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PRELIMINARY EXCAVATION REPORT,
ANAI'O, MA'UKE, COOK ISLANDS, 1987

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Ma'uке is a raised coral-reef island with an area of 1,843 ha lying 245 km north-east of Rarotonga in the Southern Cook Islands Group. Ma'uке, along with Atiu and Mitiaro, is part of the traditional three island political system of Ngaputuru. These other two islands lie about 50 km distant, Atiu to the west and Mitiaro to the north-west. In February and March 1985 an exploratory excavation was carried out on Ma'uке at the Anai'o site (Fig.1). The purpose was to locate the source of a series of 'archaic' style artefacts that had found their way into the Cook Islands Museum on Rarotonga and which had apparently been unearthed by roadwork activities at Anai'o during the 1970s. The results are summarised below; details can be found in Walter (1986).

The 1985 excavation

Anai'o is situated on the west coast of Ma'uке adjacent to an excellent reef passage about 1 km south of the village of Kimiangatau. The site lies about 150 m inland on the beach ridge and very close to the inland reef beds. The total area of the site was determined to be in the order of 2,000 m². (Fig.2).

The stratigraphic profile of the site was identified as comprising six distinct layers. There were two occupation layers, the most recent lying under about 40 cm of sterile grey sand. Immediately below this layer was a deposit of white coral sand lying over Occupation One. A cultural sublayer was defined below the Occupation One horizon and this was initially thought to represent early clearance activities. This sublayer was later shown to be very localised and is now incorporated into the Occupation One horizon. The base layer at the site consisted of a white gritty coral sand containing many large coral rocks.

An area about 20 m² was excavated at Anai'o comprising three 2 x 2 m squares and several trenches.

The conclusions reached after the 1985 excavation were that the Anai'o site represents a large permanently occupied and fairly densely settled coastal village site. Carbon 14 analysis revealed that first occupation occurred during the 13th century with the second occupation (following a period of abandonment) occurring a century or so later. Evidence

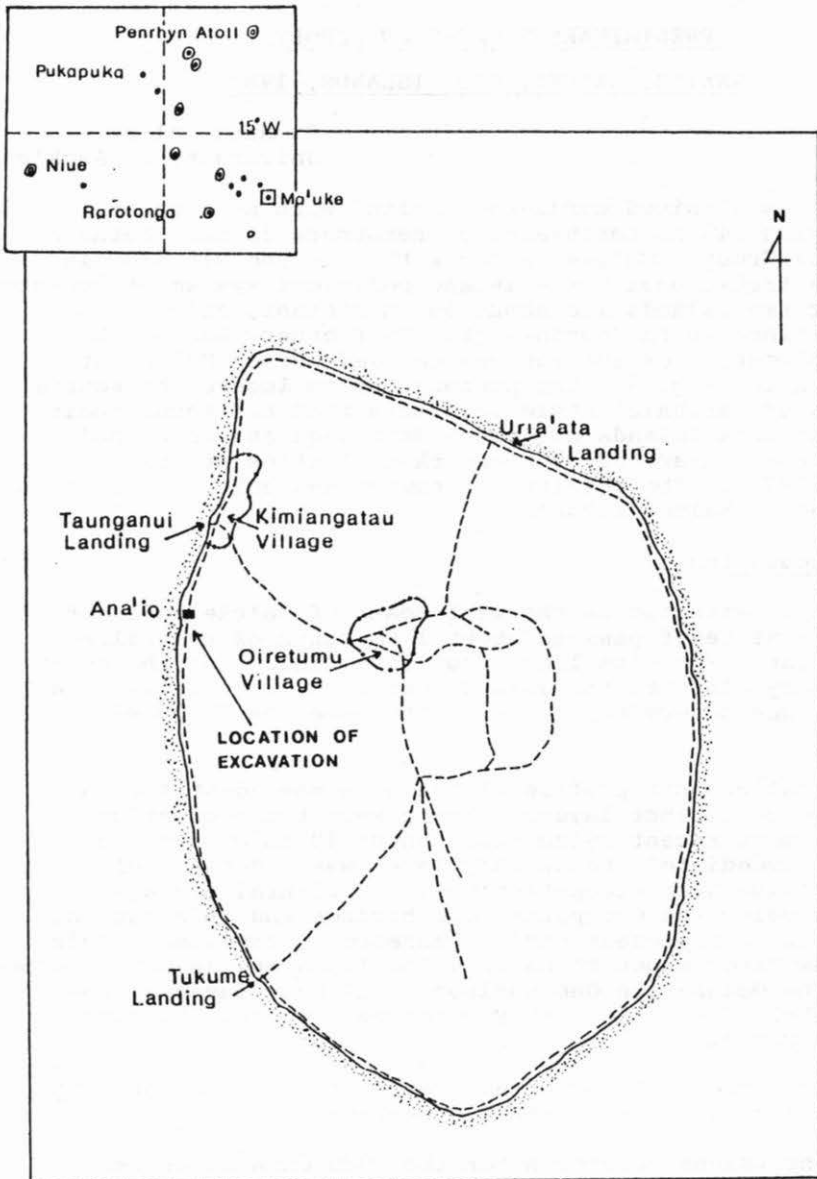


FIGURE 1. Ma'uke, showing location of excavation.

was found in the Occupation One horizon of several discrete activity areas suggesting a formal village layout. These areas represented both shell and stone working activities as well as cooking/food preparation areas. A large amount of industrial pearlshell (a material not found naturally in Ma'uke or adjacent islands) was found in this early horizon suggesting a reliance on some form of off-shore trade.

The site was abandoned some time around the beginning of the 14th century following the destruction by hurricane. This was represented by the deposition of Layer 3, argued to be a wind or wave borne deposit.

The second occupation layer contained few features but was present in most of the areas tested. It also contained very little midden debris and it was argued that this layer probably represented a different site function, possibly the use of the land for planting activities.

Faunal remains from Occupation One included bones of off-shore and inshore fish species as well as pig bone. It was suggested that the economy of the village involved a mixed horticultural/marine base with some concentration or specialisation in the exploitation of the off-shore marine zone.

The 1987 excavation

The follow-up excavation carried out at Anai'o took place between January and March 1987. This second excavation was undertaken by the author with the assistance of eight labourers and two part-time assistants from the Cook Islands Museum. A total area of approximately 200 m² was excavated over a period of ten weeks. The aims of the excavation were:

1. to examine and record the internal structure of an Early East Polynesian village site,
2. to document the 'Archaic' phase of Southern Cook Islands archaeology.

A real excavation was conducted to open as large a contiguous area as possible in order to determine the spatial relationships between site components. Following the initial testing of subsurface profiles along a north-south and an east-west axis, two areas were selected. Initial testing showed little differentiation in gross structure of stratigraphy throughout the site so the two areas selected for detailed excavation were chosen on the basis of being as far apart as possible in order to contrast differences of structure, and as free of natural obstacles to excavation such as coconut trees, coral outcrops, etc.

In 1985 I divided the site into three roughly defined areas for purposes of aiding description. These areas were, the North Flat, the South Flat, and the Quarry Area. The first area selected for excavation lay on the North Flat and the second lay about 30 m south on the South Flat (the Quarry Area is all but destroyed through roadwork and rubbish dumping activities). A 2 x 2 m grid was laid over the site and squares were enlarged or abandoned according to content.

Excavation was carried out by natural layers and all soil from cultural horizons was sieved through either a 3 mm or a 5 mm sieve as appropriate. It was found early that there were a number of complex sublayers and intercutting lenses comprising the first occupation layer and, to a lesser extent, the second. Features were often not apparent in the upper portion of these layers but became evident only as they were seen cutting through the earlier naturally deposited sands, which were much lighter in colour. As a result it was decided to remove the cultural layers in thin spits of about 30-50 mm making plan drawings after each spit had been removed.

All finds were recorded either to quadrant (in the case of midden shell or bone) or plotted on plans. Results were entered into a computer based data base in the field.

Site history

On the basis of a number of long trenches and on systematic testing between the site and the beach, a broad picture of site history has been built up. The first village site at Anai'o was built on the back of a low beach ridge that ran between the beach and the inland reef beds. The beach on this and other raised coral-reef islands in the Cook group lies below a low coral cliff face, the ridge sloped gently from the top of this cliff reaching a height of about 9 m above sea level at a point 150 m from the present beach line.

Although a cultural layer could be traced as far seaward as the beach cliff, habitation areas were confined to the top and the upper slopes of the beach ridge about 150 m from the sea.

The site was later hit by a hurricane and covered with a layer of white beach sand. This event involved at least two wave washes over the site which disturbed the seaward portions of the site and filled some low areas in the habitation zone with beach debris. A thin layer of fine sand was then blown over the site, accumulating mainly at the back of the beach ridge near the inland reef beds.

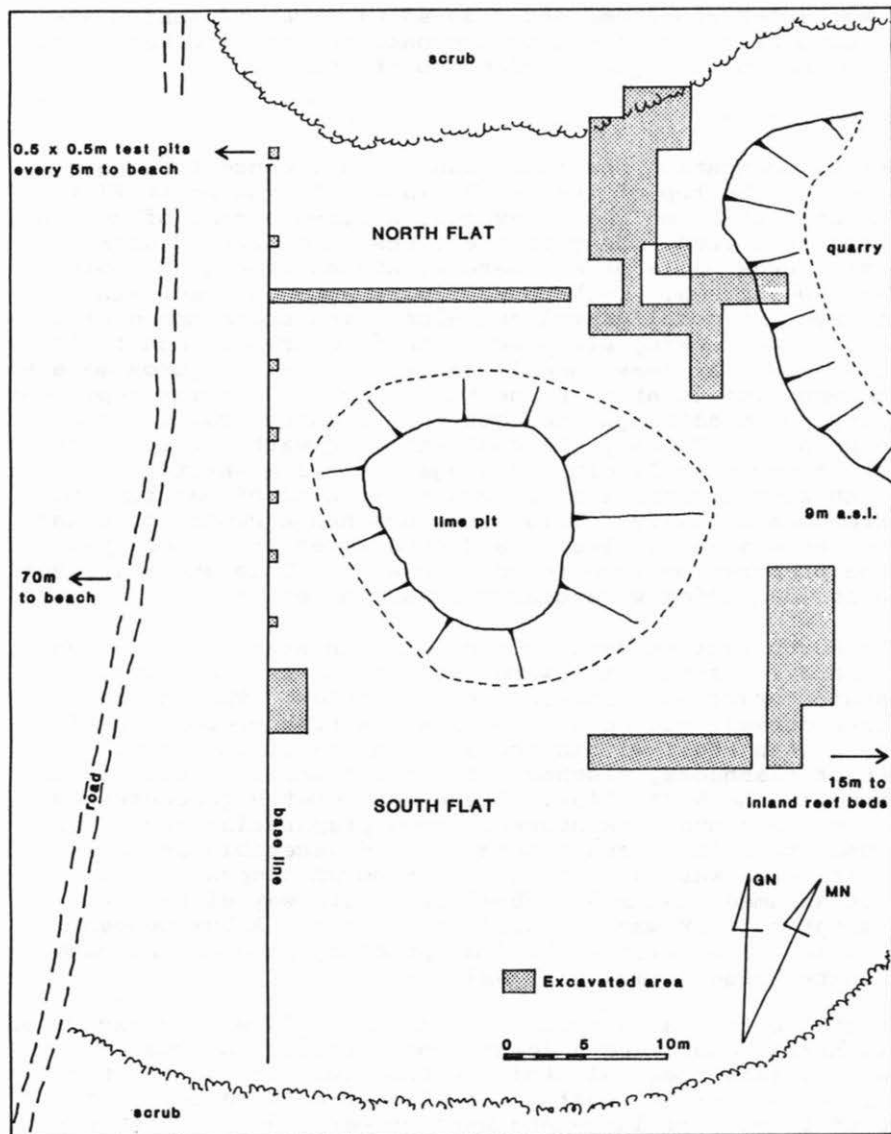


FIGURE 2. Anai'o site, Ma'uke, showing excavated areas.

Less than a century later a second village was built. This later village was centered high on the beach ridge and did not stretch as close to the beach line. The second occupation was later abandoned and a 30-45 cm layer of sand gradually accumulated. During both occupations the site was almost flat with only a very gentle slope to the beach.

Occupation One

During Occupation One there was a heavy concentration of housing on the top of the beach ridge. In the North Flat, where a total of 90 m² was excavated, a large number of cooking areas were uncovered. Many of the ovens were located within small structures while others were clustered around the outside of these cook-houses. Cook-house floors were covered with a light layer of coral gravel and along with areas immediately adjacent to the cooking areas were the site of most manufacturing activities. At least one larger structure of approximately 16-20 m² was also located in the North Flat. This may represent a dwelling house although the lack of a compact gravel floor and the presence of heavy charcoal staining within the structure suggests it was more likely a storage area or a shelter associated with food preparation or some other kind of manufacturing or maintenance activity. This structure had a number of ovens scattered around its perimeter and some artefacts associated with food preparation were found within it. This and all other structures identified were quadrangular in design.

The North Flat appears to represent an area in which many food preparation activities were carried out in conjunction with manufacturing and maintenance activities. The cooking areas were densely packed and there was a high proportion of bone and broken shell within the soil matrix of the layer. A number of fishhooks, fishhook blanks and shell working tools were found in the North Flat. These were mostly concentrated around the ovens and cook-houses. Food preparation tools were also found including coconut scrapers and vegetable peelers. No definite area was identified as a rubbish disposal area and it is assumed that most debris found its way either into the adjacent soil or was disposed of by pigs. A low concentration on shellfish within the diet probably negated the need to designate large formal disposal areas.

In the South Flat a total area of about 70 m² was excavated. The soil matrix contained a lesser concentration of midden material and less charcoal staining than the soil on the North Flat. In this area at least three structures were identified and two of these were large and were probably dwelling structures. Both of these structures had floors covered with a deep (7-10 cm) layer of clean, water washed coral gravel.

Very little midden debris was found within the structures although they did contain a number of complete fishhooks and neck ornaments.

The largest structure on the South Flat appears to have been at least 7-8 m in length with a veranda area defined by lines of rocks and with the entire veranda area infilled with large, coarse coral pebbles.

Several metres to the east of this large structure was a stone faced terrace on which a second structure had been built. The terrace itself was probably natural in origin although it had been reinforced by placing coral rocks along the face. The structure had a floor of coral pebbles and there was a fire pit located on the terrace outside the west wall. A cooking house with a stone lined oven was located below the terrace, 3 m from the south wall of the house. This structure also had some sort of veranda or paepae area marked out by lines of rocks but this had been badly damaged and was difficult to define.

The South Flat appears to represent a dwelling area rather than a work area. Little evidence was found of manufacture or cooking (other than one cook-house and this contained very little in the way of cooking debris). The contrast between this area and the North Flat is great. The house floors in the South Flat are clean and there is some evidence that the ground around the outside of the houses was kept clear.

The terrace structure seems to be directly associated with the small cook house and together they may represent a discrete household unit. A large coral enclosure just to the west of the terrace may represent the household pig pen as there are several similar structures located 100 m to the east within the reef beds and which are certainly prehistoric in origin. This unit would be in contrast to the, probably communal based, activity areas identified on the North Flat.

In general it seems apparent that there was some internal differentiation within the Occupation One horizon. To the north, most of the cooking and manufacturing was carried out and this was probably on a communal basis. This is argued on the basis of there being little evidence of dwellings or of formal divisions between the various cooking areas. The soil is also deeply stained and contains much midden debris suggesting that the ground surface was not as well kept as it was to the south.

The main dwelling area in the site was probably to the south where the structures are larger and where there is little

evidence of manufacture or food preparation. There is almost no staining of the soil within these structures and this suggests that they were dwelling rather than industrial structures. The size of at least one of these structures suggests the possibility that it was for community use, the paepae area may possibly indicate its use in some formal capacity.

Occupation Two

The Occupation Two layer, although present over most of the areas excavated, was not as densely covered with features as the earlier horizon. The major centre of occupation during this phase was probably in the North Flat area. Here several small stone lined structures were located although only one was well defined. The soil was not deeply stained although a small amount of fishbone was scattered throughout the matrix. A number of fire pits and oven were found in the North Flat but these did not seem to be associated with any structures or work areas. The one exception to this was the stone lined structure described above which was associated with a fire pit and was the site of a flaking floor containing several hundred flakes. Two quadrangular adze roughouts and a number of basalt cores were also found. No shell working floor was found although evidence of shell working was scattered throughout the soil in the form of abraders, blanks and portions of worked pearlshell.

The major difference between occupations one and two is that the later occupation contained very little structural remains or midden debris. The initial proposal that this was a garden soil is no longer acceptable as there is enough artefactual material in the soil to suggest that permanent habitation areas were close by the excavated areas. It is probable that this site was abandoned before there was enough time to allow the accumulation of a large amount of debris. The wide spread of the cultural layer throughout the site but without much evidence of features is puzzling but it is possible that the focus of settlement was located in the now destroyed Quarry Area.

No features other than two or three unrelated postholes were found in the Occupation Two horizon in the South Flat although the layer was present in most areas excavated and contained a number of artefacts and oven stones.

Portable artefacts

More artefacts were recovered from the Occupation One horizon than the Occupation Two horizon, but in general artefact types were similar. Stone tools included adzes of quadrangular, lenticular and oval cross sections, the quadrangular

type being most common with oval cross section confined to a single broken example from Occupation One. Adzes were manufactured from basalt, of which at least two sources were probably used. Flake tools in basalt were also found. Other stone tools included slingstones, fishing sinkers and sharpening stones.

A range of one-piece fishhooks were found of which all were in pearlshell with a size range from less than one centimetre to about 12 cm. Shell working tools included abraders which were made from branch coral, echinoderm spine or from small stalactites from the caves.

Food preparation tools included pearlshell coconut graters and vegetable peelers made from turbo shell.

Neck ornaments included drilled fish teeth and fish bones and pendants made from pearlshell and mammal bone. Tattooing chisels were found in pearlshell and mammal bone and several pearlshell and mammal bone spearpoints were also found.

In general the material from Anai'o is similar to the 'Archaic' or 'Early East Polynesian' assemblages found on sites of a similar age elsewhere in East Polynesia.

Conclusions

The 1987 excavation showed conclusively that the Anai'o site was an internally differentiated site with specific areas set aside for specific purposes. Several of these site components have been identified and it should be possible to build up a reasonable picture of the socio-political structure of this early East Polynesian community through examining more closely the relationship between these different areas. It has already been suggested that there is a distinction between community activity areas and household activity areas and this point will be addressed fully as analysis progresses.

The artefactual assemblage is varied and probably represents the greater part of the range of non-perishable portable artefacts from this period of Southern Cook Islands prehistory. It remains to be seen how this assemblage compares in detail to contemporaneous assemblages from elsewhere in East Polynesia.

No midden areas were identified and although many bags of bone and shell were removed from the sieves it is doubtful whether it will be possible to quantify the role of various foods within the diet. It should, however, be possible to extract some information on the range of marine foods utilised

and this will be studied in relation to the fishing gear recovered and to the range of food preparation and storage areas recorded. Initial evidence of heavy use of the outer marine zones is further reinforced by the 1987 findings but this is complemented by evidence, in the form of specialist reef zone hooks, of widespread exploitation of these inshore zones also.

The question of inter-island communication during this period of Cook Island prehistory is of great importance not only in terms of defining economic relationships between distant communities but also in terms of investigating the development of a distinctive East Polynesian cultural complex. This latter question probably belongs to a much earlier period of prehistory but models based on concrete data from this later phase may prove valuable. It seems that a very high proportion of the goods manufactured and used on the Anai'o site had their origin outside the immediate vicinity of Ma'uке (outside the area of Ngaputoru and Mangaia). We will probably have to propose at least two different sources to account for the range of stone types and shell found at Anai'o and this will almost certainly involve source areas outside the Southern Cooks altogether.

The earliest occupation at Anai'o dates to the late 12th or 13th century but by this time there was a large stable population in residence, involved in some form of regular long distance communication suggesting initial occupation of the island at a considerably earlier date. The form of the site, as a large, permanently occupied and densely settled coastal village contrasts markedly in all these respects from the type of sites described in Ngaputoru by early European visitors. This shows that there is considerable work to be done in defining archaeologically the changes that have taken place in Cook Island history in terms of settlement types, economics and socio-political structure. The 1987 excavation at Anai'o should address some of these problems and at least describe the situation on one island at a point in time that will probably prove eventually to be only around midway through the entire Cook Islands prehistoric sequence.

Acknowledgement

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Reference

- Walter, R.K. 1986 Report of the Excavation of the Anai'o Site: Ma'uке, Cook Islands. 1985. Cook Islands Library and Museum. Rarotonga.