ROCK ENGRAVINGS AND STONE IMPLEMENTS OF PITCAIRN STATION, NORTH-EASTERN SOUTH AUSTRALIA

By Robert Edwards

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Plates 43-45 and text fig. 1-9

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INTRODUCTION

Early in 1962, a field excursion to Pitcairn station (map, fig. 1) was made by Professor G. H. Lawton, Department of Geography, University of Adelaide, Mr. C. P. Mountford, Honorary Associate in Ethnology, South Australian Museum, and the author, to record a group of rock engravings at a locality known by the station owners as the Twelve Mile. The discovery of jaw fragments of a *Procoptodon* or Giant Kangaroo in the bank of a local creek by Brian K. Sawers, one of the owners, had first drawn attention to the area as meriting examination.

Subsequent investigation by the author revealed other rock engravings and camp-sites. These relics of aboriginal occupation form the subject of this paper.

LOCATION

Pitcairn station, about 170 miles north-east of Adelaide, occupies an area of 180 square miles fringing the semi-arid parts of South Australia. The average rainfall of approximately eight inches is usually associated with thunderstorm conditions.

The largest watercourse on Pitcairn station is the Manunda Creek which collects the run-off from Porcupine Range (plate 43, fig. A), dominant geographical feature of the area. This range is rugged and

steep, its highest point, Waite Hill, being 2,405 feet above sea level. There are a number of shelters among the outcrops of rock on the slopes of the range, but examination failed to reveal evidence of prolonged aboriginal occupation.

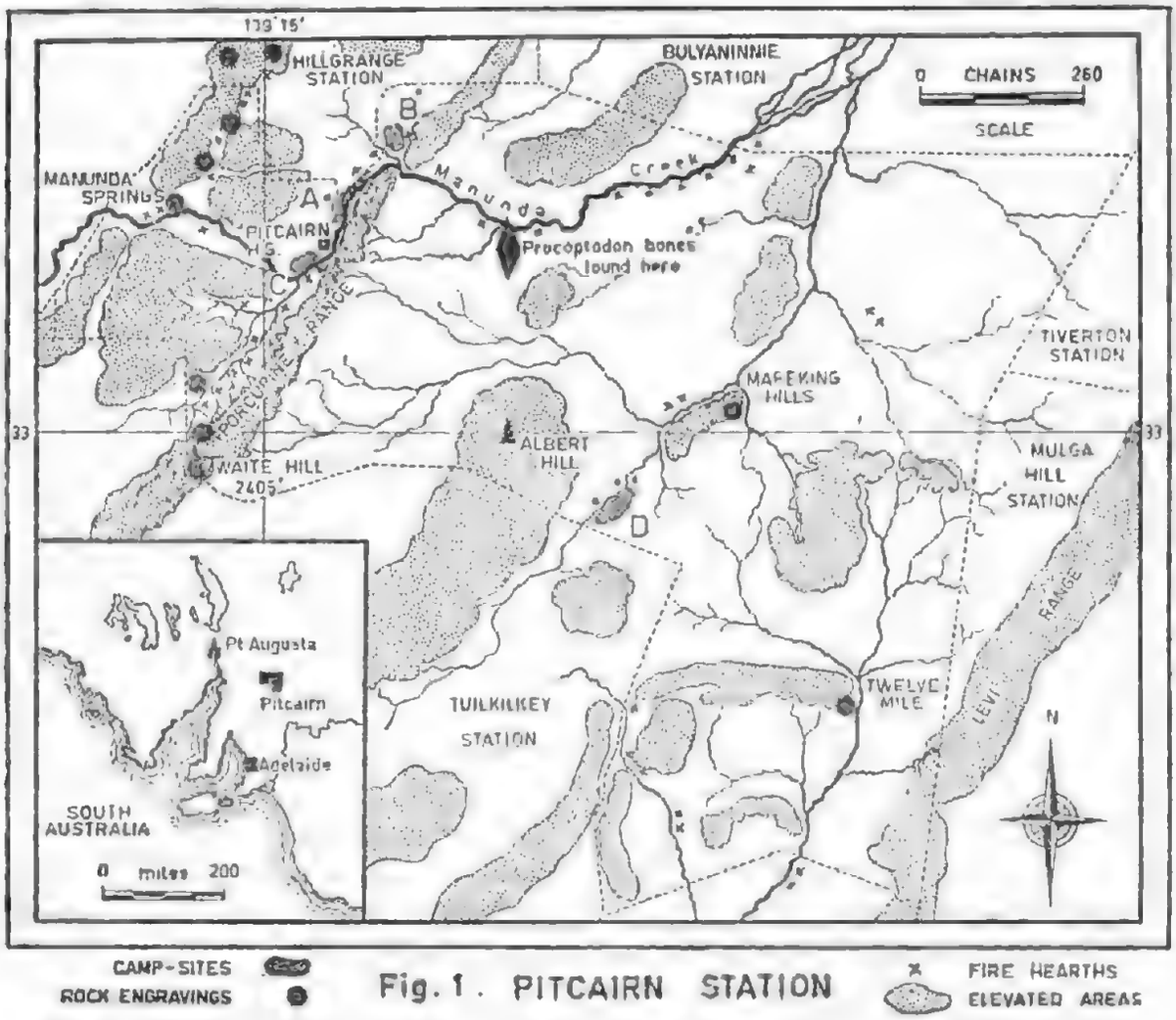

Fig. 1. Map of Pitcairn station indicating the relative positions of rock engravings and camp-sites.

WATER SUPPLIES

A permanent running spring in the bed of the Manunda Creek (map, fig. 1) provides a good supply of fresh water. Smaller semi-permanent springs in the steep gorges of Porcupine Range (plate 43, fig. C) and rockholes, some capable of holding many gallons of water, occur on the stony hills of both Pitcairn and adjoining Hill Grange station. The openings of some of these rockholes have been covered with flat slabs of stone, probably by the aboriginals, to prevent animals drinking the water, and to reduce contamination and evaporation.

FLORA AND FAUNA

The flora of the area, characteristic of the dry parts of South Australia, appears to be a northerly extension of the Murray belt of scrubland. The eucalypts are, for the most part, the dwarf varieties generally classified under the name "Mallee". Scrub Sheoak, *Casuarina distyla*; Sandal-wood, *Santalum lanceolatum*, and mulga, *Acacia aneura*, grow on the open flats, and the native pine, *Callitris glauca*, on the ranges. Native peach trees (quandong), *Santalum acuminatum*, whose fruit was much favoured by the aboriginals, are occasionally seen on both the plains and the sides of the stony hills. Salt-bush, *Atriplex vesicarium*, and blue-bush, *Kochia sedifolia*, cover the undulating countryside, and tussocks of *Triodia* the higher hills and ranges. In the early days of white settlement this grass was known as "porcupine" because of its needle-like spines—hence the name, Porcupine Range. Spear-, and other native grasses flourish on the open flat country after the erratic rains.

Kangaroo, euros, emus, echidnas, lizards, snakes, goannas and many sorts of birds frequent Pitcairn station, but wombats, wallabies and dingoes, once present in considerable numbers, have become almost extinct since the Sawers family acquired the sheep station in 1895. It will be seen from this that there would have been an adequate supply of food to support an aboriginal population in recent and probably also in prehistoric times.

ROCK ENGRAVING SITES

The rock engravings on Pitcairn and Hill Grange stations have been divided into five groups, *i.e.*, Twelve Mile; Porcupine Range; Mafeking Hills; Manunda Springs and Hill Grange station (map, fig. 1). The first three of these groups are somewhat isolated from the others, while the latter two are situated on the continuous line of hills extending from Manunda Springs, across Hill Grange station, into the adjoining property. The present survey has been confined to Pitcairn and Hill Grange station; the engravings at other sites located in this north-eastern area are at present being investigated.

Twelve Mile

This site, a rocky outcrop near an out-station, is about twelve miles south-east of Pitcairn station homestead. At the present time the only indication of a water supply is a few minor rockholes near the engravings and possible soaks in the bed of a watercourse some distance away.

Fig. 2. Rock engraving designs from the Twelve Mile site, Pitcairn station.

The engravings are confined to the smooth surfaces of an uneven outcrop situated at the eastern end of the low line of hills rising out of the broad plain to the west of Levi Range (map, fig. 1). Although

the number of engravings is not large, the proportion of apparently unfinished designs is greater than those found among the other groups examined. Many of these engravings at the Twelve Mile are well preserved (plate 44), while others have been almost entirely worn away by erosive action of water and wind-blown sand.

There are few unusual designs at this site. Most depict animal tracks (fig. 2D, E, N, Q. X) and circles (fig. 2B, C, E, F, H, I, L, M, P, Q, T, U, V and X), all of them characteristic of South Australian rock engravings. The tracks include those of an adult emu with chicks (fig. 2G). There are a number of human foot and handprints with peculiar outlines (fig. 2M, R, S, U,), the feet having four, five or six toes, and the hands four to six fingers.

Porcupine Range

A semi-permanent spring is located in a secluded, steep-sided gully on the northern slopes of Waite Hill (map, fig. 1). As it flows towards the open plain the water from this spring fills many rockholes (plate 43, fig. C). Evidence of aboriginal visits to this isolated valley is indicated by the designs engraved on rock surfaces adjacent to the water supplies.

The most unusual and extensive group is an intricate collection of circles and tracks on one large pavement near a creek (fig. 6). Other designs (many badly weathered), include crescents (fig. 4E, F, K, L, R), a number of small engraved disc-like designs (fig. 4P), emu tracks (fig. 4H, J, M, S) and some human footprints (fig. 4G, O, Q). Several of the engravings of emu tracks (fig. 4J, S) may have been intentionally distorted. Mountford (personal communication) states that the aboriginals of the Wailbri tribe of Central Australia, depict the tracks of a mythical lame emu, *kalaia*, in a similar manner.

Mafeking Hills

Near some small rockholes among these hills, a few portions of engraved circles and tracks were found. There may have been other engravings at this site at some time, but the surface of the rocks has been broken into so many fragments that any other designs would have been obliterated.

Manunda Springs and Hill Grange Station

The aboriginals engraved many designs on the outcropping rocks in the line of hills (plate 45, fig. A) which extends in a general north-easterly direction from Manunda Springs across Pitcairn to the Hill Grange station (map, fig. 1).

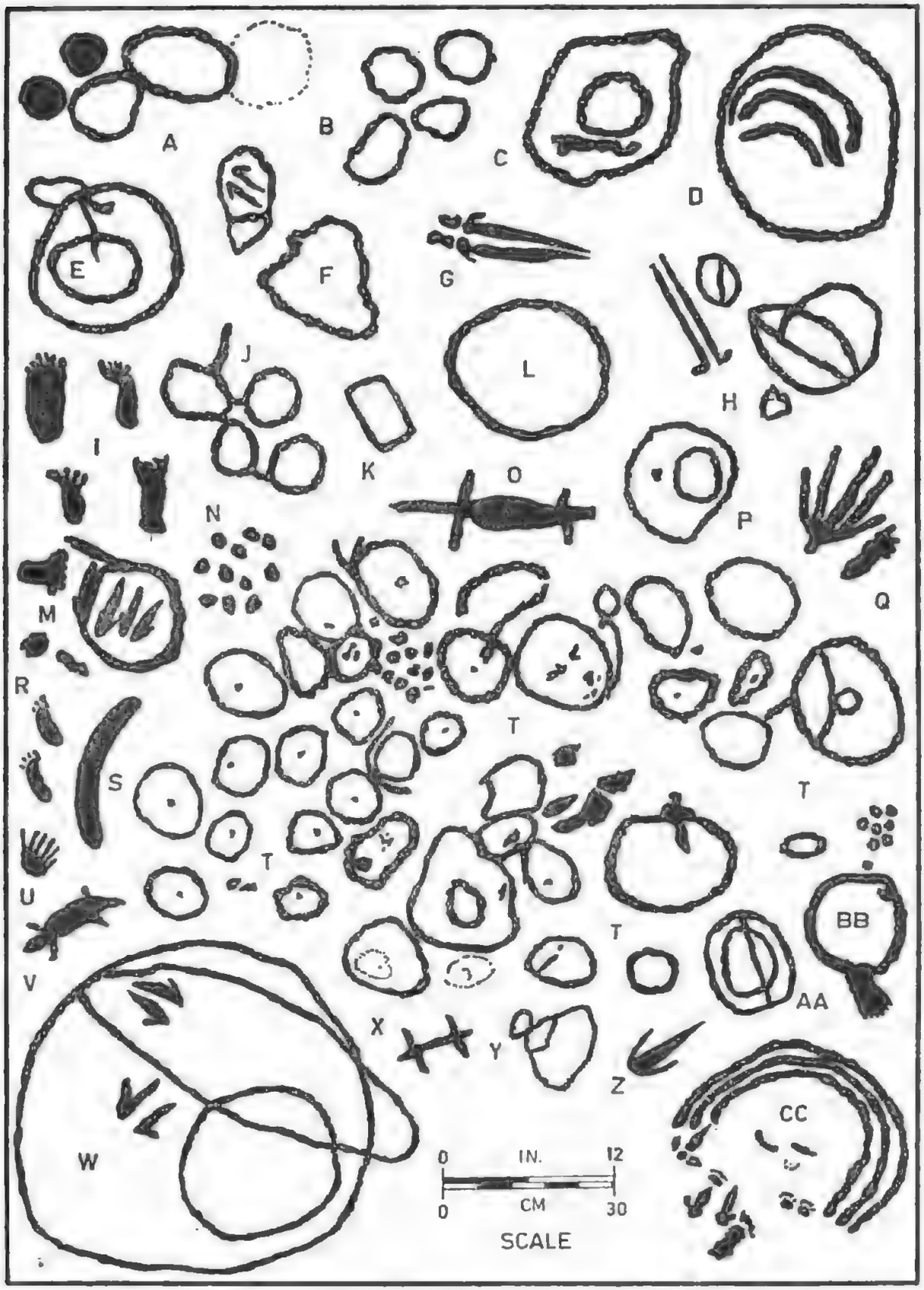

Fig. 3. Rock engraving designs from Hill Grange station.

Although there are a number of simple engravings at the Manunda Springs (fig. 4A, B, C, D), the designs are more numerous and complex near the Hill Grange boundary (plate 45, fig. B). Here are many circular designs (fig. 3A, B, C, D, E, F, J, L, P, T, W, AA, BB) and several examples of the barred circle (fig. 3H, AA). Fully intagliated lizard designs (fig. 3O, V), common in the Panaramitee area (Mountford and Edwards, 1963), are rare at this locality. As at the Twelve Mile site, animal tracks form a large proportion of the engravings. There are poorly executed human footprints (fig. 3I, M, Q, R, BB, CC), several small marsupial tracks with large crescents (fig. 3CC) and a few disc-like designs (fig. 3N, BB).

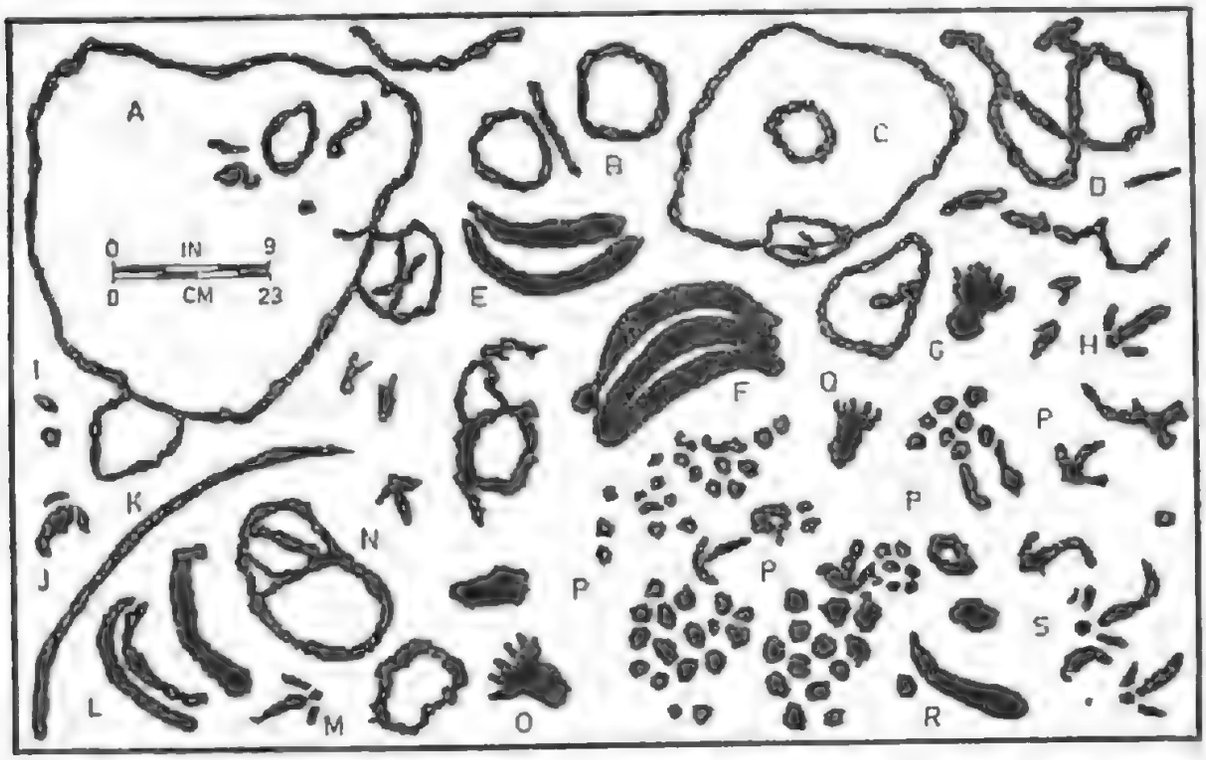

Fig. 4. Rock engraving designs from Manunda Springs and Porcupine Range.

During the examination of some rock engravings on the slopes of a hillside on Hill Grange station, a group of partly covered circles was noticed in the bed of a shallow gutter. The removal of soil and rubble to a depth from six to twelve inches revealed more engravings (fig. 5, plate 43, fig. B). Other buried rock faces probably exist, but as the deposition of the debris took place at irregular intervals of time, such detrital cover is not likely to supply evidence of age, but serve merely to protect the engravings from weathering and erosion. Similar occurrences of buried engravings have been recorded from sites in the Northern Flinders Ranges by Hale and Tindale (1925), in Deep Creek,

near Burra, by Campbell (1925) and Biddle (1925), and from Panaramitee North, by Mountford and Edwards (1963), and stated as being adjacent to, or in, creek beds, partly covered by a layer of soil.

TECHNIQUES

There is no published record of any white person having witnessed an aboriginal making an actual rock engraving in South Australia, and the tools are unknown. Basedow (1914, 1925), Hosking (1926), Mountford (1935) and Mountford and Edwards (1963) have suggested that rock engravings were produced with a sharp-pointed piece of hard stone, either hand-held or used as a chisel-like instrument.

Experiments on typical rock face material have shown it is possible to produce suitable pits by both methods. The use of a hammer-stone and chisel however enables a more controlled application of the force to the rock surface; as many of the designs were engraved with fine detail and accurately and sharply portrayed, some carefully directed use of the tools employed would have been necessary. The measure of exactness and regularity seen in many of the engravings (plate 44, fig. C) would have been difficult to achieve with a single hand-held implement. A search in the vicinity of rock engravings for specialized tools has been undertaken without success by a number of investigators, Basedow (1914, 1925); Stapleton (1931) and Mountford and Edwards (1963). As quartzite and the milky variety of quartz are the hardest materials available and occur in abundance near all the rock engravings, some fragments of these may have been used in one of the methods adopted. If struck with the correct amount of force and at a suitable angle, selected pieces of these materials have sufficient hardness and toughness to penetrate the softer rock surface a number of times without damaging the point. There are instances where variations in the size and shape of the individual punch marks can be seen, suggesting a difference in tool point and in the action of striking the rock surface to produce an engraving. Several of these variations are seen in plate 44, fig. C, D. Heavy blows from an implement of some weight would have been required to make the large circular pits which comprise the design on plate 44, fig. A. The detailed study being undertaken of the various kinds of depressions forming the designs of the engravings may help to provide evidence of the techniques employed.

Only a few examples of straight line markings (plate 44, fig. B) were found similar to those recorded from other sites by Basedow (1914); Tindale and Mountford (1926); and Mountford (1929).

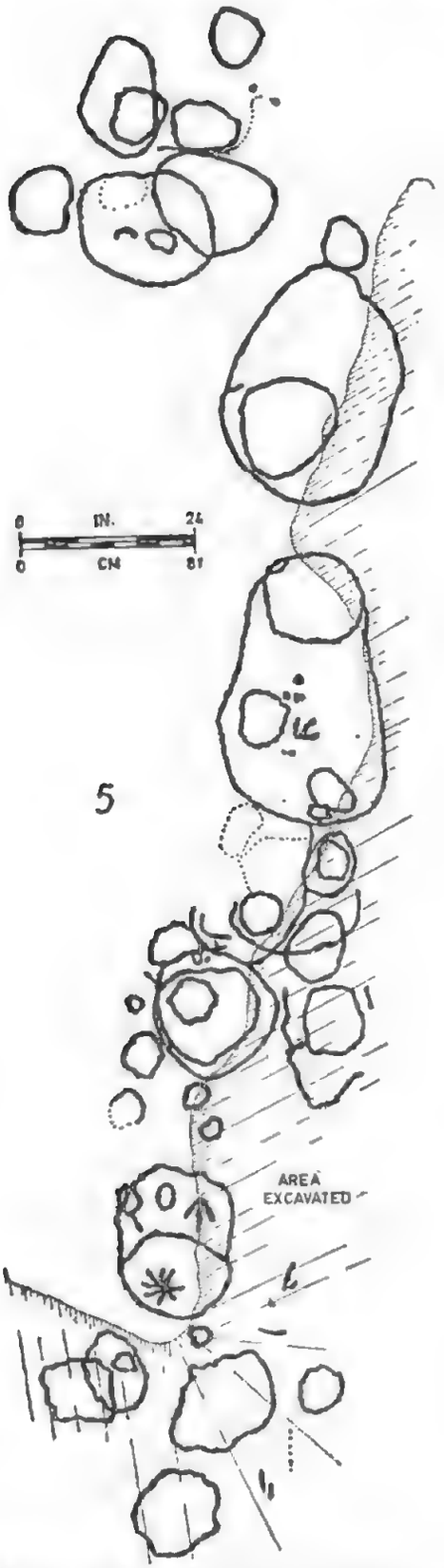

Fig. 5. Rock engravings revealed by excavation on Hill Grange station.
Fig. 6. Extensively engraved rock pavement in the Porcupine Range, Pitcairn station.

WEATHERING

Most of the sites so far examined have presented instances of engraved surfaces in an advanced state of deterioration due to the effects of long weathering. As there is insufficient evidence to determine the rates of this weathering process it cannot be used as a reliable basis for estimating age.

The engravings on outcropping rock surfaces situated on Hill Grange station provide striking evidence of the effects of weathering and disintegration. Chemical and mechanical weathering, aided by erosion by water and wind, appear to be the principal factors causing fragmentation of the rocks in this region. In some places only small portions of the designs remain while there are instances where practically the whole surface has been broken into fragments and many of them washed down the hillside. For example, a large group of circles (fig. 3T, T; plate 45, fig. B) has been so affected that some of them have obviously disappeared and nearby slabs of the engraved, outer layer of the rock have become detached and rest loosely on the underlying mass.

ANTIQUITY

Many of the authors who have recorded rock engravings in South Australia have speculated on their age (Basedow, 1914, 1925; Campbell, 1925; Biddle, 1925; Hale and Tindale, 1925, 1929; Hale, 1926; Tindale and Mountford, 1926; Mountford, 1929, 1935, 1960; Stapleton, 1931; Tindale, 1935; Cooper, 1941; Mountford and Edwards, 1962, 1963). The general opinion is that they are of some antiquity. This suggestion is based on the weathered condition of the rock surfaces, evidence of minor earth movements, patination, the presence of engravings of both extinct creatures and their tracks, and the fact that living aboriginals of the Flinders Ranges and other areas where such engravings exist have asserted that they are not the work of their people, but of mythical ancestors who lived during creation times.

The engravings have been cut into the hardened and heavily patinated surface layers of the local rock masses. Such rock alterations probably involve a long period of time. It is therefore important to determine, if possible, to what extent patination of the rock surface has occurred subsequent to the engraving of the designs. The strongest evidence of age must rest upon the extent of deterioration of engraved markings or their patination. While some have the appearance of marked "ageing", others present a sharpness in the cut margin suggesting a later origin.

Mountford and Edwards (1962) recorded their observation of the apparent absence of dingo tracks among the large number of engraved animal and bird tracks recorded in the north-east of South Australia. This may imply that some of these engravings predate the arrival of the native dog on this continent. No representations of dingo tracks were found among the engravings examined in the Pitcairn area. It is of interest that dingo bones were recovered in a recent archaeological excavation at Fromm Landing, South Australia, by Mulvaney, Lawton and Twidale (1964). Carbon 14 tests have dated the levels of these remains at between 1000 ± 91 B.C. and 1220 ± 94 B.C. and to be the oldest dated dingo remains recorded for Australia.

The engravings examined during this survey are comparable with others so far recorded from adjacent regions. There is a resemblance in the detail of the designs; weathering has advanced to a like degree and the same techniques appear to have been employed. It is therefore reasonable to suggest that the whole series (map, fig. 9) are the work of related groups of aboriginals, and may be contemporary.

While searching for rock engravings in the Pitcairn area, many rounded piles of fire-burnt stones (plate 43, fig. D) were observed along the Manunda and other watercourses (map, fig. 1). Gray (1930) at Orroroo and Meyer (1846) at Encounter Bay note the use of heated stones for cooking by the aboriginals, and it is likely that the blackened stones located indicate fireplaces. During the survey of Panaramitee station in 1961 (Mountford and Edwards, 1963) similar hearths were noticed along the Yunta and Winninnie Creeks and their tributaries. Such watercourses, supplemented by associated permanent springs, would have been sufficient to support both the people who made the neighbouring rock engravings and the game which would have provided them with a food supply. Consequently it appears that the watercourses of this region and the nearby exposed rock surfaces, were the main factors determining the situation of these rock engravings. The map (fig. 9) shows such a distribution in and around the Manunda-Yunta Creek drainage area.

The possibility that the Manunda Creek and its tributaries were once semi-permanent watercourses, flowing towards the Murray as part of the north-eastern drainage system, cannot be discounted if the present aridity of the climate of northern South Australia is of comparatively recent origin, as has sometimes been suggested (Howchin, 1914).

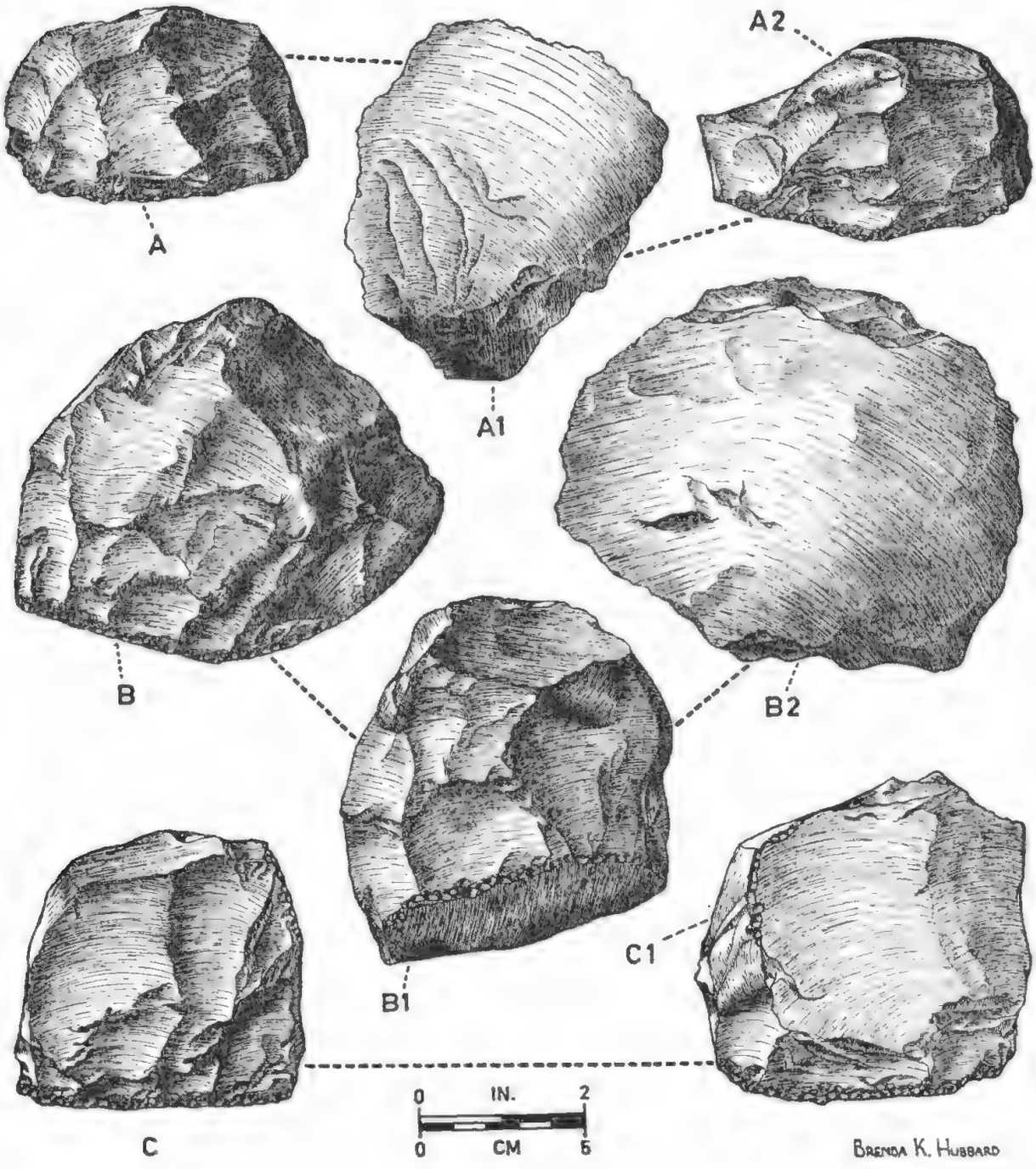

Fig. 7. Large stone implements from the Manunda Creek, camp-site A, Pitcairn station.

A. Large, trimmed flake implement, arapia in form, with a flat base and characteristic working platform. Specimen Reg. No. A54666 in South Australian Museum.

B. Trimmed core implement with a slightly convex or keeled base and secondary trimming around the periphery. A54667.

C. Horsehoof-shaped core implement with two working edges. A54668.

OCCUPATION SITES

In many instances where hearths were observed, the banks of the watercourses are almost devoid of vegetation, apart from occasional clumps of salt-bush and blue-bush. Some of these areas have been undergoing continuous surface erosion by wind and water, leaving a mass of stones strewn about on the bared areas of red clay. In some places, much of the land surface is disintegrating and being carried away in newly forming erosion gutters. Low rainfall and the effects of pastoral activities currently inhibits the growth of a cover of vegetation. Erosion has not only been responsible for exposing hearths and implements—some can be seen embedded in the banks of the watercourses—but it is likely that it has also caused some to have been washed away into the creeks.

The search for stone implements in these areas produced discarded flakes and implements of varying sizes. At three particular localities (map, fig. 1 A-B; C and D) the number of implements collected was sufficient to indicate more than a casual stopping place.

Manunda Creek (Site A)

This camp-site is located on a well-drained position on the high western bank of the Manunda Creek (map, fig. 1A). The now temporary spring at the base of some slate outcrops in the creek bed may account for the presence of the nearby camp-site. Here erosion has removed the more friable surface soil leaving an assemblage of stones, including many implements, discarded flakes and fire-hearths. The collection of artifacts made from this site consists of 231 large implements, mainly trimmed cores (*e.g.*, fig. 7) made from coarse grained quartzite readily available in the bed of the Manunda Creek; 90 smaller flakes of irregular shape with varying amounts of trimming; 18 worked cores; two geometric microliths; two microlithic end scrapers made from australites; 114 discarded quartzite flakes and 63 scraps of milky quartz and chalcedonic material.

Manunda Creek (Site B)

Some eroded clay flats, a little to the north, form an extension of the main Manunda site (map, fig. 1B). Here fireplaces were located and a few large implements and untrimmed stone flakes collected.

Manunda Creek (Site C)

This camp-site is on the banks of the Manunda Creek about a mile up-stream from the main site (Site A). Only a small number of

implements were found, but an interesting feature was some well-defined areas strewn with great quantities of milky quartz fragments, apparently broken up during the manufacture of implements from this material.

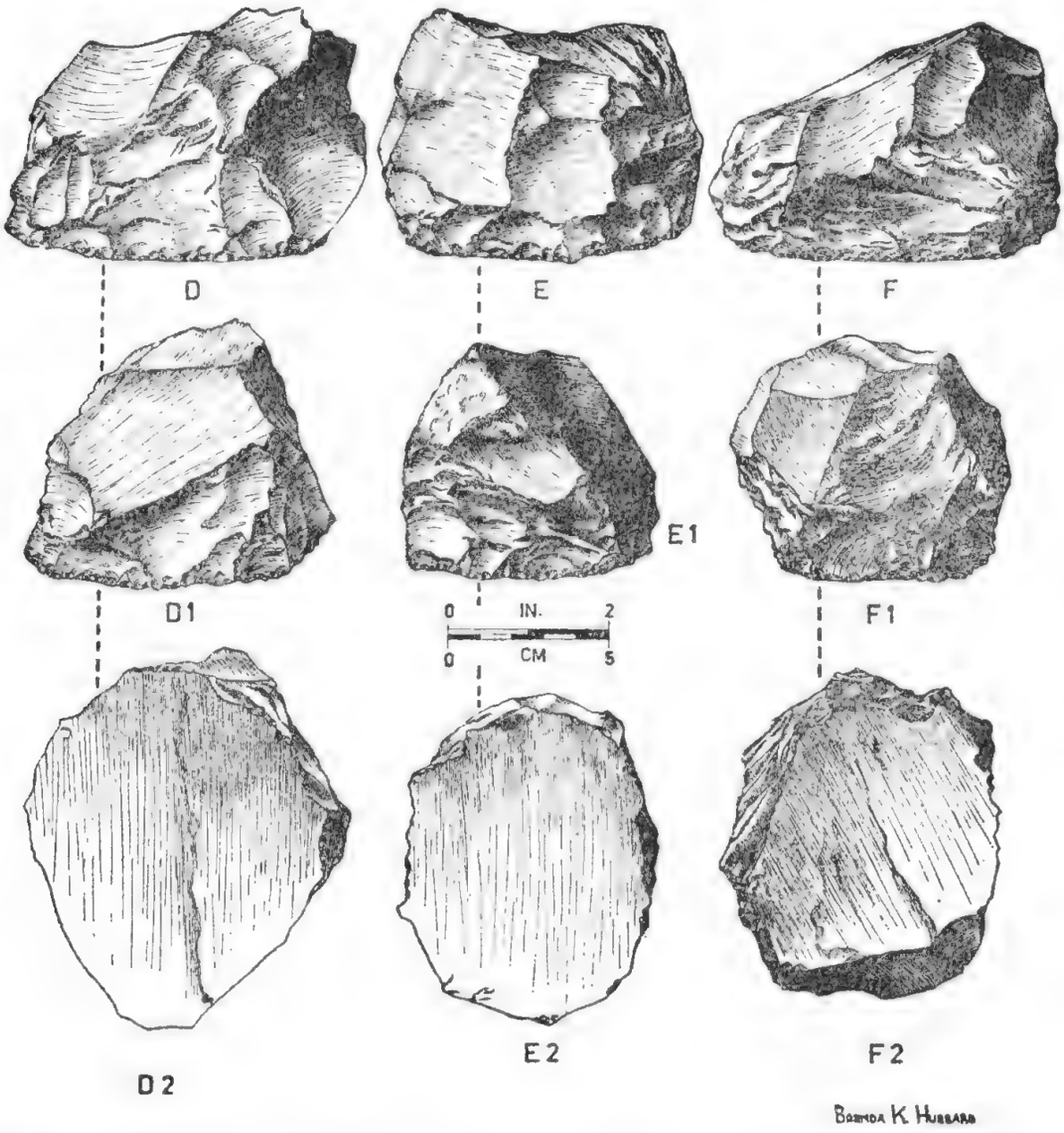

Fig. 8. Large trimmed core implements from Albert Hill, camp site D, Pitcairn station.

D. Core chopping implement showing the functional edge sharp and intact. A54669.

E. Core chopping implement with functional edge re-worked or sharpened as a result of continued use. A54670.

F. Core chopping implement re-worked to such an extent that the implement is almost worn out and of little further use. A54671.

Twenty-eight artifacts were recovered, including 14 semi-discoidal adze-stones of milky quartz; 24 indefinitely shaped flakes of the same material (all bearing evidence of secondary trimming), three geometric and one semi-discoidal microliths.

Albert Hill (Site D)

This rather isolated camping ground, covering some 50 acres of the banks and adjoining flats of a Manunda Creek tributary, is midway between the Pitcairn homestead and the Twelve Mile rock engravings (map, fig. 1D).

The variety in the implement types collected differ from those of the main Manunda Creek camp-site (Site A). Thirty-eight large core implements were recovered; microliths comprised 15 geometrics, one discoid and three semi-discoids, one nosed scraper, seven end-scrapers and some small worked cores. There were approximately 800 scrap flakes; six of these show trimming. Some of the large implements are good examples of their respective types, three in particular (fig. 8) clearly exhibit the stages of modification of the shape of a core implement when it was continuously re-sharpened.

DISCUSSION

There is no conclusive evidence to indicate the density or permanence of the prehistoric population of the Pitcairn region. The number of artifacts found is small when compared with the quantity recovered from other parts of northern South Australia (Mitchell, 1949; Cooper, 1954). This suggests that this particular area was not permanently occupied by a large community at any period.

The predominance of large implements among the material collected on the Manunda Creek indicates a similarity to the *Kartan* camp-sites recorded at Hallett Cove (Cooper, 1959), near the River Wakefield (Cooper, 1961), and to a limited extent on Kangaroo Island (Tindale and Maegraith, 1931; Cooper, 1960) where the proportion of such implements was also high in comparison with smaller types. Other massive implements were retrieved by Cooper (1943) from camp-sites near the rock engravings at Mount Chambers Creek, Oratunga and on Boorloo Creek near Marree (Cooper 1941). Most of the implements from all these sites are similar in size, form, material and technique of manufacture.

Assuming these are Kartan implements and are ancient, as has been suggested, they may belong to the same period as the rock engravings. If so they provide further indications of the possible antiquity of the engravings.

Many of the trimmed core implements recovered from the Pitcairn area bear evidence of constant use, some having been sharpened a number of times by trimming the functional margin with blows by a hammer-stone (figs. 7 and 8). The edges of some tools have been re-worked in this manner so often, that further sharpening would have been impossible and they were obviously discarded. Cooper (1961) states that the high proportion of core chopping implements found along the banks of the River Wakefield—also worn to the limits of their usefulness—may represent an accumulation of tools discarded over an extended period by a relatively small population. This may also be the explanation for the findings of the Pitcairn area.

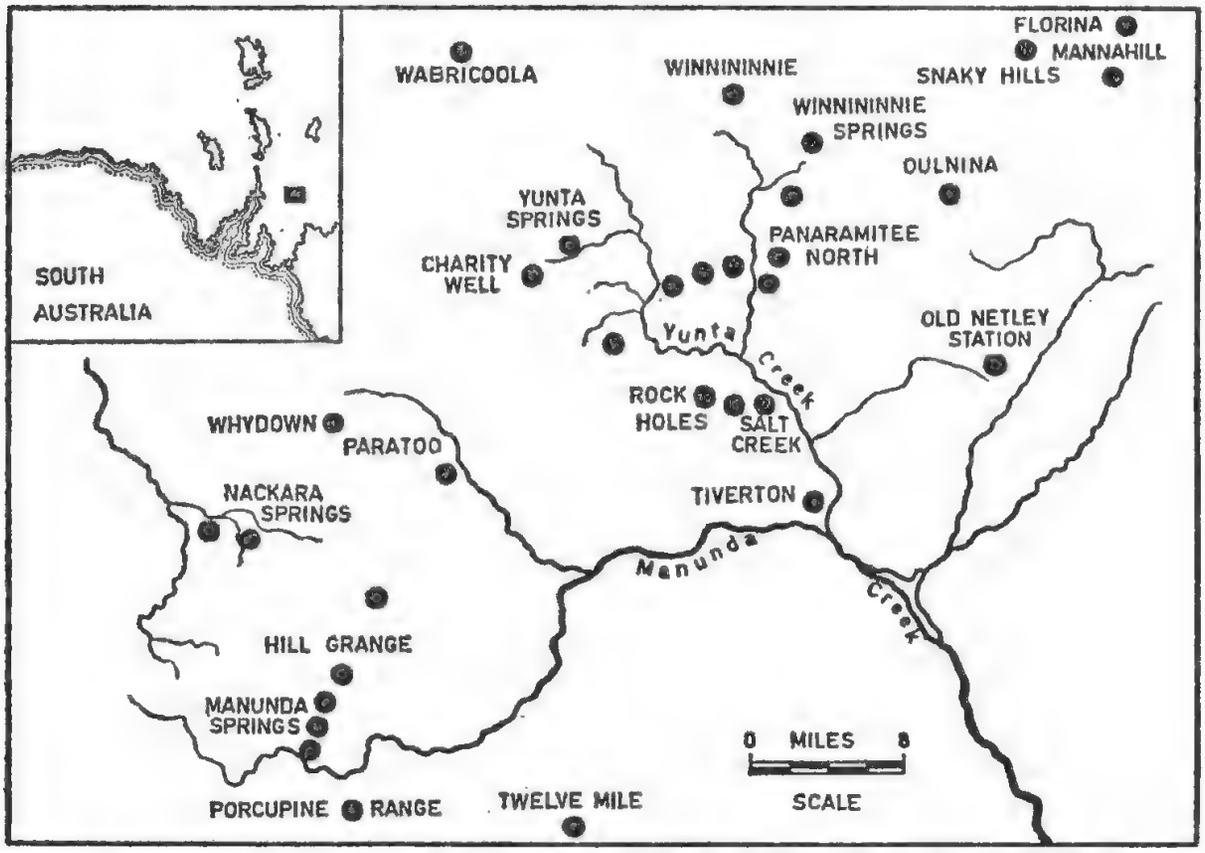

Fig. 9. Map showing the general distribution of known rock engraving sites in or near the Manunda-Yunta Creek drainage area.

Certain rock painting sites in Central Australia are situated well away from regular camping places and forbidden to all but the fully initiated. In contrast to this, the groups of rock engravings in the north-east of South Australia occur in places where good water and food supplies were available and therefore may have been near regular, general occupation sites. If so, the engravings may not have had any particular restricted sacred or ceremonial significance but rather

represent the efforts of the aboriginal inhabitants of the long past, reminding themselves of their mythical and legendary stories in both naturalistic and abstract styles. Interpretation of such a vast array of stylized figures is not an easy matter. Certain of these, such as simple or concentric circles, wavy lines and crescents, are not uncommon among designs executed by living aborigines and may thus be decipherable. But in addition there are many other designs and patterns which could probably be designated as expressions of abstract aboriginal art. Further discussion of this aspect is beyond the scope of the present paper, the purpose of which is to record the available information about the rock engravings and stone artifacts of the Pitcairn and Hill Grange stations.

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EXPLANATION OF PLATES

PLATE 43

Fig. A. Hill Grange station looking south with the Porcupine Range in the background.
Fig. B. Rock engravings revealed by excavation on Hill Grange station.
Fig. C. Semi-permanent spring situated in the Porcupine Range, Pitcairn station.
Fig. D. Fire blackened pile of stones on the Manunda Creek camp-site, Pitcairn station.

PLATE 44

EXAMPLES OF ROCK ENGRAVINGS, TWELVE MILE SITE, PITCAIRN STATION

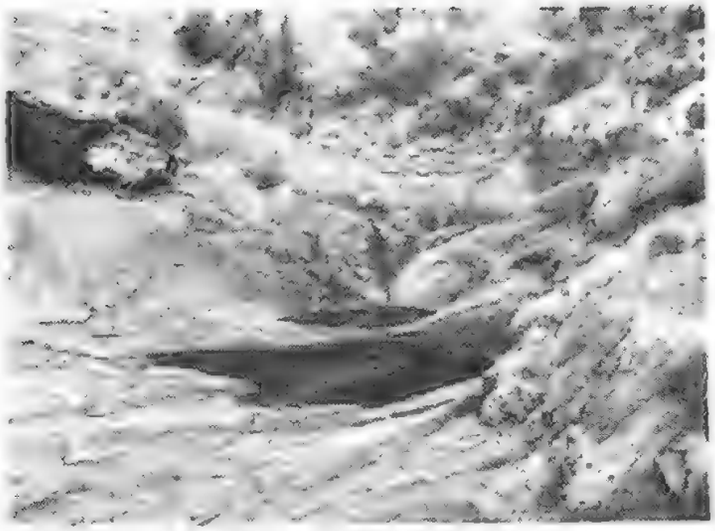
Fig. A. A circular design composed of rounded pits.
Fig. B. Straight line markings.
Fig. C. An unfinished emu track with variations in size of the peck marks.
Fig. D. Typical South Australian rock engravings.

PLATE 45

Fig. A. Hill Grange station, looking north.
Fig. B. A weathering, engraved rock surface, Hill Grange station.

A

B



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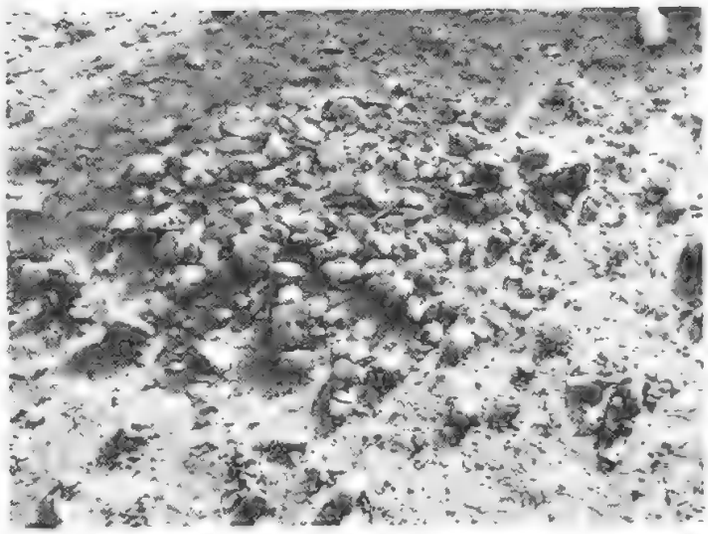
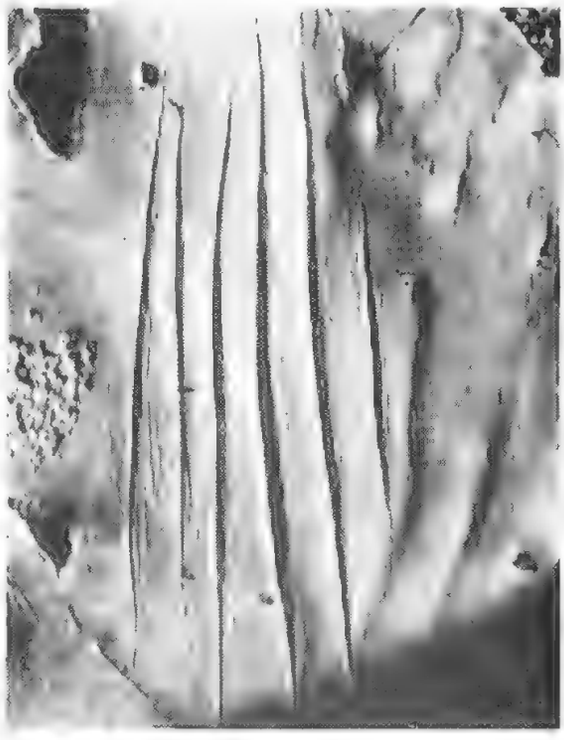


D

A



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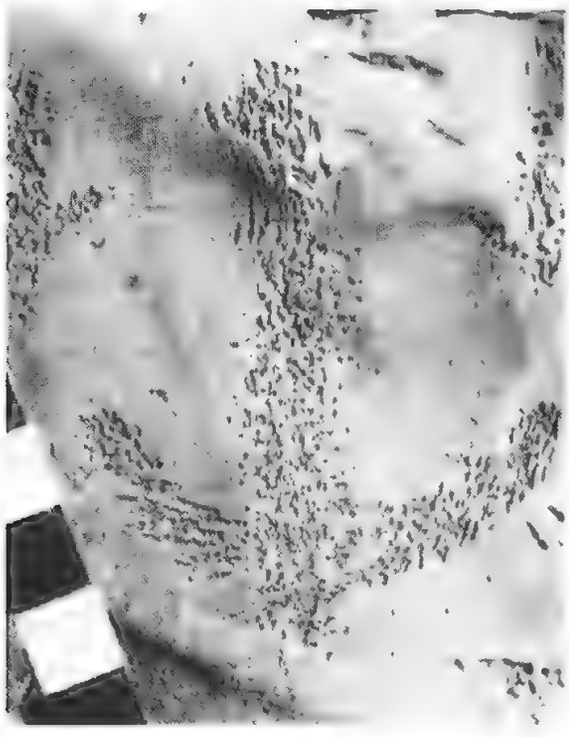

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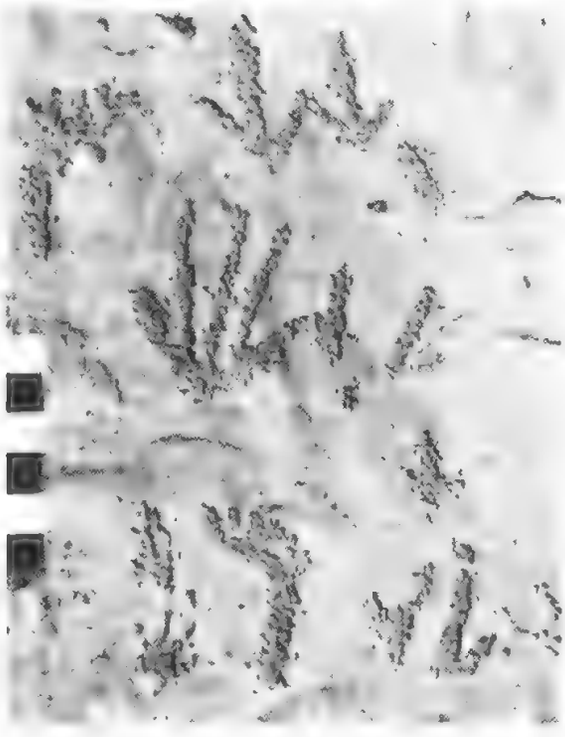

D