities, for example Lommel (1966), say that the charcoal drawings of New Guinea date from about the seventeenth to nineteenth centuries AD, and further, that the ochre paintings are probably thousands of years older. However, the author was informed by local inhabitants of the Chimbu area that ochre paintings had been executed both before and after the arrival of the European, thus placing the most recent ones within the last thirty years. Information from local residents indicates that most of the charcoal drawings in the Singganigl and Kwinigl Valleys had been executed outside of living memory.

AK KAGAMUGL CAVE

Chimbu Dist., P.N.G.



Scale 1:100

SURVEY

A. Codey.
 K.A.Wilde.
 C.R.G. Grd. 4.
 5.9.1973.



The figures that appear in Fig. IV are possibly derived from the squatting figure that is common throughout Papua New Guinea. Some variations of the figures that appear in Fig. II are possibly related to the x-ray style that is common throughout Papua.²

Classification. The following motifs and figures with the exception of the Gerigl Ambu figures (Fig. II) appear throughout all the sites.

Fig. I

Crescents

- 1.(a) Crescent motif possibly derived from 'kina' a shell decoration worn around the neck by both males and females throughout the highlands, including the Chimbu.
- (b) Solid crescent motif similar to (a).
- (c) Open crescent motif similar in shape to both (a) and (b), but with thin, vertical lines at each extremity.

'Flowers'

2. 'Flower' or 'necklace' motif - origin unknown.

'Leaf'

3. 'Leaf' motifs - origin unknown. (This motif was also observed by White and White (1964) at Aibura Cave in the Eastern Highlands.)

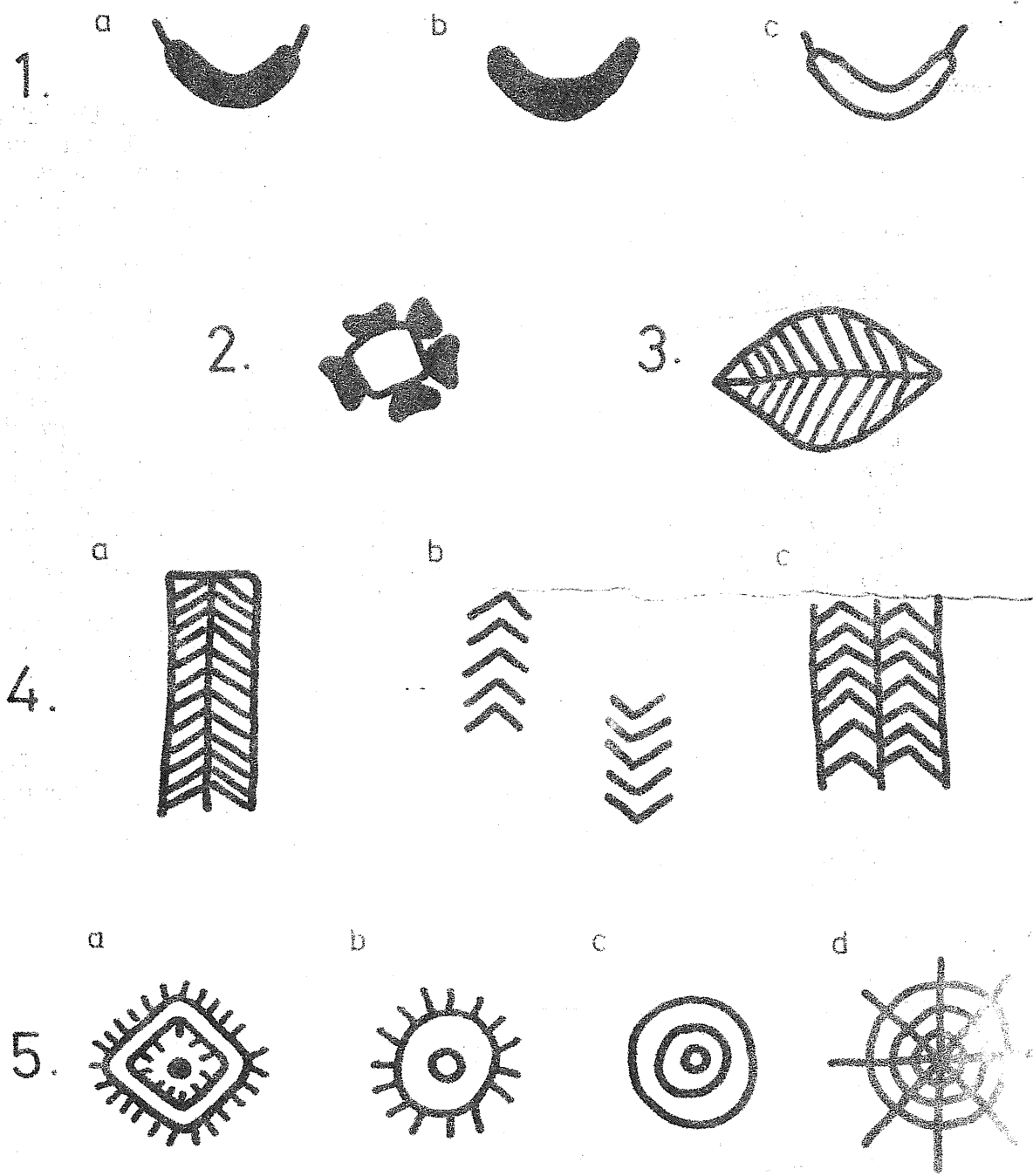
'Chevrons'

- 4.(a) Enclosed rectangle containing bisected chevrons.
- (b) Chevron motifs.
- (c) Double bisected chevrons bordered by vertical lines.

'Eye', Occuli and Circular Motifs

- 5.(a) 'Eye' motif.
- (b) Circle with 'sun-rays'.
- (c) Concentric Circle motif.
- (d) Concentric Circle motif with 'spokes' or radiating lines.

² This is an unconfirmed opinion of the author.



Basic classification of drawings found at sites

Fig.I

Fig. II

Spirit Figure - Gerigl Ambu

The following is the interpretation placed upon the figures by local inhabitants. Fig. II (a) - (k) are eleven variations of the spirit figure Gerigl Ambu, said to be a malevolent spirit and bringer of disease and death. It is said that he has the appearance of a human being with the flesh and body of a frog. Some say that he and Yogondo (see Fig. IV) are responsible for the rock drawings and others say that the bats and flying foxes (Wela) leave the caves at sunset and gather charcoal from village fires, then return to the caves and rock faces where they draw the figures and patterns. There are over thirty variations of this figure in Ak Kagamugl and yet it has not been observed at any of the other sites in the area, whereas variations of the Yogondo figure are to be seen frequently at all the sites. With only a few exceptions the Gerigl Ambu figure appears 'upside down' and standing upon its 'head', Fig. II, with the exception of (k). The base of this figure as referred to in the text, is the top as seen from the floor of the cave; and similarly, the 'top' is the bottom as seen from the floor. Figures (d) and (e) appear to be only partly finished, or at least incomplete when compared to the rest of the figures.

Gerigl Ambu is translated as meaning Spider Woman. The connection between the above description and the translation is unknown and may be due to local variations of the Gerigl Ambu myth. The name is often used in land fertility rites.

Fig. III

Triangle and Diamond Motifs

- 1.(a) Chain of linear diamond patterns enclosed by vertical lines.
- (b) Part linear and part solid triangles in a chain and enclosed in vertical lines, similar to (a).
- (c) Chain of solid triangles joined at the apexices to form open diamond patterns in the centre.
- (d) Concentric diamond motifs with spaces filled-in in between.

Triangle and diamond motifs appear commonly throughout the Chimbu area, being carved on house posts and bark

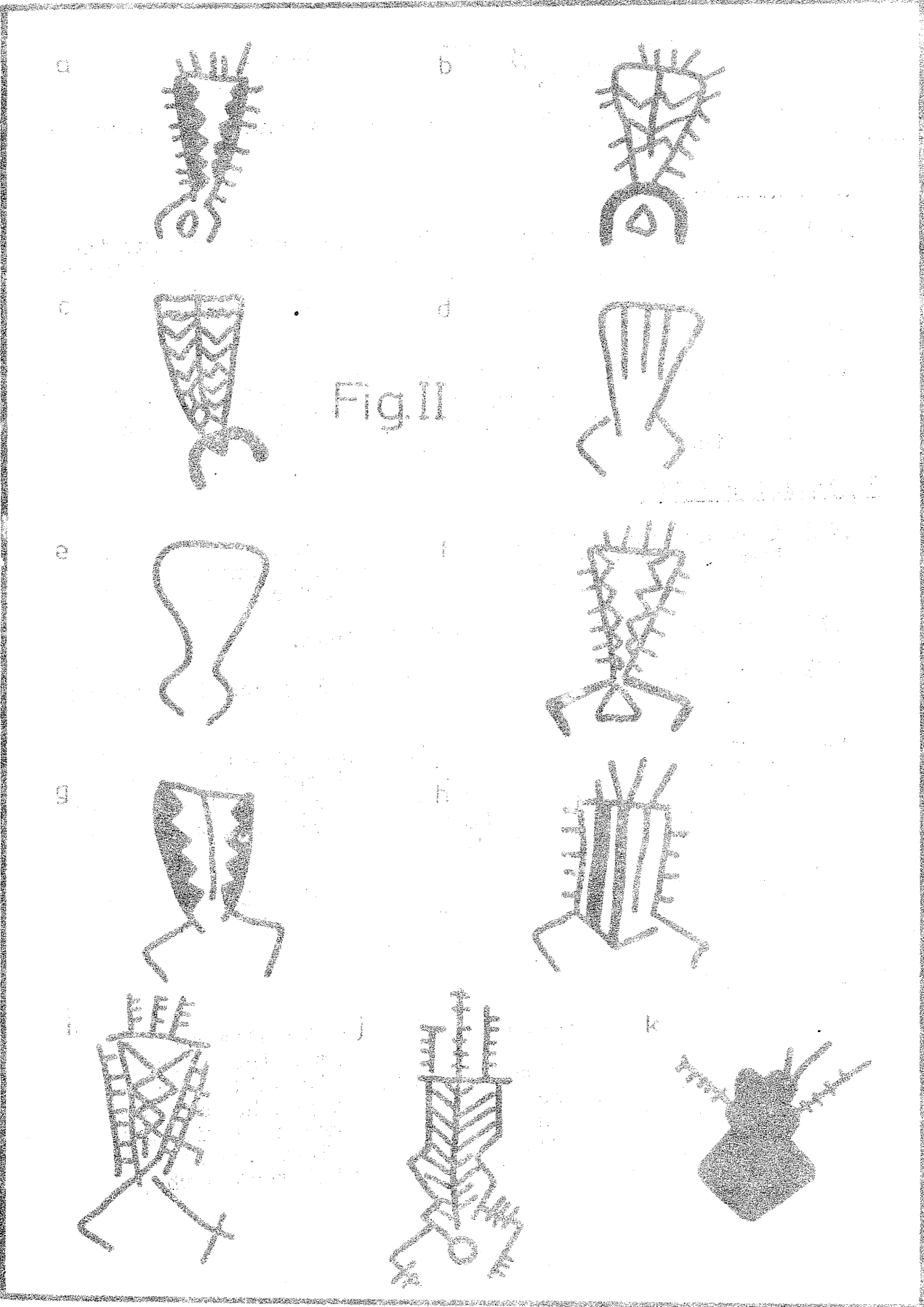


Fig. II

belts; tattooed on bodies for self decoration and woven into arm bands and bamboo blinds.

'Shield' Motifs

- 2.(a) 'Shield' motifs, many of which appear throughout the burial chamber of Ak Kagamugl. The origin is unknown but they are possibly related to Gerua boards.
- (b) Concentric 'shield' motif.
- (c) Concentric 'shield' motif containing a further 'shield' with short lines drawn at rightangles and filling the space between the two shields. The innermost 'shield' contains a design of chevrons.

Rectangular Motifs

- 3.(a) Rectangular motif containing patterns of vertical lines, chevrons and bisected chevrons with 'rays' drawn at rightangles to the circumference.
- (b) Rectangle containing vertical lines.
- (c) Rectangle, similar to (b) bisected by one horizontal line.
- (d) Rectangular motif with an interior of vertical lines of varying thicknesses, with horizontal lines drawn between the left side of the rectangle and the first interior vertical. 'Rays' are drawn from the uppermost three sides of the rectangle.

Many variations appear throughout the chamber of Ak Kagamugl, but only the simpler types such as (b) and (c) appear at the other sites.

Anthropomorphs

1. 'Lizard-like' anthropomorphs known locally as Yogondo, a spirit figure that appears at sites throughout both of the valleys and the gorge; and is said to have the build and appearance of a child or youth, and the flesh of a bat (Wela). He is commonly known by village elders who will readily talk about him. They are reluctant to discuss Gerigl Ambu, thus indicating that perhaps

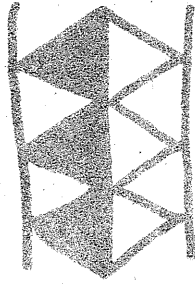
3 Ochre painted ancestor boards

Fig. III

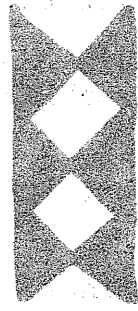
a



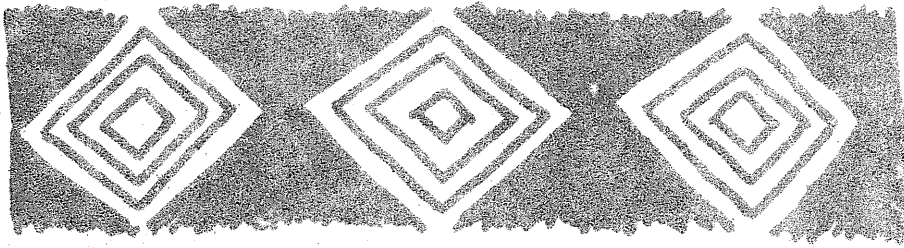
b



c

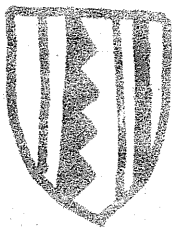


d

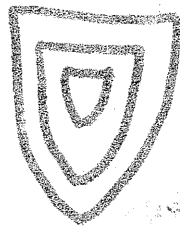


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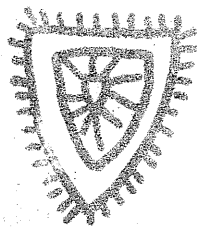
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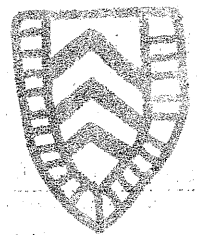
b



c

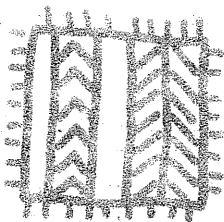


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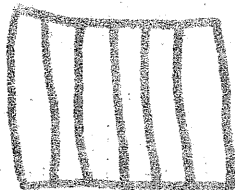


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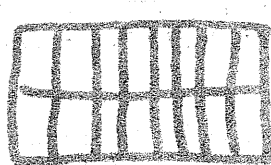
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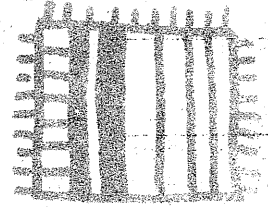
b



c



d



Yogondo is considered to be less harmful. 'Lizard-like', but painted, anthropomorphs were observed at Aibura. (White and White, 1964).

2. Anthropomorph with head, arms, legs and 'tail' but lacking fingers and toes - origin unknown.
3. Anthropomorph with head, arms, fingers, legs and toes, but 'tailless' - origin unknown.
4. Headless anthropomorph with arms and legs, but no fingers or toes - origin unknown.
5. Anthropomorph with head, arms and legs but no fingers or toes - origin unknown.
6. Long-bodied anthropomorph with 'tail', head, arms and legs but lacking fingers and toes - origin unknown.

Figures 1, 2, 3, 4, 5 and 6 appear throughout the Ak Kagamugl system. Variations of figure 1 only appear at Ak Kagamugl and Mebikombogo. Figures 1, 2, 4 and 6 could, due to the 'tails' be classified as zoomorphic rather than anthropomorphic. Whether the 'tails' are in fact 'tails' or exaggerated sexual characteristics is debatable and the original intention of the artist is of course unknown.

.....

N.B. The figures are not drawn to scale.

For ease of description the walls of the cave have been divided into sections (see survey) from A - X. A vertical section was not made due to the very uneven morphology of the roof. For reasons of space the following notes are very brief.

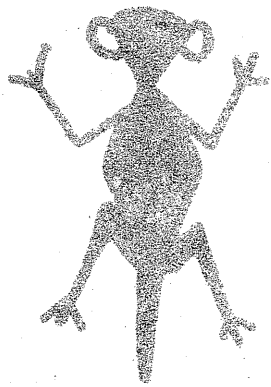
Section A - B. 'Eye' motif + chain of linear triangles and diamonds + chevrons + 'leaf' motifs - superimpositioning, faded, protected and dry.

Section B - C. Faded and indistinguishable triangular and diamond motifs - with some algae obscuring drawings.

Section C - D. Burial Cavity. 'Eye' motifs + chains of bisected diamonds + triangular motifs - faded but protected.

Section D - E. Alcove 3 m above and left of the entrance. Concentric circles in solution hollow + multiple linear zig-zags + chevrons + chains of diamonds (Fig. III, 1, c) + linear patterns of no definite form, to the author. At head level is a Yogondo figure + two 'eye' motifs in solution hollows. Continuing into

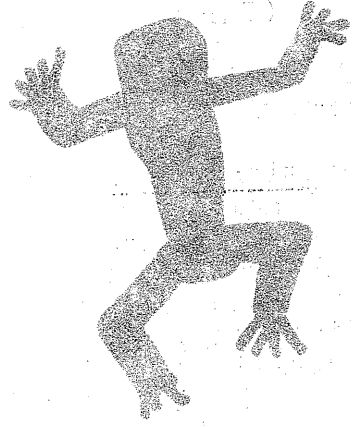
1.



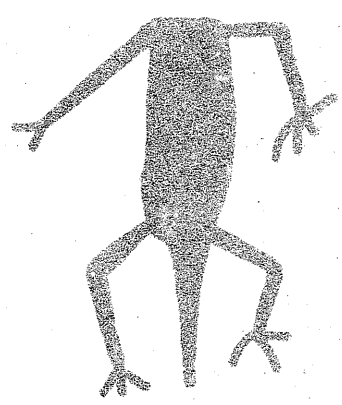
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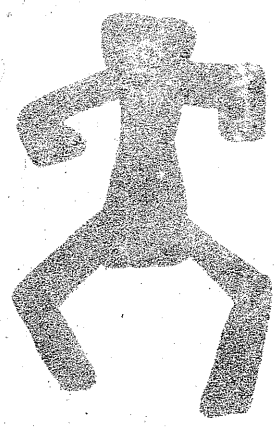
3.



4.



5.



6.

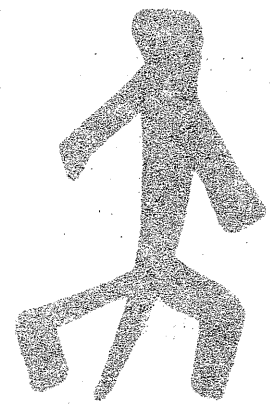


Fig. IV

cave proper with a further Yogondo figure (Fig. IV, 1) + heavy linear semi-circle + three crescents (Fig. I, 1, c) + zig-zags + rectangular motif + 'eye' motifs + triangular and chevron designs.

Section E - F. Wall recess with no drawings.

Section F - G. Geometric linear compositions + Gerigl Ambu variation + 'eye' motif + diamonds, open and filled-in + further Gerigl Ambu variation (Fig. II, f).

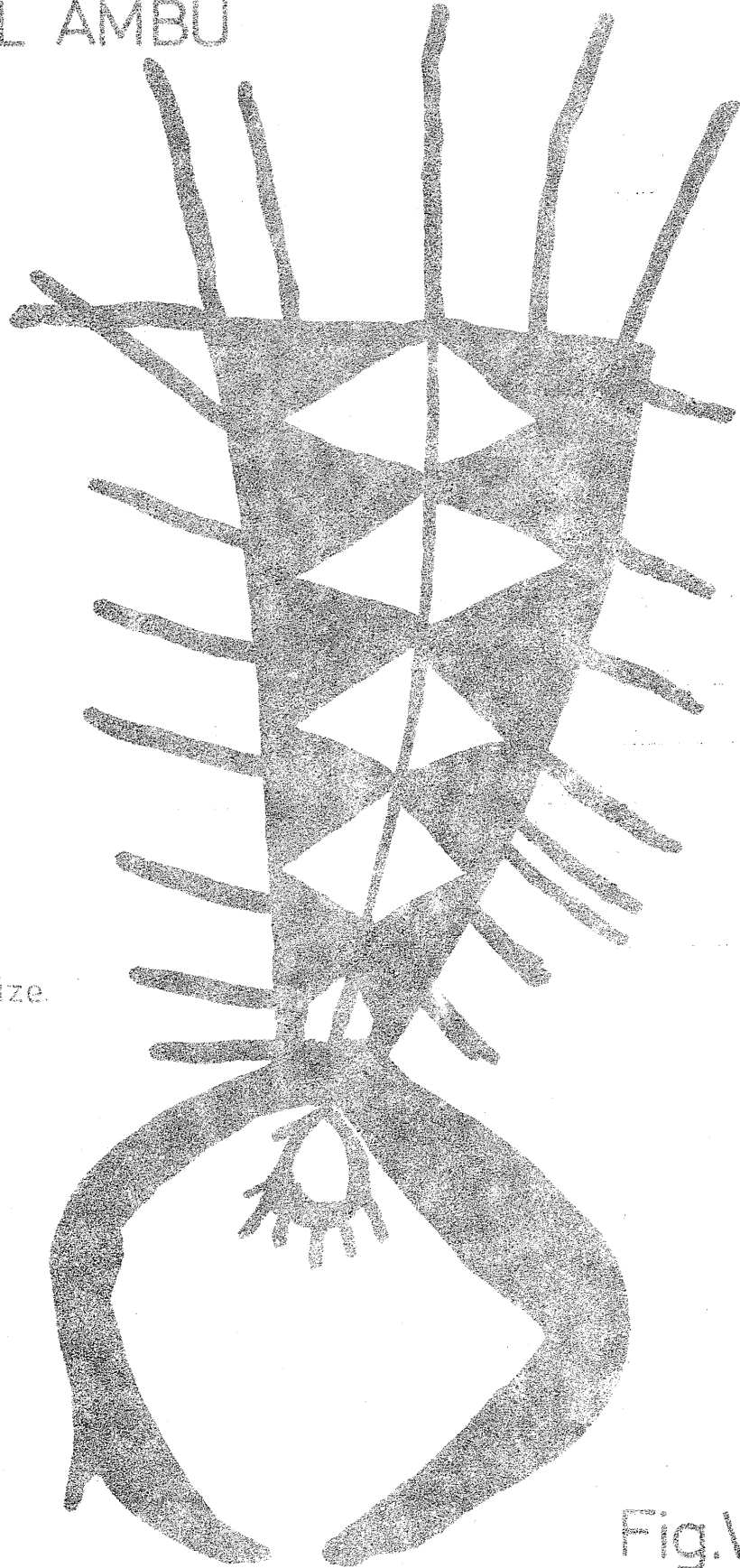
(Throughout the cave there are many variations of Gerigl Ambu and they are as diverse as the amount of times that they appear; for this reason detailed descriptions will only be given where practicable or necessary.)

Section G - H. Faded and bisected chevrons + upright and inverted triangles + rectilinear designs (Fig. III, 3, a) + 'leaf' motifs + heavily drawn 'I' + rectangular motif (Fig. III, 3, b) Gerigl Ambu variation; the interior of the 'body-triangle' consisting of bisected diamonds and along the base of the 'body-triangle' are five long, linear protrusions. The 'head' is formed by a small curvilinear triangle with six short protrusions forming a 'crown'. On each side of the point where the head and body join is a crescent protrusion which forms the 'arms' (Fig. V). To the left is a Yogondo variation with a spiral 'tail' and above it three concentric and inverted 'U's. Three variations of the Gerigl Ambu figure similar to Figs. II, a and b, also appear. The alcove has 'leaf' motifs + chevrons + linear designs.

Sections H - I. Continuation of alcove (above). Two variations of Gerigl Ambu (Fig. II, k) + open diamonds + chevrons + chains of inverted and upright triangles + filled in and open triangles, base to base and bordered by vertical lines (Fig. III, 3, b) + segmented circle + linear crescents + filled-in diamonds + Gerigl Ambu figure similar to Fig. II, b. On the walls of the chamber proper appear 'eye' motifs + open and filled-in chains of diamonds + 'lizard-like' anthropomorph + concentric 'shield' motif + rectilinear designs (Fig. III, 3, b) + 'shield' motif (Fig. III, 2, a) + enclosed chevron motif + crescent motifs + a further Gerigl Ambu variation. An 'eye' motif of concentric and spoked circles + chain of three linear diamonds with 'rays' from the extremities. Rectangular variation of the Gerigl Ambu figure (Fig. II, h) + 'snake-like' motif + faded linear designs amongst calcite flow.

Section I - J. Three variations of the Gerigl Ambu figure (Figs. II, b and c), the third being rectangular and 'upright' with an interior of vertically bisected chevrons. The section continues with further variations of the Gerigl Ambu figure similar to those in section H - I.

GERIGL AMBU



2/3 actual size.

Fig.V

Section J - K. Alcove with columns and calcite shelf - no drawings.

Section K - L. Continuation of J - K.

Section L - M. Two 'complete' figures and an apparently 'incomplete' figure appear over a number of burials. The top figure is a Gerigl Ambu variation with a triangular 'body' which is bisected and has an interior of chevrons. The figure has no 'head' and has outstretched, curved arms with an upright filled-in triangle on the base of the 'body' triangle. The central figure has the appearance of the skeleton of a small child with bent legs and outstretched arms; and is similar to a figure that appears in section F - G. To the right is a similar and apparently incomplete figure.

Section M - N. Chevrons + bisected chevrons + filled-in and open triangles + 'D' shape motif containing diagonal and horizontal lines.

Section N - O. Bordered - double bisected chevrons + 'eye' motif + 'leaf' motifs + zig-zags + chain of filled in diamonds.

Section O - P. Low roof - no drawings.

Section P - O. Continuation of section O - P.

Section Above Remains of Bark Stretcher. A complex of drawings too detailed to describe, but some of the more typical designs appear in Fig. III. Also present 'eye' motifs + Gerigl Ambu variations + chevrons + diamonds + a Yogon!o variation.

Section Q - R. 'Incomplete' variation of Gerigl Ambu (Fig. II, d) with an interior of three vertical lines + rectilinear designs.

Section R - S. Alcove contains no drawings. Immediately after the alcove is a linear motif similar to the abstract spider motifs that appear in other areas of Papua New Guinea (Hanneman 1969). Below this is an incomplete variation of the Gerigl Ambu figure (Fig. II, d) + Yogondo variation + faded 'snake-like' motif + rectilinear motifs + vertical chains of open diamonds + enclosed vertical chevron design + 'shield' motif + geometric linear designs + zig-zags + 'eye' motifs + rectilinear design similar to Fig. III, 3, d + further Gerigl Ambu variations + further 'shield' motifs.

Section S - T. Linear designs partly obscured by swiftlet guano and mineral deposits. A blank area followed by a recess containing two variations of the Gerigl Ambu figure similar to Fig. II, b. Vertical chains of open diamonds and triangles + vertical design of open and filled-in rectangles + 'shield' motif similar to Fig. III, 2, e + linear designs superimposed over a faded design similar in appearance to the 'foetal' skeleton figures in sections F - G and L - M + indistinguishable and faded linear

designs. (These designs are only 4 m from the entrance.)

Section U - V - W. Rectangular motifs with interiors of horizontal and vertical lines forming concentric rectangles + Gerigl Ambu figure drawn within and around a solution hollow + triangular motifs + rectangles + zig-zags + faded and indistinguishable drawings partly obscured by calcite flow and algae.

Section W - X. Faded and indistinguishable designs obscured by algae deposits and minerals.

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OTHER BURIAL AND ROCK ART SITES IN THE CHIMBU GORGE, KWINIGL AND SINGGANIGL VALLEYS

The following is a brief account of other sites observed by the author including some brief notes on cultural associations and prehistory.

Chimbu Gorge. Sigewage is a small cave system on the north west side of the Chimbu Gorge. It is, in fact, two systems with five separate entrances. The lower system is a three level river cave (Wilde 1973b) with no drawings, and the upper system is a short dry cave with two known entrances. Both these entrances have a number of bichrome charcoal drawings consisting of many varied anthropomorphic figures (Fig. IV) and chevron, triangular, diamond and rectangular designs similar to those in Ak Kagamugl. 'Lizard-like' Yogondo figures also appear along with crescent motifs and linear designs. No human remains are present, but the system is still used for hunting bats (wela). Some of the local people claim that the site was once used for burials but the remains have since been removed because of pilfering.

Singganigl Valley. There are a number of burial sites in the Singganigl Valley but no rock art was observed by the writer, with the exception of bichrome ochre paintings at Kokombogo, a dry old cave system 15 m long and is situated immediately above Sigewage, adjacent to the Kundiawa - Pari Road. The second exception is Obondo Yonaminge (Wilde 1973a) which is a well known burial cave situated 1 km north of the Pari Rest House near Uramakani hamlet. Here the bones are piled feet thick; the most recent burial being in 1964. It is said that the cave has been used by the Gena, Endugua, Naregu, Yonggamugl, Kewandagu and Kamanagu clans for many generations.

An extremely interesting drawing is located in the Umkombogo system (Wilde 1973c), which is a two level river cave situated 1 km west of the Kuramugl Primary 'T' School. Here, half of the Singganigl River resurges from the base of a limestone bluff.

The entrance to the cave is about 10 m up a vertical cliff face above the outlet. The drawing is of an 'S' spiral nature and is only accessible by climbing the cliff face, travelling along 200 m of passage (including a narrow squeeze), descending an overhung rift of 18 m and following the river downstream to where it sumps before the external efflux! The drawing is to be found in a small dry upper level chamber above the sump. 'Cemented' into the calcite, in a flow, near the drawings are the remains of a native grass (pit-pit) torch (bom-bom). The remains are well protected and a considerable distance from any exposed entrance to the cave and may well be worthwhile carbon dating (although it is doubtful if a sufficient quantity of carbon could be collected). It is unlikely that the artist gained entrance by following the upper level of the system; it is more likely that a substantial change has taken place to the structure of the cave since the execution of the drawing. An examination of the exposed rock faces by the writer and V. Watson suggested that a recent change was unlikely. A further point of interest is that the first 100 m of the upper level are well used with the walls heavily blackened by smoke. The second 100 m (after the squeeze) show little or no signs of use.

Kwinigl Valley. The only other site observed in the area by the author was Mebikombogo, an almost dry, two level system situated near the foot-bridge on the track that travels from the Mai-loop road to Gurema Village. Here there are triangular and diamond motifs and more 'lizard-like' anthropomorphs, similar to those observed at Ak Kagamugl and Sigewage. The drawings have been seriously vandalized by young local men scrawling their names in charcoal.

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Ochre paintings have been observed in the Chuave area where the Kiowa archaeological site is located. Kiowa revealed evidence of the earliest known people in the New Guinea Highlands who were flourishing during the 9th and 10th millenia B.C. These early highlanders were gatherers of wild plant foods and hunters who used bone and flake tools. They used the rock shelters and caves for cooking, resting and sleeping and possibly inhabited them for brief periods (Brown 1972).

Bones have been found in many vertical systems during exploration and it is obvious that it was a general practice to dispose of the dead in this manner. The Chimbu says that persons suffering from incurable diseases, sorcerers, captured enemies and deformed and unwanted persons were often thrown alive into the shafts and as previously mentioned, the abundance of bones supports this. During the descent of Gagogangama (Watson 1973), a sink situated on the Porol Escarpment above the pass where the Pari-Mindima Loop road travels, it was related by an old fight leader that he

once witnessed a scene where a woman was forced to 'suicide' at arrow point by leaping down the 50 m entrance pitch. It is hardly surprising that the Chimbu believes in the spiritual influence of ghosts and 'wild and dangerous spirits' (Brown 1972).

In pre-European times during frequent fighting, the caves, gullies and gorges were used for protection and concealment after fleeing from the fight and in some caves are still used for this purpose and to avoid detection by the authorities (Brown 1972).

From all over Papua New Guinea limestone areas, come myths and legends with tales of caves and their imagined inhabitants. The northern Massim believe that there was a parallel world beneath the ground from which their culture emerged. The Trobriand Islanders also believe that their ancestors emerged from caves and rocks, and there are frequent reports of cargo cults being associated with caves and rock shelters.

No attempt at including all the cave drawing sites and burial caves of the area has been made in these notes. There is still much research to be done and much exploration to be carried out before the story will be anywhere near complete. Archaeological digs have been carried out near Omkombogo, Obondo Yonaminge and many rock shelters and faces around the area, but none known to the author have been carried out in the caves or in the region of the Chimbu Gorge.

Note on Conservation. Fortunately most of the burial caves and accompanying drawings have been afforded natural protection and selected isolation which excludes all but the determined. The local people are reluctant to reveal their location and there are strong 'tabus' associated with sites such as Ak Kagamugl. Permission should therefore be obtained before making any attempt at exploration. It is better to approach elders in these matters and not youths. The protection of these sites is vital and it is for this reason that exact locations have not been given. An invasion of 'interested' persons would most certainly result in the destruction of the caves and their contents. Persons with professional interest should contact the author or the Pre-history Department of the University of Papua New Guinea.

ACKNOWLEDGEMENTS

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CAVE POTENTIAL IN THE STAR MOUNTAINS

F. Parker *

The Star Mountains straddle the border between Papua and the New Guinea Trust Territory and extend westwards into Irian Jaya.

In 1965 the Australian Star Mountains Expedition found no major caves. A British speleological expedition planned for 1975 is considering the Star Mountains as a target area. The following paragraph is taken from a letter from Fred Parker to one of the organizers of the proposed British expedition.

.....

"I have been to the Star Mountains on two trips, collecting reptiles and amphibians and other natural history specimens, and looking into cave potential. I covered the area from Olsobip in the south to Telefomin, then west to Tifalmin and south to the Kennecott copper strike area, and west from there to the Irian Jaya border, a few kilometres to the south of the Sirius Plateau. This covers parts of the Hindenburg Wall and much of the Star Mountains. There were a few sinkholes, but no major river caves that I could find out about. The few horizontal caves I found had no potential at all. Hence my indication ... that the caving potential may not be as great as you obviously hoped."

* Wildlife Section, D.A.S.F., P.O. Box 2417, Konedobu, P.N.G.

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THE CAVING SCENE

Bougainville. In March Jim Farnworth, Thomas Keba and Hans Meier visited Nenduma looking for new caves on the hill opposite Nendema cave but they had no luck. The water level was too high at the river entrance and the sump was closed so the party had to get into Nenduma via the main entrance. Smoke from a couple of kids with hamboo torches was blowing out of the entrance. The remains of a fire were found in the bat chamber - needless to say, the bats had cleared out. Two possible extensions were found which warrant following up.

British Speleological Expedition. It's still on with correspondence going within and between P.N.G. and G.B. May '75 is the tentative date. There are over twenty starters at this stage and the trip will be fielded for several months with a huge budget. Members have a scientific interest but basically they are seeking deep caves.

Central District. On 11th March Mike Noone and Fred Parker held a meeting at U.P.N.G. to organize a caving group and about forty turned up. In early March Mike, Fred and Roy Mackay visited Gau'a cave ('Old Cave') at Javarere. Some small bats were collected and fruit bats seen. Also observed were small black Carabid beetles in bat guano and pale pink leaches that live on bats. Fred and Mike are planning further trips to Javarere, and to an area of extensive sinkholes just east of Surinumu Dam.

East New Britain. The Iuvare caves have been the venue of three trips recently. In February Chris Holland took a party through Durwai and Luminas caves. The novices liked the caves but were unimpressed with the walk in (samting nating!). Two surveying trips were run in March. Jean and Michael Bourke, Glenda Hambly, Chris Prior and Tim Sprod surveyed Singoinga (139 m) on the first trip. They also completed the survey of Luminas cave (441 m). Bloody hard work surveying in a stream passage as low as 30 cm at the end! Fluorescein dye placed in Singoinga re-appeared in Luminas, thus proving the river connection. Fears that the village people would 'girap nogut' at the dye did not materialise, as the green colouration was not intense.

On the second surveying trip Japeth Morris, Chris Prior, Tim Sprod and Michael Bourke surveyed the 'Alungu Cutoff cave' and did a surface traverse from Durwai to Luminas as well as going through Durwai and the upstream section of Luminas. Only a bit of surface traversing remains to be done now that all four caves in the series have been surveyed.

Nick Bozeat and Chris Holland visited the one found last year by Chris. A search for further caves at Malabunga was not fruitful.

Eastern Highlands. Kev Wilde writes: "Tried to get up to Hell's Gate (Henganofi) the other weekend but the car wouldn't make the hills so went to Okapa instead and looked at a horizontal stream system about 300 m long. There are a number of art sites in the area so I am going to go back and do some work there. I am planning a week long trip to the Chimbu with some Goroka teachers and Technical College bods to try and get the highlands caving scene moving again. I am giving the Sarawakeds a miss and going over to Telefomin to have a look at the Hindenburg Wall and Ranges."

Morobe District. On a flight from Lae north to Kabwum and Wasu recently, Fred Parker noticed 'magnificent caving areas'. Just south of Kabwum and a small airstrip called Kongi is a high grass plateau (3000 m) with numerous sinkholes. Caves are reported also in the valleys near Kabwum. Along the north coast for at least 80 km east from Wasu are uplifted coral reefs a couple hundred feet high, close to the coast, and with what looks like many holes and possible caves.

Southern Highlands. Fred Parker recently visited a cave near Erave and is duly impressed with the extent of the limestone in the Southern Highlands District.

OVERSEAS NEWS

A few bits of news of new discoveries from overseas have come to hand recently.

Australia. Eagles Nest cave at Yarrangobilly, New South Wales, was confirmed in January as the deepest cave in mainland Australia, at 172 m. It is still only the seventh deepest in Australia, after six caves in Tasmania.

New Zealand. A N.Z.-Australian Christmas trip to Mt. Arthur, Mt. Owen and Takika Hill found a few caves in the 60 to 150 m depth range. Harwood's Hole was surveyed to 356.5 m confirming it as the deepest known cave in New Zealand, and the third deepest in the Southern Hemisphere.

Venezuela. The British-Venezuelan Karst Research Expedition last year found 25 caves and descended 37 shafts. The longest cave was 1 km and the deepest was 305 m. The latter, El Guarataro, is the deepest in Venezuela and the second deepest in South America. El Guarataro is situated in the Serrania de San Luis Range in North Venezuela.

* * *

R.M.B.

Brisbane - Christmas 1974 - Aust. Speleological Federation Convention

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CAVES OF THE WORLD MORE THAN 600 m DEEP *

	<u>Metres</u>	<u>Feet</u>
Réseau de la Pierre St.-Martin (Western Pyrenees, France)	1174	3850
Gouffre Berger (Dauphiné Alps, France)	1141	3742
Chourum des Aiguilles (Dauphiné Alps, France)	960	3149
Abisso Michele Gortani (Julian Alps, Italy)	920	3008
Gouffre de Cambou de Liard (Central Pyrenees, France)	908	2978
Réseau Felix Trombe (Eastern Pyrenees, France)	900	2952
Spluga della Preta (Dolomites, Italy)	875	2870
Sumidero de Cellagua (Cantabrians, Spain)	853	2799
Grotta di Monte Cucco (Apennines, Italy)	810	2657
Gouffre Kriska (Dauphiné Alps, France)	780	2558
Jaskinia Sniezna (Tatras, Poland)	770	2526
Ghar Parau (Zagros, Iran)	751	2463
Hölloch (Lucerne Alps, Switzerland)	750	2460
Gouffre Juhue (Cantabrians, Spain)	750	2460
Abisso Davanzo (Julian Alps, Italy)	735	2411
Gouffre Georges (Eastern Pyrenees, France)	726	2381
Gouffre Lonne-Peyret (Western Pyrenees, France)	717	2352
Grüberhornhöhle (Dachstein Alps, Austria)	710	2329
Réseau Piaggia-Bella (Maritime Alps, Italy)	689	2260
Puits Francis (Dauphiné Alps, France)	688	2257
Abisso di Bifurto (Cantabria, Italy)	683	2240
Scialet de Genieux (Dauphiné Alps, France)	675	2215
Antro di Corchia (Apennines, Italy)	668	2192
Gouffre du Caladaire (Maritime Alps, France)	660	2165
Abisso Cesare Prez (Julian Alps, Italy)	650	2132
Abisso Eugenio Boegan (Julian Alps, Italy)	624	2047
Faour Dara (Jebel Libnan, Lebanon)	622	2041
Gouffre Jean Bernard (Savoie Alps, France)	620	2034
Sotano de San Agustin (Huautla Plateau, Mexico)	612	2008
Frauenmauerhöhle (Niedere Tauern, Austria)	610	2001
Réseau du Trou du Glaz (Dauphiné Alps, France)	603	1978

NATIONAL CAVE DEPTH RECORDS WHICH EXCEED 300 m *

France	Réseau de la Pierre St. Martin	1174	3850
Italy	Abisso Michele Gortani	920	3008
Spain	Sumidero de Cellagua	853	2799
Poland	Jaskinia Sniezna	770	2526
Iran	Ghar Parau	751	2463
Switzerland	Hölloch	750	2460

* These lists are reprinted from the British Cave Research Association Bulletin No. 1, August, 1973, p. 21. They were compiled by Tony Waltham.

Austria	Grüberhornhöhle	710	2329
Lebanon	Faour Dara	622	2040
Mexico	Sotano de San Agustin	612	2009
Norway	Raggejavreraige	575	1885
Morocco	Kef Toghobeit	560	1837
Algeria	Anou Boussouil	539	1768
New Guinea	Bibima Cave	494	1620
Jugoslavia	Polokskajama	465	1525
Greece	Epos Chasm	443	1454
Peru	Sima de Milpo	407	1335
U.S.S.R.	Schachta Otkjabriskaja	400	1312
Canada	Yorkshire Pot	384	1260
U.S.A.	Neff's Canyon Cave	361	1184
Roumania	Izvorul Tansoarelor	350	1149
New Zealand	Harwood Hole	344	1130
Turkey	Dudencik	330	1082
Australia	Khazad-dum	321	1054
Great Britain	Ogof Ffynnon Ddu	308	1010
Venezuela	Guarataro	305	1000

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REPORT OF SOME CAVES IN THE YAGARIA DIVISION,
LUFA AREA, EASTERN HIGHLANDS DISTRICT

F. Parker *

The following caves, sinkholes and limestone areas were visited on a trip of some members of the Goroka Caving Club over the weekend 17th-18th October, 1964.

DIARY OF THE TRIP

Saturday, 17th October: Party comprising Susan Whiting, Terry Alexander, Ken Erwood and Fred Parker left in the morning for Fore rest house, then leaving gear etc. at the rest house, the party inspected the limestone area at the foot of the Kami Needle, seeing sinkholes and one cave near Kemasei village. In the afternoon Peter White and David Cole who had been working with villagers making stone implements and inspecting a rock shelter near Legaiyu village, joined the party at Fore.

Sunday, 18th October: The whole party left for reported caves in the Ehi rest house area, on the Okapa road. One party, Messrs. White, Cole and Erwood inspected caves and sinkholes to the west of the road, while the other three members followed the river cave to its limit. Messrs. Cole and White departed for Goroka around lunch-time; Erwood and Parker visited Forapi limestone area and

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the other two members collected gear from Fore rest house. All four members then returned to Goroka.

GENERAL COMMENTS

The area is generally undulating kunai hills and ridges, and this openness offered good opportunity to spot all the limestone areas in the region visited. There seems to be one definite belt probably starting in the Nambaiyufa area, including the whole of the east-west ridge on which the Kami Needle is situated, then proceeding in a southeasterly direction as evidenced by the outcrops between the Kami Needle and the Ehi rest house area (see map). It can be said fairly definitely that this belt continues on to the reported limestone areas in the Okapa area. There is apparently another parallel belt further to the north, probably commencing near the Henganofi caves then reaching the Sonofi area previously visited. The relation between this belt and the isolated outcrops in the Asiempa, Noreikora and Barabuna areas cannot be guessed at.

DESCRIPTIONS OF CAVES SEEN

FORE-KEMASI AREA

Cave No. 1

Locality: On the left of the track from Fore rest house to Kema village, about 400 m from Kemasi.

Access: See above. In a clump of pitpit in what is at present a garden in a doline. The opening is not visible from the track.

Description: A sinkhole in the bottom of a doline, dropping at least 15 m, of which only the first 3 m can be climbed down without equipment. The villagers say that the water from this and the other dolines in the area emerges about 800 m south of Kemasi in a small creek valley. The point of emergence is a sump; there is no opening.

Relation to natives: The natives seem to attach no importance to this hole and are very willing to show it to visitors.

2. Durugopa cave

Locality: 200 m south west of Kemasei village.

Description: A large doline about 45 m across, at the bottom of which is a deep sinkhole surrounded by a thick growth of pit-pit. According to the natives in the wet season a lake fills the

doline then slowly drains away, emerging at the same point as No. 1 described already. This slow drainage probably means small restricted passages.

Relation to natives: Because the principle of the drainage is understood by the people, they do not seem to attach any supernatural importance to the hole.

3. Muto cave

Locality: About 500 m west of Kemasei village.

Access: A small track from the village leads to the hole.

Description: A vertical fissure in the ground dropping at least 45 m. The fissure is at the base of a 9 m high cliff of limestone and probably connects up with passages bringing water from the sinkholes to the north. Thus it would be the most interesting for future exploration. There is a small horseshoe shaped passage from a point 3 m along the cliff to the left of the main opening. This curves in and down very steeply to meet the main fissure about 9 m below the point of entry.

Relation to natives: No importance attached to it.

4. Obi cave

Locality: About 1.5 m north of Kemasei village, at the northern edge of the limestone cliff.

Access: To Kemasei village as already set out, then a small track leads to the cave.

Description: A steeply descending cave with an entrance about 3 m by 4.5 m high in a clump of pitpit. The entrance slopes steeply downwards to the north, turns east for 18 m and still sloping down turns north for 45 m. Then the cave turns east and the floor is silted up, closing the cave off at what used to be a sinkhole about 30 m further on. The silt floor is about 30 m below the entrance. Water still runs into the cave and seeps through the floor in times of rain. Formerly the cave used to continue to a clump of trees in the valley to the north, about 600 m away and 90 m below the entrance. The water flowing into the cave now emerges from the area as a seepage. Judging by the natives' ideas, the cave must have silted up within the last few generations - the people have stories of men entering the top cave and emerging in the valley.

Relation to natives: There is no importance attached to the cave but swiftlets are caught there and bats occasionally caught.

FORAPI

GORDINA

FORE R.H.

KEMASI

• KAMI
• HUMB
• SICKHOLES
40ft
50ft
30ft

DEYDRIED
LIMESTONE
AND
CAVES

CAVANTINA R.

YAGARIA DIVISION
EASTERN HIGHLANDS DIST.

6° 20' S

115° 55' E

NUPARU R.H.

HENGANOPI

OMARA

0 1 2 Miles



0 1.6 3.2 Km

F. PARKER 19-X-1964

LIMESTONE
CLIFF

LIMESTONE
CLIFF

DAGINAVA

HENEGARU

HAMU

EHI

RESERVE CAVES

SAMPLES

History: This is the first time the cave has been seen by Europeans.

Natural History: Swiftlets nest in the cave and according to the natives a migratory bat congregates in the cave at some times of the year. This is confirmed by the presence of areas of bat droppings in the cave.

Cave No. 5

Location: On small track between Kemasi and a northern hamlet of Fore.

Access: As for location. Both are near the track itself which is not very often used. The track leads from the village to a 'pass' through the limestone cliff, where a large face of orange and brown limestone is visible from the rest house. The track continues on and down a kunai ridge to the other hamlet of Fore.

Description: Two fissures in the ground which drop at least 12 m vertically and could not be descended into. There were worn boulders on the floor of the fissures, and they may have something to do with the drainage from a number of silted up dolines to the north west.

EHI REST HOUSE AREA

Location: About 1.5 km south of Ehi rest house on the Okapa road through the Yageria.

Access: By following the road to Lufa from Goroka, turning east along the Okapa road and on past the Henganofi turnoff to about 1.5 km past Ehi rest house, where there are limestone outcrops on the right of the road. There is a small track leading down to the left direct to the cave mouth, a distance of 200 m.

Description: This is a small river cave which proceeds in a generally southeasterly direction where it drains the sink-holes shown on the map. A small permanent creek emerges from the cave mouth which is an opening about 3 m high and 1.2 m wide. The floor is fairly level and in the half mile of cave traversed rises only about 9 m. The floor of the cave is a flat pebbly creek bed, covered in times of heavy rain. The cave proceeds for about 600 m as a fissure 2 - 4 m wide and of varying height from 3 m to 12 m. The limestone contains much old fossil material, mainly the traces of coral burrowing worms which pre-date by some eras the shelly fossils of the Nambaiyufa area. There are muddy seepages into the cave at a number of points but no openings on to the surface. The last 250 m are awkward,

involving crawling over the hard stony bed as the roof gradually lowers in two places, with a passage 1.5 m high between these two places. The last crawl is over 30 m long and the roof very gradually slopes from 50 cm to water level, where the sump prevents further progress.

Relation to natives: The natives appear to attach little importance to this cave although after we had left I heard rumours that in a nearby area the natives are able to obtain kina (pearlshell) shells from the limestone. There are also rumours of salt being found in the limestone at the bottom of a small cylindrical hole in the limestone which has trees and plants growing at the bottom. Apparently the quick visit paid by the group was not sufficient to the natives for them to entrust this information to us.

History: The cave is known to many natives but had not been visited previously by Europeans.

Natural History: There are leeches in the cave, pink with opaque white spots on the dorsum. There are crabs and small water dwellers probably carried down by the rainwaters. There are bats in the caves, near the limits reached by this trip, so it seems there are small connections with the surfaces through small collapsed areas, but these openings cannot be detected from the cave itself.

FORAPI AREA

Ken Erwood and the writer visited the Forapi limestone about 3 km north east of Fore rest house, near the Forapi or Hanito River. There were two vertical fissures in the stone about 9 m deep, one of which has been used for a recent burial, but neither of them of any interest. They do not drain any water away so are not extended, and are less than a metre at the bottom, so are not habitable.

CONCLUSION

This area still offers much opportunity for exploration; there are reported areas of cave containing limestone west of the Kami Thumb, and large faces of the same stone seen to the west of the Ehi-Henegarua area. No doubt further along the Okapa road there is more limestone and by following the Henganofi road north east along the Fayantina valley there may be more limestone areas before one reaches the partly explored Henganofi caves within a few miles of Henganofi Post.

A rock shelter in the area, just 4 km south west of the Bena rock shelter is to be investigated at some length by Peter White and another rock shelter was described to the writer and Peter in the area about 13 km due east of Fore.

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VISIT TO THE BAIYER RIVER CAVES, WESTERN HIGHLANDS DISTRICT

L. Le Fevre *

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This article is extracted from Mount Hagen Trip Report No. 1 of the Port Moresby Speleological Society. It represents the first published report of caves from the Western Highlands District.

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On Saturday 7th December 1963, Kevin Read, Annice Mitchell, Peter Barnes and Laurie Le Fevre departed Mt. Hagen for the Baiyer River Valley, approximately 30 km west. The walk from the Baiyer River Baptist Mission to Kikyalama village near the Paraga river and the caves is two to three hours (about 6 km) in the direction of Mt. Hagen.

The two caves, one called Abwessa by the local inhabitants, and the other named 'Hole' by the party, are very dangerous, and should only be explored in dry weather and with good equipment.

'Hole' is an active river cave, with at least one higher level dry passage. The entry is via a series of collapse caverns. There is evidence of extensive flooding near the entrance, and on the second day fresh mud was found some metres up the walk. Rain through the night had not been heavy, so it is likely that heavy rain fell some distance away on the ridge. A vertical hole 120 m from the entrance is in the bottom of a solution formed doline or pothole.

This pot is only 27 m deep, and was descended by ladder by three members of the party. Three lengths of ladder only were used, and a fourth would be required to reach the river. The first length of ladder was used across the sloping 9 m mud bank of the doline. The pot was caused by solution and severe scalloping on the almost perfectly round wall supports this theory.

On Sunday morning the party entered the cave again, proceeded past the pothole to a dry cavern and then on to a further series of secondary collapsed passages 240 m from the entrance, after accomplishing only minor exploration.

Abwessa is also an active river cave, through which flows the Poga River. The river flows south west over shale and limestone, and enters the cliff face in a north west direction. The river leaves the cave some hundreds of metres away on the other side of a ridge. About 30 m in is a collapse formed gorge, and a further 30 m in through some difficult squeezes is a daylight entrance in the roof. Future exploration should be via this entrance.

The dense undergrowth makes searching for entrances difficult, and confuses surface direction generally.

* Present address unknown

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