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KARLIE-NGOINPOOL CAVE: A PRELIMINARY REPORT

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Abstract. The discovery of another Australian cave with archaic rock art is briefly reported. Consisting of thousands of Pleistocene petroglyphs, this find demonstrates the magnitude of the recently discovered Australian cave art tradition. The site possesses the largest known concentration of non-figurative cave art in the world. This preliminary report describes the find briefly and proposes an appropriate study program for the next few years.

Introduction

The discovery of Karlie-ngoinpool Cave is a fitting climax to the recent amazing string of finds of cave art sites in Australia. The preliminary report on Karake Cave (Aslin and Bednarik 1983), a recently discovered, nearby site of rock art, was only being written when one of us (G.D.A.) investigated a large sinkhole cave between Mount Gambier and Kongorong, southeast South Australia. Since access to the steep floor of this sinkhole is difficult, there was little hope of locating any type of human occupation evidence in the forbidding cave. Yet perseverance was amply rewarded: a series of deeply abraded, large circles and extensive finger flutings were found on the walls of the cave.

A subsequent thorough examination showed that the wall decorations are in fact more extensive than first thought. The cave was found to contain the most substantial gallery of parietal art so far found in Australia, and one of the largest in the world. Thousands of petroglyphs cover the greater part of the accessible rock surfaces, and they are locally of such concentrations that individual designs can only be distinguished with difficulty. Modern graffiti are almost absent in this cave, and much of the rock art is surprisingly well preserved.

It is not our intention to attempt here an adequate description of this overwhelming site, or even an adequate evaluation of its research potential. The purposes of this paper are:

- (1) To propose a strategy for the exploration and study of this significant site.

- (2) To provide a preliminary description of the cave and its contents.
- (3) To acquaint rock art researchers with the thought that extensive cave art is not a phenomenon limited to western Europe. Whilst nearly all of the world's rock art is indeed found in places exposed to daylight, there are now two world regions where Pleistocene parietal art has survived on a large scale. One of these is along the southern coast of the Australian continent where about a dozen deep caves with early rock art are presently known, and more are expected to be found in the course of our continuing research project.

The Cave

The name of the site was chosen by its discoverer, G.D.A. It is derived from *kar-li-e-ngoinpool*, which means 'many, plenty, numerous', in the tongue of the last indigenous language group that inhabited the southeast of South Australia, the now extinct Buandik (Smith 1880). The name refers to the engraved, pecked and abraded circles, which are indeed numerous in the cave, and it is in keeping with the naming of all other prehistoric art sites in the Mount Gambier district. Malangine, Koongine (Bednarik, in prep. a), Gran Gran, Koorine (Aslin and Bednarik, in prep.), and Karake (Aslin and Bednarik 1983) are all Buandik words (another cave site discovered by the authors is still unnamed). These names are not intended, however, to imply that the petroglyphs were made by the Buandik. It would be quite untenable to suggest that any society could maintain continuity of ethnicity over the immense time span involved.

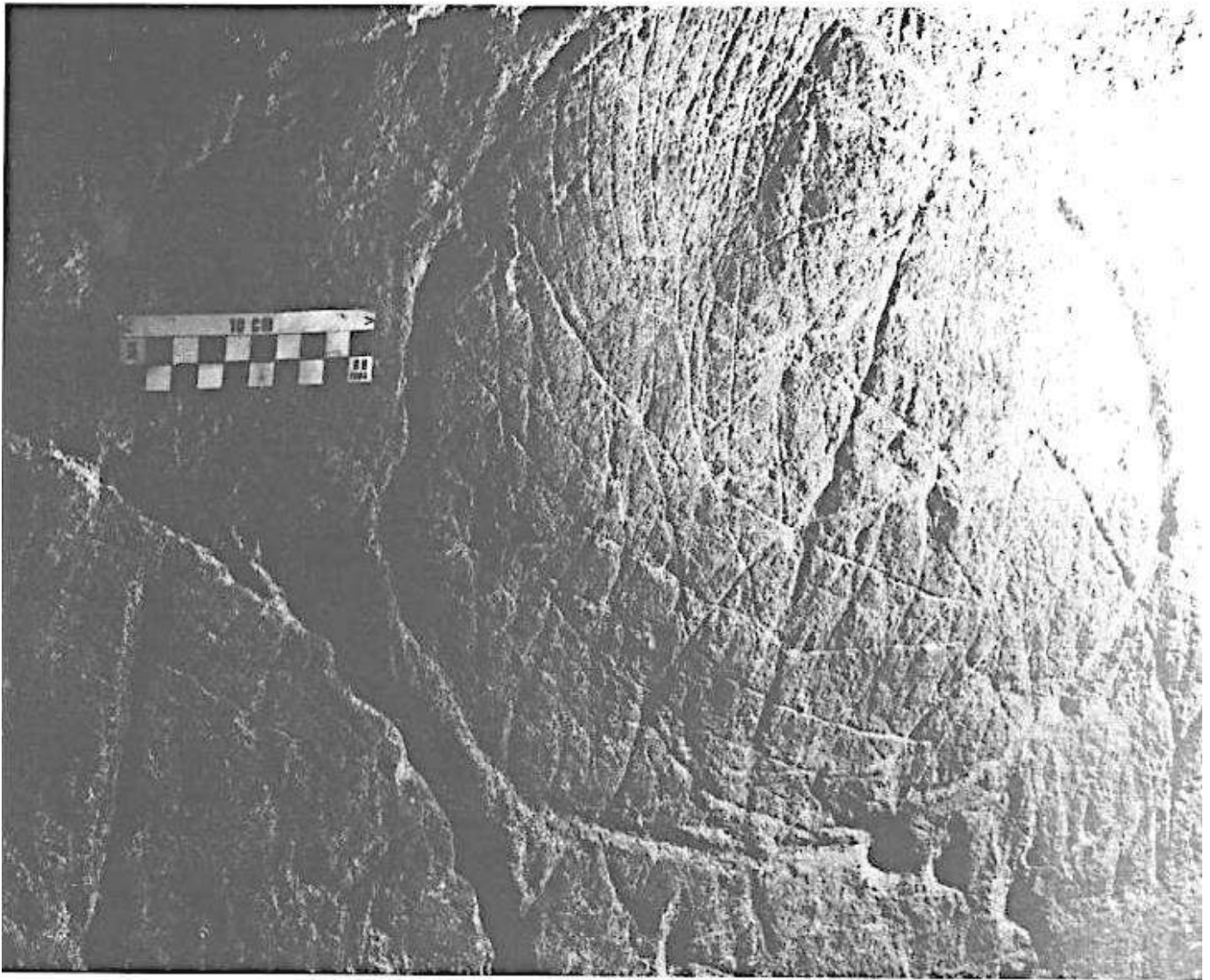


Plate 1. Densely engraved vertical panel. East wall of the lowest chamber, Karlie-ngoinpool Cave.

Karlie-ngoinpool Cave consists almost entirely of a steeply descending hall to which access is gained through a vertical sinkhole entrance of about three metres diameter (Fig. 1). Descent is difficult and the use of ropes is advisable. The sloping floor is reached six or seven metres below the ground level. The broad hall declines towards north, at an angle of around forty to forty-five degrees, is roughly twenty metres wide and much of the similarly steeply sloping ceiling is well beyond human reach. At approximately twenty-five vertical metres below ground, the floor levels off and is soon approached by the ceiling. This part of the cave is divided into several chambers by large boulders or low ceilings. It has remained in almost complete darkness even after the floor subsidence further up, which occurred some time after the cave was first entered by human visitors. The extent of the floor level change is demonstrated by the distribution of both petroglyphs and chert mining evidence.

The floor continues gently sloping until, at the lowest accessible point, the cave ends in a small chamber in which almost every square inch of suitable rock surface has been engraved upon in total darkness (Plate 1).

The floor collapse is a particularly interesting, and archaeologically significant, aspect of the cave. The tectonic adjustments the site has experienced since the finger fluting was executed are complex, and there may have been more than one phase of subsidence. The main effects of the structural modifications were the lowering of the floor in the northeastern part of the cave, and presumably a subsidence of the entry shaft floor. These events may be dateable, and they bring to mind the similarly substantial tectonic changes experienced by several other Australian caves with finger lines, which in each case clearly occurred after the oldest petroglyphs were executed. In the Mount Gambier area it is tempting to relate these occurrences to the extensive

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Level 1

SILICATE SEAMS

RUBBISH STOP

Level 2

Level 3

Longitudinal Section

SECTION

Level 1

Level 2 west

Level 3

N

Plan

Projection of three levels
into one horizontal plane
ASF SURVEY GRADE 3

KARLIE-NGOINPOOL CAVE

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Level 2 east

RUBBISH

Figure 1. Section and plan of Karlie-ngoinpool Cave, South Australia. For symbols, refer ASF Survey and Map Standards 1978. ASF Survey Grade 3 refers.

volcanic disturbances of the Holocene eruptions of Mount Gambier and Mount Schank (about 4830 and 1410 years BP; Blackburn 1966). But the same explanation is not so convenient in the cases of Koonalda Cave (Nullarbor Plain; Gallus 1968, 1971; Wright 1971) and Orchestra Shell Cave (near Perth; Hallam 1971; Bednarik, in prep. b) which have experienced similar adjustments after they were decorated by finger flutings. Whilst volcanic activity could well have caused the ceiling collapse in Koongine Cave, it would be judicious to question the effectiveness of such upheaval in lowering a cave floor if there are no adequate voids beneath it, or if these are filled with water. Perhaps long term climatic variations are more effective in bringing about such tectonic changes. If the water table fell significantly, during a dry period of a stadial epoch (a lowering of the sea level would conceivably have drained the limestone plateau dramatically as it emerged), the structural stability of an extensive subterranean system would suffer through the evacuation of phreatic reservoirs. This explanation could not only account for the floor slump in Karlie-ngoinpool Cave, but also for the subsidence in Orchestra Shell Cave, because both caves can be presumed to be close to major phreatic systems.

As Karlie-ngoinpool Cave descends through the horizontal beds of Miocene limestone it also intersects laminar formations of chert nodules. They are the result of selective replacement

of carbonate by silica where the former occurs in layers of higher solubility (Bednarik 1980). Around some of the nodules the limestone matrix has been gouged away, others have been prized from their places. Many bear bulbar scars indicative of impact fractures, which are patinated - an indication of great antiquity in this environment. The extensive evidence of silicate mining is identical to that in the upper part of the north-west passage of Koonalda Cave, and it is relevant to reflect upon the similar chert mining traces that occur in another five of the known finger line caves. It has been noted that these quarried sedimentary silicate deposits are of poor quality (excepting the high quality chalcedony of Koonalda Cave), while all caves concerned are located in regions abounding with easily accessible surface deposits of superb flint and chalcedonic silicates (Bednarik, in press a).

In the western half of the lowest part of the cave, stalactitic formations occur in a narrow passage which possibly leads down to the water table. Numerous animal scratches found here suggest that animals sought access to water and then returned by scrambling up rock obstacles in the complete darkness. There are few animal marks in most other parts of the cave, but they appear again in the entrance shaft, which would have been the main obstacle to most species that had either ventured or fallen into the cave. Generally, animal scratches are far less frequent than in many other caves in this region (they have been studied in numerous caves; Bednarik, in prep. c) and it is obvious that this cave did not act as a natural trap for most species.

In the lower part of the cave a well preserved fossilised tooth of a giant white shark (*Procarodon angustidens*), measuring sixty-five by sixty-five millimetres, was observed in the ceiling (see Pledge 1980: 4).

The Markings

Due to the large sample of petroglyphs available at this site it is comparatively easy to distinguish typical main classes:

- (A) *Digital fluting* (Plate 2). This is a particular form of finger lines executed on surfaces of Montmilch (a white, soft limestone precipitate; Bednarik, in prep. b) and it is the only form of these archaic externalisations found in Australia. It has been identified in many caves of Europe and Australia by the Parietal Markings Project (Bednarik and Bednarik

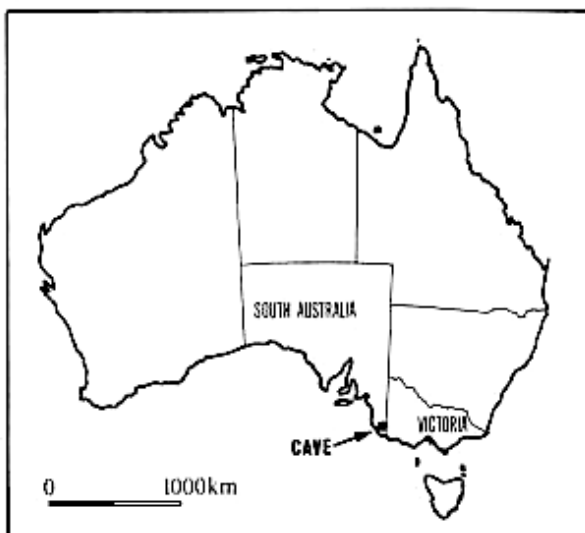


Figure 2: The location of Karlie-ngoinpool Cave on the Australian continent

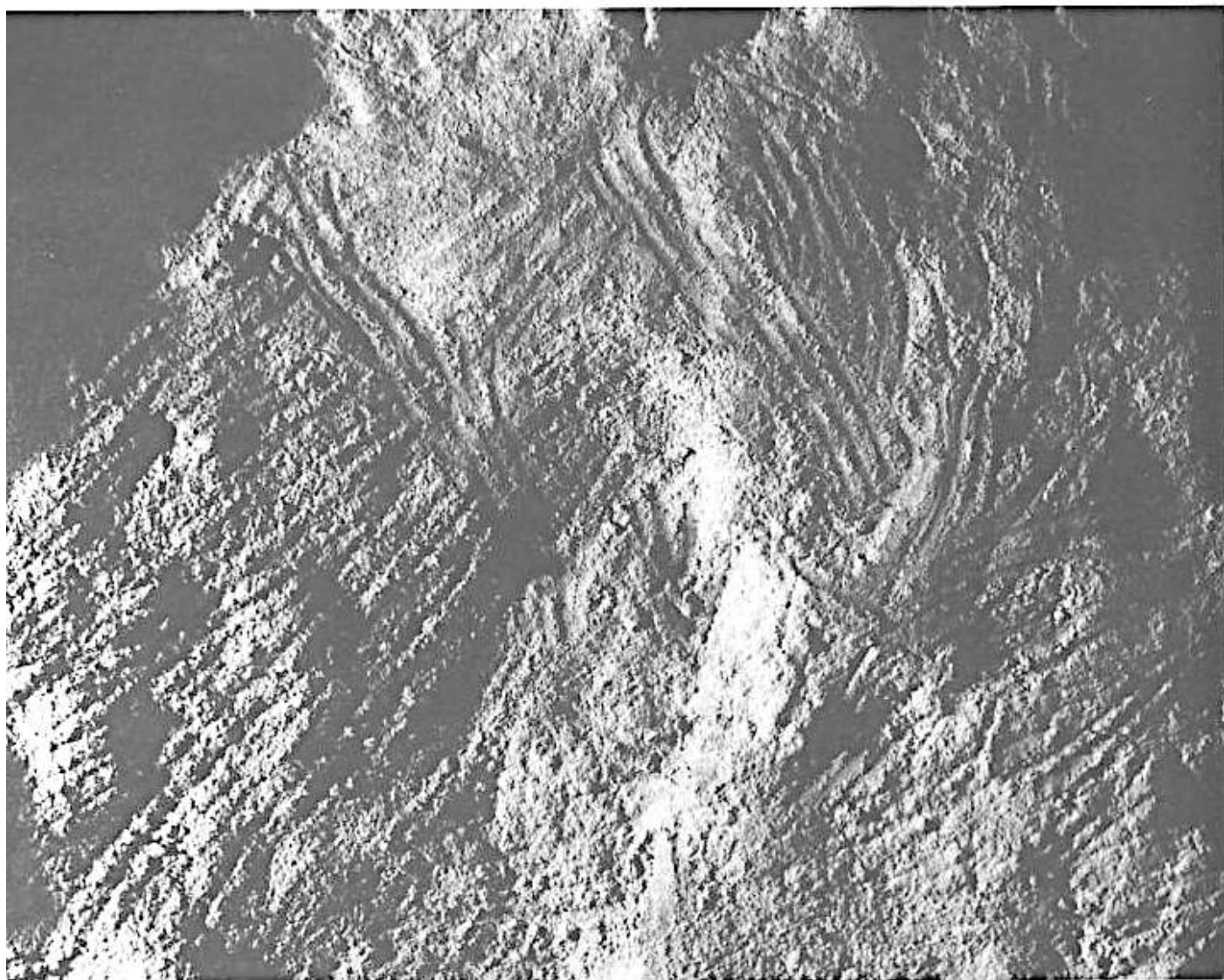


Plate 2. Multiple finger lines, fashioned on formerly soft Montmilch, belonging to two distinct 'generations'. These petroglyphs are located on a wall over five metres above the present cave floor and they are well beyond human reach now. Upper part of Karlie-ngoinpool Cave.

1982) and where it is found alongside other rock art styles it always precedes them. In those instances where evidence permits some inferences regarding the time span separating the flutings from the subsequent art generation, that time span appears to be quite substantial. For example, the floor modifications at Baume-Latrone (France; Drouot 1953) indicate that the *Montmilch* flutings are significantly older than the earliest Aurignacian paintings (Bednarik, in prep. d), and at Malangine Cave they are separated from the later 'Karake Style' by a period of speleothem precipitation (Bednarik, in prep. a and b).

In Karlie-ngoinpool Cave an area of roughly seventy-five square metres is covered by the finger flutings. Many panels, particularly in the lower half of the cave, have deteriorated to varying degrees, but the best preserved

examples known of this archaic art form are to be found at this site. Juvenile markings are common, a peculiarity of many of the world's finger line sites.

Close inspection of well preserved flutings suggests that the surfaces were reworked many times, and it appears that all usable and accessible areas have been 'decorated' in this manner. One panel is almost six metres above the present, collapsed floor.

- (B) Some vertical wall surfaces are covered completely and densely by numerous *deep gashes, pits and grooves* (Plate 3). The advanced corrosion state of these enigmatic marks suggests great antiquity. Initial examination indicates no deliberate orientation among them, but their arrangements should be subjected to detailed scrutiny. It remains un-

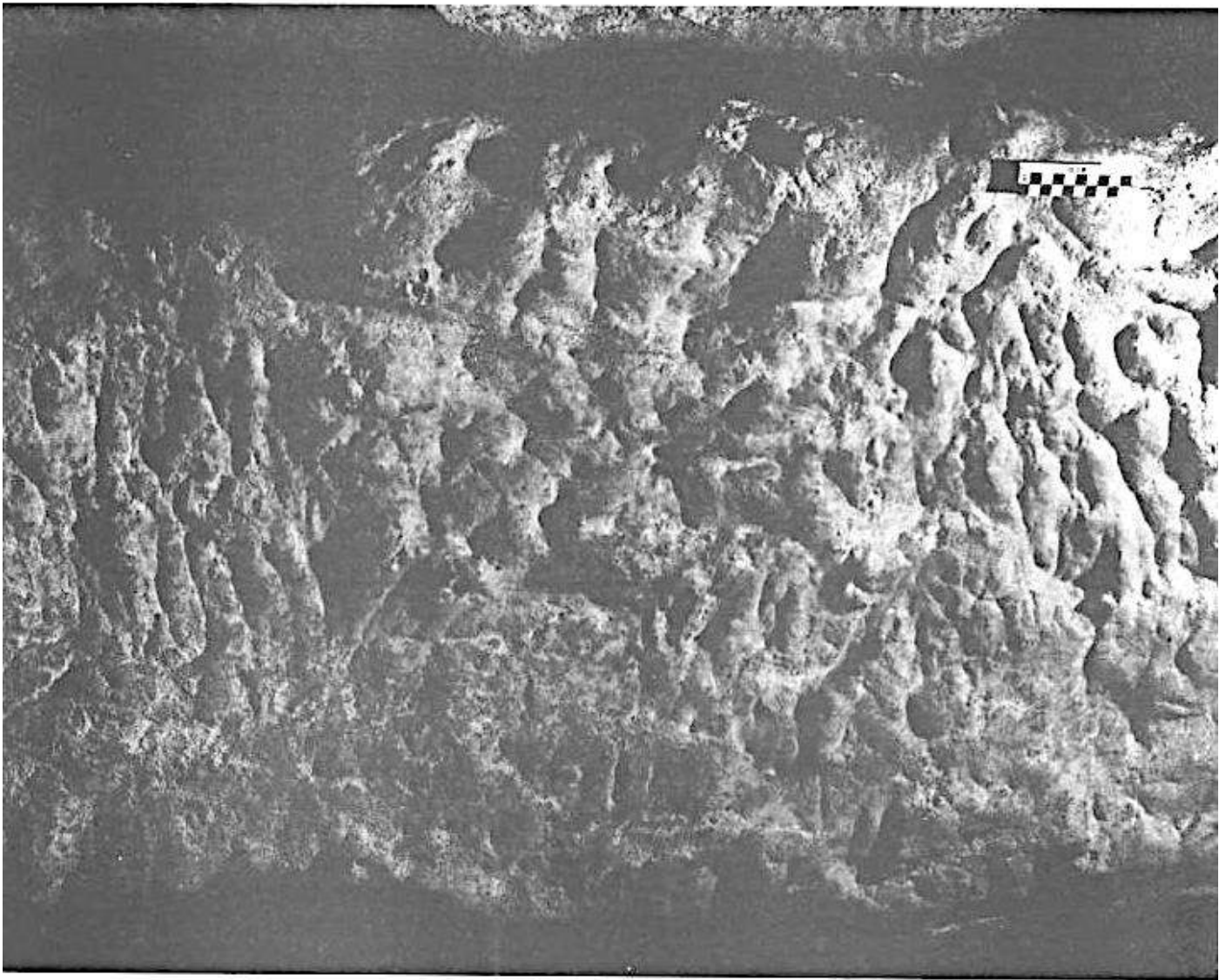


Plate 3. Vertical panel of deep pits and grooves. Lower part of Karlie-ngoinpool Cave.

clear whether they are contemporary with any of the other types of markings.

- (C) *Deeply abraded, occasionally pounded motifs* of the 'Karake Style' are meticulously executed, with an average groove depth of about ten to fifteen millimetres (Plate 4). They include various circle figures of greatly differing sizes (single circle, concentric circle, dissected circle, pecked circle, circle maze), the dot arrangement, the converging lines motif (sometimes termed 'trident' (Rosenfeld *et al.* 1981: 54); it can in fact be of two to five lines, which need not be fully joined), arrangements of long or short parallel lines, mazes and lattices.

This style must be substantially younger than the finger lines because it is chronologically separated from them by most of the tectonic changes that are now apparent in the cave. For example, there are deeply

abraded circles on a rock face that was only exposed when a rock ledge, on which the finger line artists had once stood, broke off. The similarity of the deep engravings to those in Karake Cave, in style, motif range and technique is remarkable and although the circle motifs are absent at Koon-gine and Malangine Caves, the second-oldest petroglyph generation there (the preliminary minimum dating in Bednarik, *in press a*, is discussed in Bednarik, *in prep. b*) is also strikingly similar. Karlie-ngoinpool, Karake, Malangine and Koongine Caves are within a few hours walk of each other. The term 'Karake Style' will be used henceforth to describe this Australian petroglyph tradition. Its relationship with the so-called 'Panaramittee Style' (Maynard 1979: 91), the Tasmanian petroglyphs (Sims 1977), northern Queensland's archaic petroglyphs (Rosenfeld *et al.* 1981) and Flinders Ranges petroglyphs will be discussed in due course.

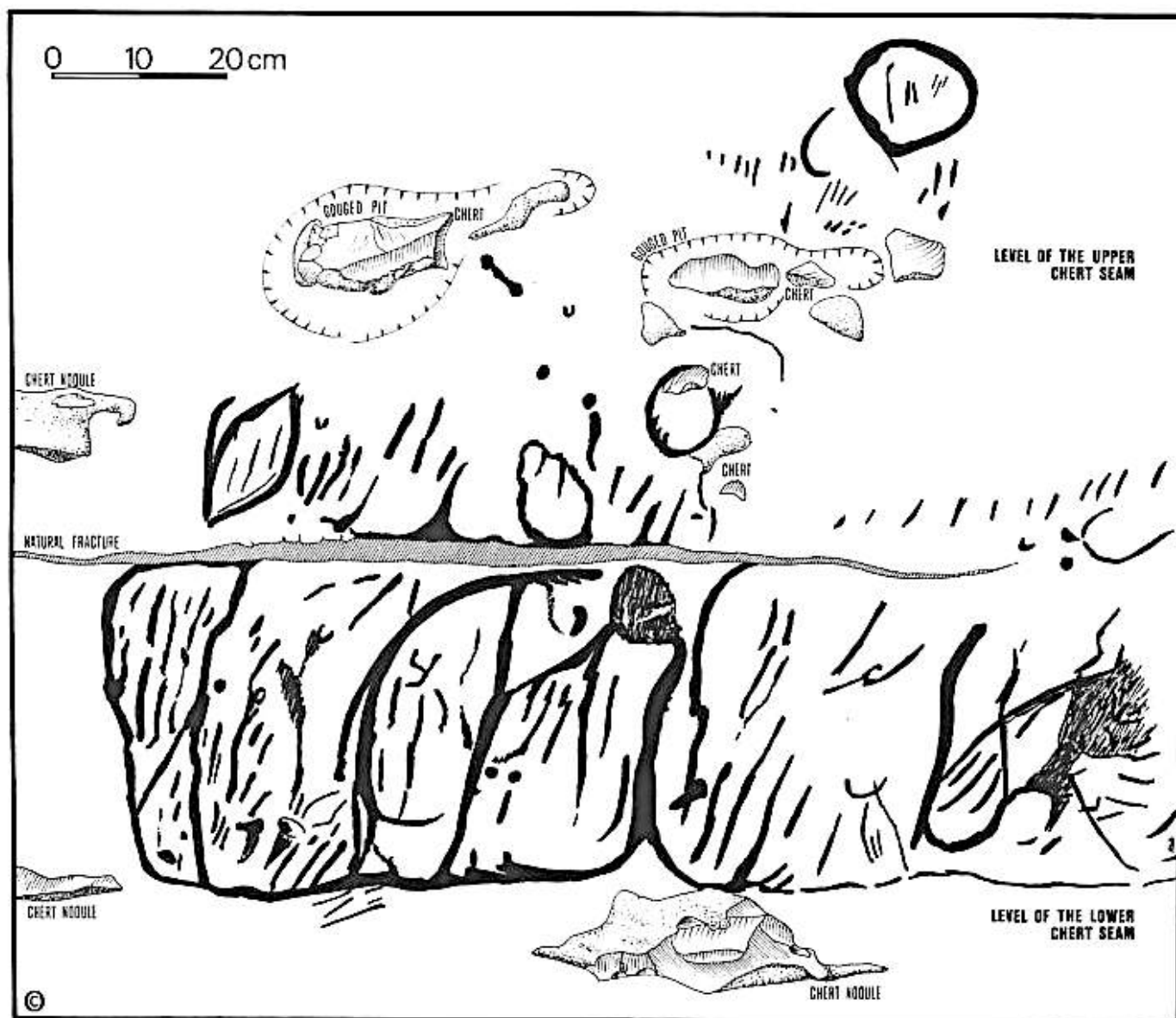


Figure 3. Arrangement of deeply engraved petroglyphs on a vertical wall in the upper part of Karlie-ngoinpool Cave. The grooves are located among evidence of chert mining, such as nodules with patinated impact fracture surfaces, and gouged pits around nodules of chert. A few circle motifs are present on the illustrated panel but most of the lines form only a loosely constructed maze, the only obvious characteristic of which is that it is generally aligned with the horizontal joints in the rock, and the related seams of sedimentary silicate.

Recorded by G. D. Aslin on 10 March 1984, using a recording grid of 100mm squares.

- (D) *Shallow engravings*, incised with single strokes of a pointed implement, appear surprisingly impulsive and uninhibited and contrast sharply with the preceding rigid, formal figures. They often seem to be a response to earlier designs, and they are certainly superimposed intentionally in some instances, e.g. where a Karake Style circle is filled in with parallel lines. The psychological inferences to be gained from these documented responses are an exciting research possibility which will be pursued (Plate 1).

At Malangine Cave, only a small remnant of the shallow incision tradition has remained recognisable, due to exfoliation. At that site it is separated from the preceding style by a substantial laminated deposit of reprecipitated carbonate which has been dated.

The Future of the Cave

Karlie-ngoinpool Cave has the largest known concentration of noniconic cave art in the world. It has some of the best preserved Australian Pleistocene petroglyphs known, and contains

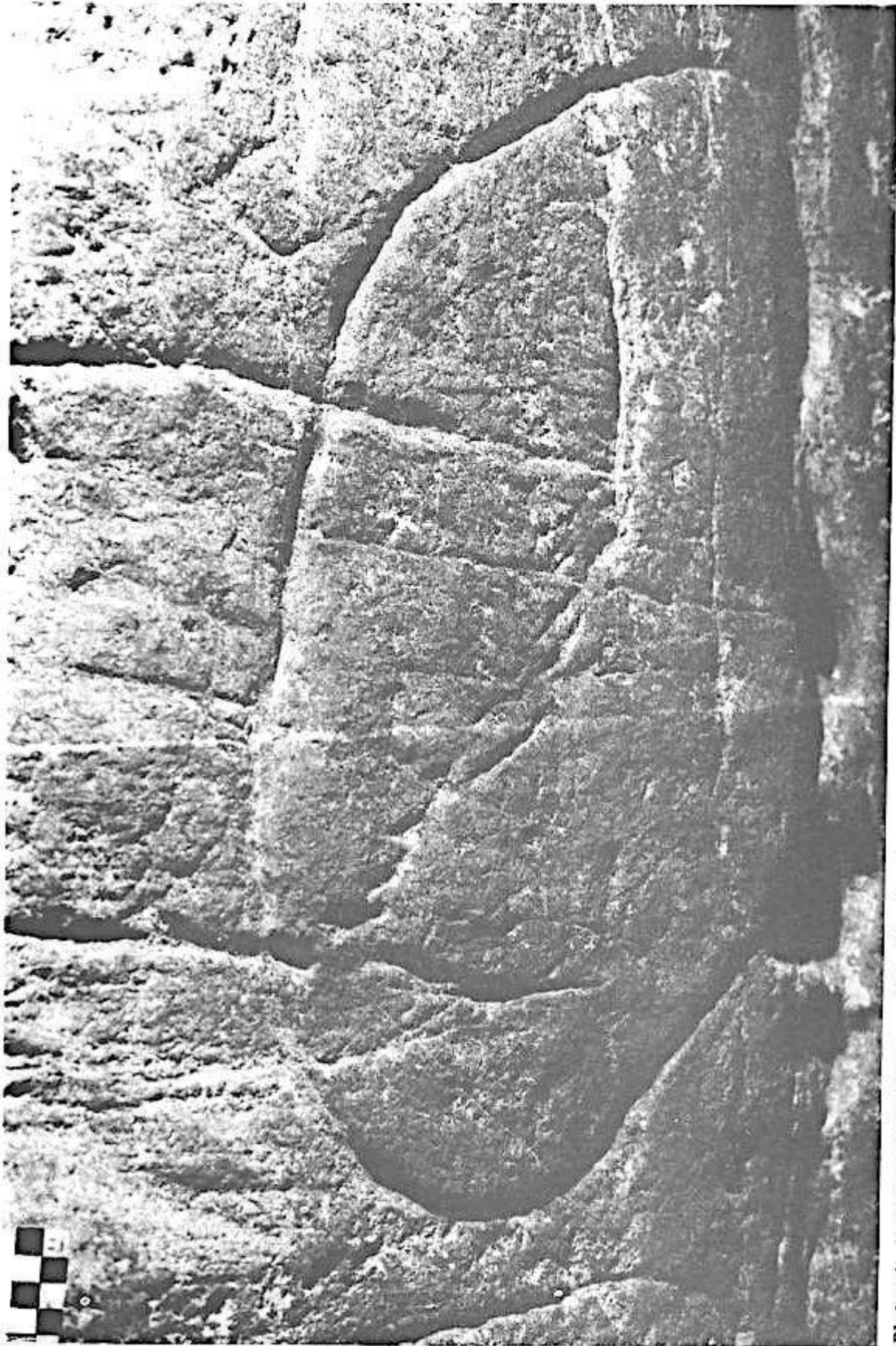


Plate 4. Deeply engraved maze of the Karake Style. Lowest chamber, Kartie-ngoinpool Cave.

the world's most archaic tradition of artistic externalisation that has survived to the present. It also contains in the order of fifty tons of garbage, fencing wire, machinery and farm animal remains (Fig. 1). The cave has been used as a depository of household and agricultural refuse for more than one hundred years. This is a fortunate circumstance because it has deterred careless investigators from entering. The paucity of modern graffiti and the almost complete lack of modern damage are to be attributed to this impediment. There are only a few recent wall abrasions, caused by rubbish or other debris that have plunged down the steep slope.

Whilst the refuse deposit has been useful in protecting the site (and in fact still covers a ten-metre wide engraved panel) the practice of using sinkholes as rubbish dumps, widespread in the Mount Gambier district, is generally not desirable, and must certainly cease at this particular site. Karlie-ngoinpool Cave is located on privately-owned grazing land, and the owner's attitude is fortunately most co-operative. Descent into the cave is quite dangerous because access is only possible by climbing down the unstable, steep slope of refuse. Entry must certainly not be attempted by persons unaccustomed to negotiating difficult cave terrain and descent must be made with great care, ensuring that no further debris are allowed to fall.

We will subject the cave to a thorough study program over the next few years which will have the following general terms of reference:

- (a) Record all manmade markings in the cave.

- (b) Analyse and explain stylistic and technological aspects of the petroglyphs.
- (c) Develop a plausible chronological model of the rock art sequence.
- (d) Consider aspects of resource management, including practical proposals of reclaiming the cave, for ensuring perpetual conservation of its art, and concerning its future use.

Our immediate recommendations are to prevent further deposition of refuse in the cave; to avoid general public dissemination of the find for the time being; and to proceed with a comprehensive study of the site and, more pertinently, of its contents.

Upon completing this research we will present to the Aboriginal Heritage Unit of the South Australian Department of Environment and Planning a report outlining our recommendations, and we will prepare a descriptive and interpretative paper which will be published through the Australian Rock Art Research Association. The emphasis of the scientific work will be on topics relevant to the Parietal Markings Project (Bednarik and Bednarik 1982) which has the principal aim of exploring the correlation between the most archaic forms of rock art, and the apparently rapid development of the modern human intellect at the beginning of the Upper Palaeolithic (Bednarik 1984a, 1984b, in press b).

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Resume. La découverte d'une autre cave australienne avec d'art rupestre archaïque est reportée brièvement. Etant composée de milliers de pétroglyphes, cette découverte démontre l'ampleur de la récente révélation de la tradition australienne de l'art pariétal. Le site possède la plus large concentration connue de l'art pariétal non figurative dans le monde. Ce rapport préliminaire décrit brièvement la découverte et propose un programme d'étude approprié pour les quelques années à venir.

Zusammenfassung. Die Entdeckung einer weiteren australischen Höhle mit archaischer Felskunst wird kurz erörtert. Dieser aus tausenden von pleistozänen Petroglyphen bestehende Fund veranschaulicht die Größenordnung der erst kürzlich entdeckten australischen Höhlenkunsttradition. Die Fundstelle besitzt das grösste bekannte Vorkommen nicht-figürlicher Höhlenkunst der Welt. Dieser präliminäre Bericht beschreibt den Fund kurz, und stellt ein entsprechendes Studienprogramm für die nächsten Jahre vor.

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