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PRELIMINARY FIELD SURVEY OF LITTLE BARRIER ISLAND

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ABSTRACT

A limited field survey of an off-shore island, east of Auckland, North Island, New Zealand, revealed fortified pa, pits associated with ditches, and stoneworks. The two pa surveyed were headland ridge pa with transverse ditches across the ridge and steep natural slopes. Terraces were present where the terrain was suitable on the lateral slopes, and pits and other earthworks were present. The plan of one is reproduced.

Remote from the pa were a number of transverse ditches in apparent association with clusters of pits. These occurred on the ridge which led to the summit of the island.

A coastal area was surveyed in some detail and found to contain stoneworks, although it was difficult to distinguish between natural beach cusps and man-made or modified structures. The most significant stone field remains were mounds, rectangular structures, perpendicular and heaped walls.

The preliminary survey failed to determine whether settlement has been continuous or seasonal, but the frequency of pits indicates successful agriculture. The island may prove on further investigation to be suitable for an ecosystem study of the Classic Maori.

INTRODUCTION

This survey (10-17 December 1968) was an attempt to provide an outline of archaeological field remains and an indication of future research possibilities on Little Barrier Island. The areas surveyed were Te Maraeroa (The Flat), two nearby ridges and the main summit track, all of which were in the south-west sector of the island (see Fig. 1).

Fig 1 LITTLE BARRIER ISLAND

-  Area investigated
-  Pa
-  Main summit track
-  Thumb track
-  Reported pa (Goscewen)
-  To Marmora

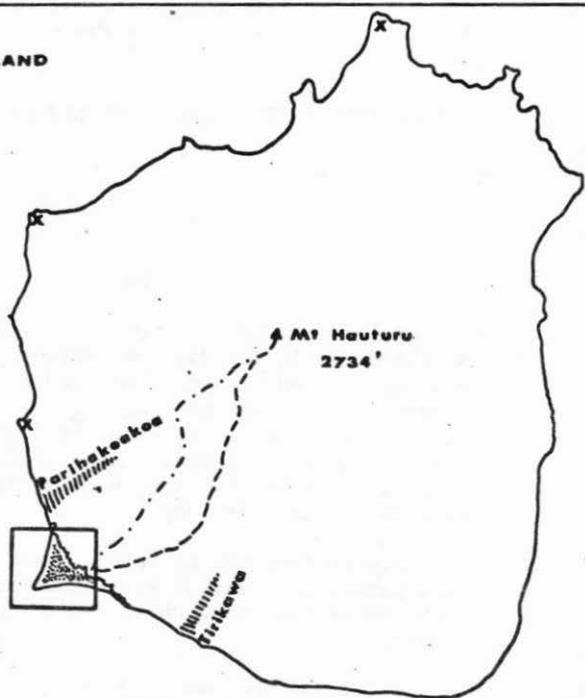
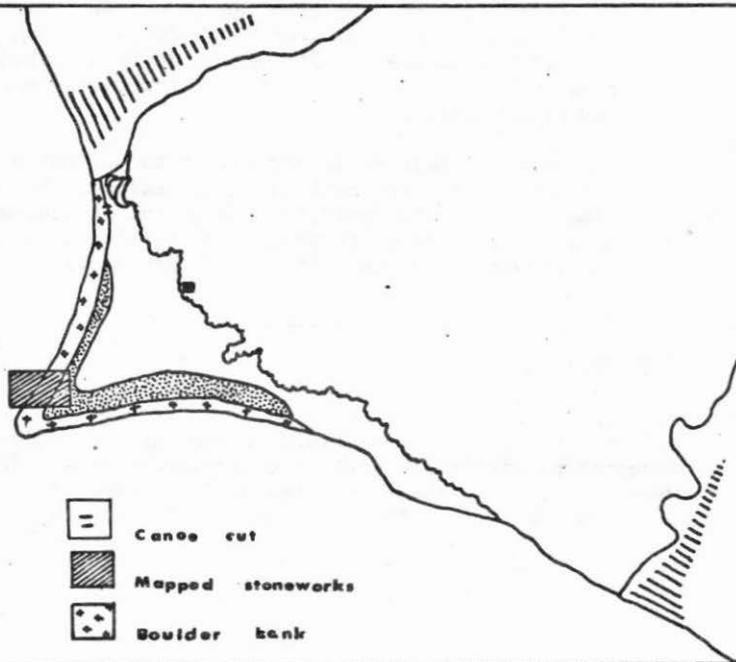


Fig 3 Inset

-  Pits
-  Terraces
-  Pa
-  Stoneworks
-  Canoe cut
-  Mapped stoneworks
-  Boulder bank



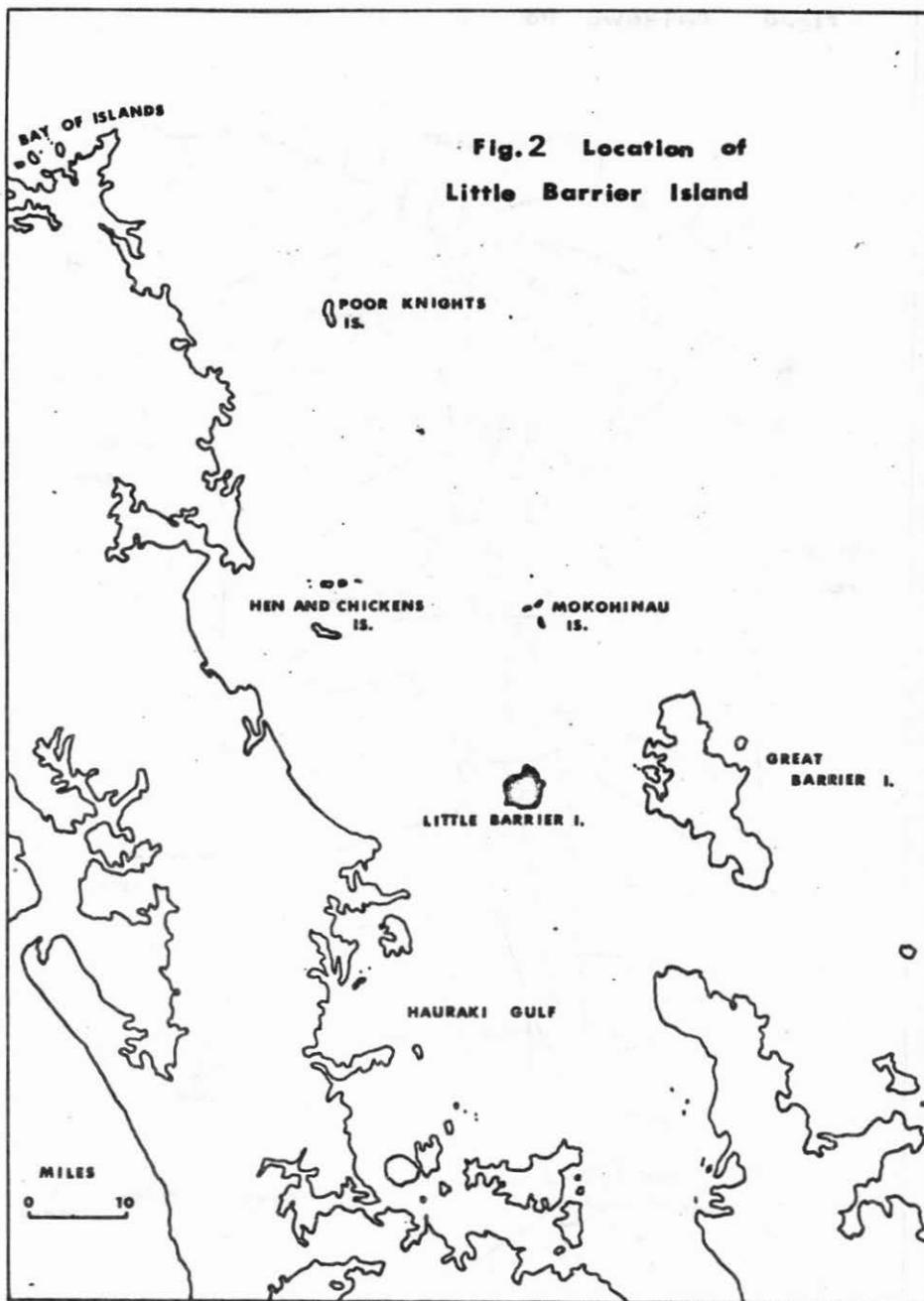
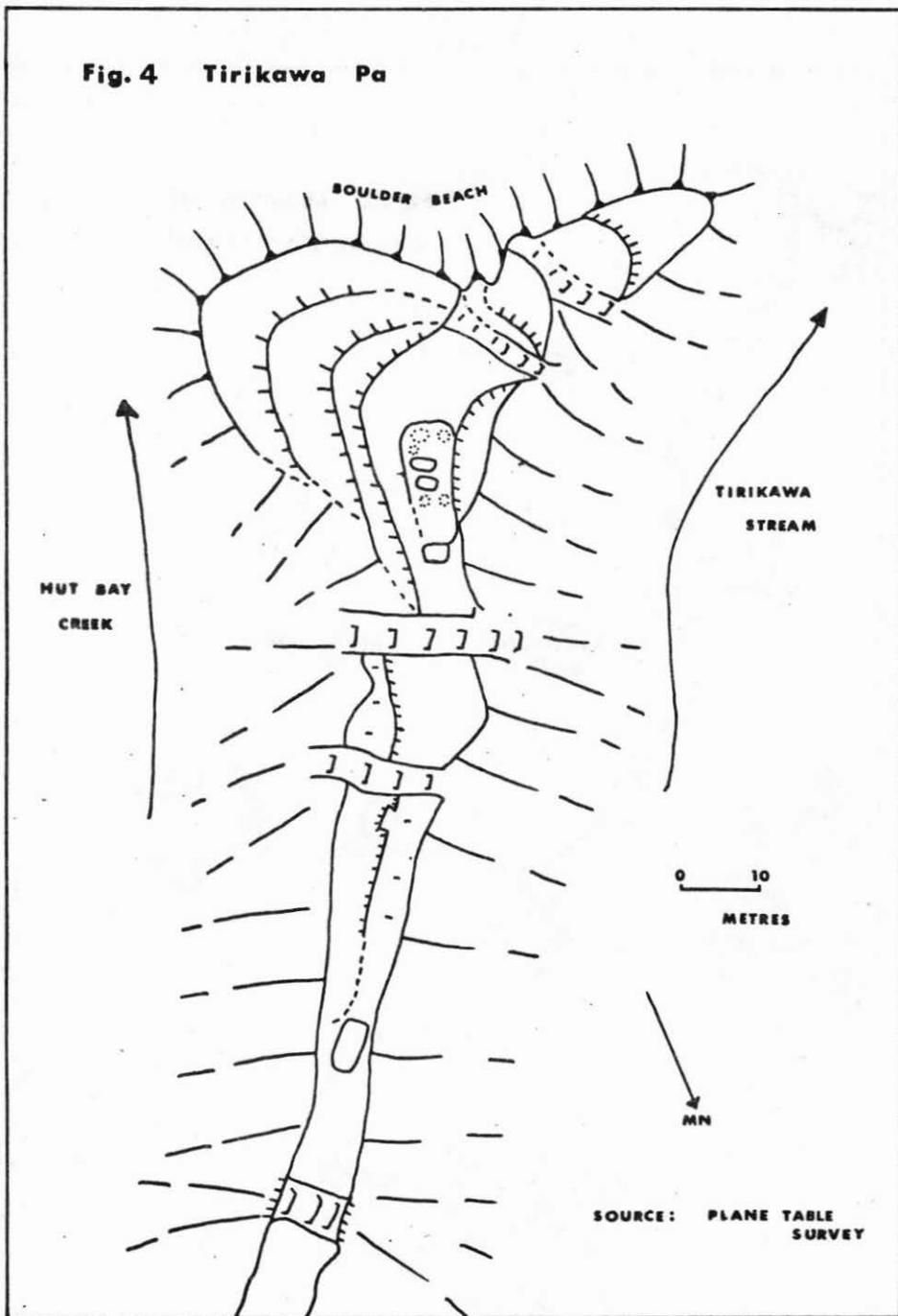


Fig. 4 Tirikawa Pa



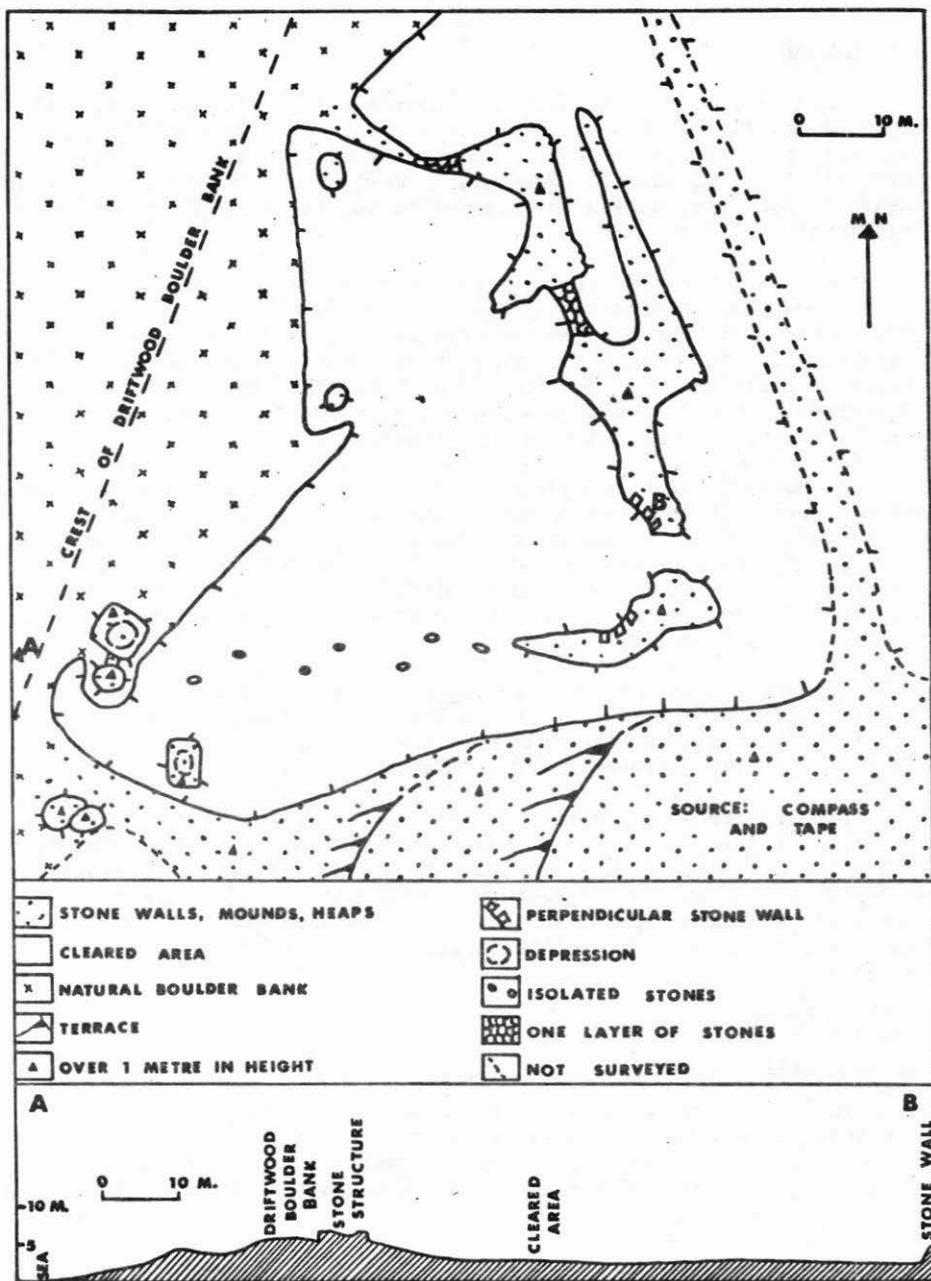


Figure 5. Stoneworks

BACKGROUND

Little Barrier is a circular volcanic island with an average width of four miles, rising to a height of 2,370 feet. Many of the steep coastal cliffs extend inwards as flat ridges, and these have been used extensively as pa sites. However, as most of the island is rugged and heavily dissected, access to these sites and the island's interior is difficult.

Aerial photographs clearly show those areas which have been disturbed by man but, unfortunately, the kauri milling operations of the 1890's must have changed the appearance of the ridges considerably. Consequently, this makes the studying of aerial photographs a limited means of locating Maori settlements or modifications of the natural landscape. The degree of whaling activity on Little Barrier is not known. Today the island is a bird sanctuary.

Te Maraeroa is the major flat area on the island, covering an area of 66 acres; it has been formed by the sea deposition of boulders and stream alluvium. The coastline consists of boulder banks which provide a means of limited access round most of the island at low tide, and a strong 'dumper' wave makes landing difficult. Owing to the presence of these boulder beaches, there is an absence of bivalve shellfish such as the pipi and cockle.

Information gathered so far suggests that there was a greater concentration of pa sites on the northern to southwestern sector of the island. This distribution suggests that ecological and/or trading factors may have influenced the settlement pattern.

Little Barrier's location in relation to the mainland suggests a suitable stopping point for coastal movements (see Fig. 2). Traditions state that the island was occupied before the arrival of the Ngapuhi who occupied Little Barrier or Hauturu and many of the off-shore islands. The Ngati Whatua's reputed subjection of the inhabitants finally led to their claim for ownership of the island (Hamilton 1961: 19, 20).

FIELD REMAINS

Pa and fortifications

Two coastal ridge pa were included in our recording of field remains: a detailed survey was made of Tirikawa Pa, and this was complemented by a less comprehensive investigation of Parihakoako Pa, which was the larger of the two. These pa were reasonably close to the

the flat area of Te Marearoa (see Fig. 3), and shared many similar natural and structural features, being basically of the East Coast type (Groube 1969). That is, they demonstrate a small degree of modification of the landscape, as natural features were used to advantage: this is evident in such features as the irregularity of terraces and the cross-cutting rather than encircling nature of ditches. Access from the boulder beach to these pa was limited by the shore cliff-line, although a steep approach was possible by means of the stream flat and lateral slopes. Streams were found on either side of both pa. The pa were also characterized by wide, deep ditches and by extremely large pits: for example, a pit on Parihakoakoa Pa was 12 by 8 metres and 1 metre deep; however, these were not numerous. The most notable features of this type of pa can be seen on the survey plan of Tirikawa (see Fig. 4).

An unusual feature present on Tirikawa and Parihakoakoa was the remains of banks and occasional bays on the highest point of the ridge. These were limited to the most inland sections of the pa, and took the form of a continuous bank with several shorter banks branching off at right angles. On Tirikawa, as Fig. 4 illustrates, this feature was located in the last two sectors, the former being eastern and the latter western in location. The banks were approximately 50 cm. to one metre in height. Their function could tentatively be assigned to some form of fortification device (Groube 1969).

Present only on Parihakoakoa Pa was a prominent raised area which overlooked the beach below, and the remains of a surface drainage system. This comprised a central drain with a few subsidiary drains flowing down towards a V shaped channel in the cliff. The lack of rills suggests that this was not totally a natural phenomenon, although the possibility of its formation after the abandonment of the pa cannot be discounted. Determining this feature as an 'antique' natural phenomenon, a man-made drain or a combination of both is suspect until its extent has been carefully mapped. This would entail the removal of a considerable amount of leaf litter. The drain was present on a much smaller scale in the second sector of the pa, here draining into the first ditch, but beyond this area it was not a distinguishable feature. However, it is probable that this phenomenon prevented lateral erosion and pugging of the ridge. The ditches on Parihakoakoa, unlike Tirikawa, had inner banks.

THE SUMMIT TRACK

Pit and ditch associations were numerous on the Main Track to the summit, and are reported to be also present on the Thumb Track. In most cases these consisted of a ditch which cut across the ridge, and a number of pits located further up the ridge. The ditches were

approximately 1 metre deep, but their length varied with the extent of the ridge. In keeping with the pits seen on the pa, these pits were of considerable size (generally averaged 4 by 2-3 m.); however, they appeared to be more heavily concentrated than those on the pa. One cluster, for example, consisted of eight pits. The pits were rectangular, with an average depth of 1 metre (litter level). One pit located in a cluster halfway up the track appeared always to be full of murky water. Although the pits tended to be in clusters, their overall arrangement on the ridge within these clusters was haphazard; this may be due to the winding nature of the ridge top.

STONE STRUCTURES ON TE MARAEROA (THE FLAT)

Patterns in the natural boulder bank appeared to take the form of enclosed rectangular depressions which were apparently caused by heavy wave and current action. Beyond the present driftwood line there is evidence of similar formations in the past, before the sea graduated to its present position. These formations were found behind the South Landing and the Waipawa Stream end of the West Landing.

Dr McLean identified these as beach cusps. "A single beach cusp can be identified as 'one of a series of low mounds of beach material separated by crescent-shaped troughs spaced at more or less regular intervals along the beach face' (C.E.R.C. 1966: A-3). This relative regularity of intercusp spacing is a feature of cusp development and is a natural phenomenon. Where sites of cusps occur vertically across the beach face, the dimensions and 'wave-length' of the upper sets are usually greater than the lower. With progradation (i.e., the long-term seaward shift of the active beach zone) cusps may become stranded and left as relics, well above and/or landward of the present active beach." (McLean 1969: 1).

The stone arrangement seen in Plate 1 could be a culturally modified cusp. "It is quite likely that the central stones (as these are the small ones and occur in a natural depression) could be removed and placed on the walls (horns and crest). Soil development would be more rapid in the 'bay' than either the horns or crest." (McLean 1969: 2).

It is possible that the Maori may have utilized these natural formations in the making of his own 'rectangular enclosures'; by clearing the centres of the depressions of surface stones and in this way heightening and strengthening the walls. In most of these depressions there was 2-5 cm. of soil.

A test pit was sunk into the edge of one of these beach cusps and evidence of an oven was found. However, this was also one of the few

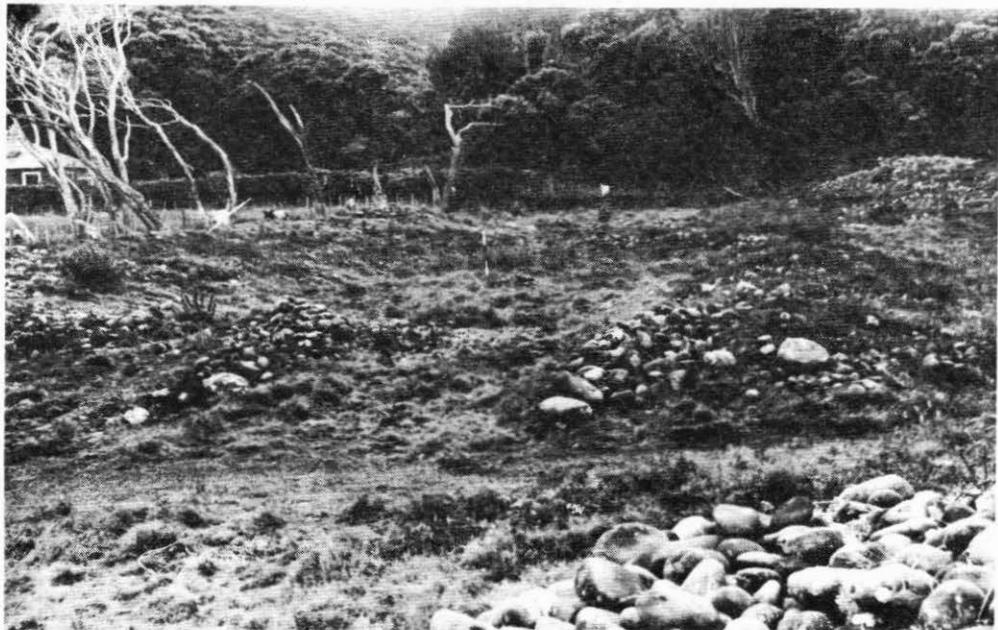
areas where surface midden was visible. In the upper levels of the test pit there was mainly shell and a few intermittent hangi stones. Species present were: *Haliotis iris* (paua); *Notoacmea parviconoidea* (limpet); *Cookia sulcata*, *Lunella smaragda* (catseye), *Melagraphia aethiops*, *Nerita melanotragus* (top shells); *Amphidesma australe* (pipi). Only the pipi is foreign to Little Barrier. The shell then disappeared to be replaced by fishbone and tightly packed hangi stones. The layers were very black and charcoal was distributed throughout. Below this was the peat level.

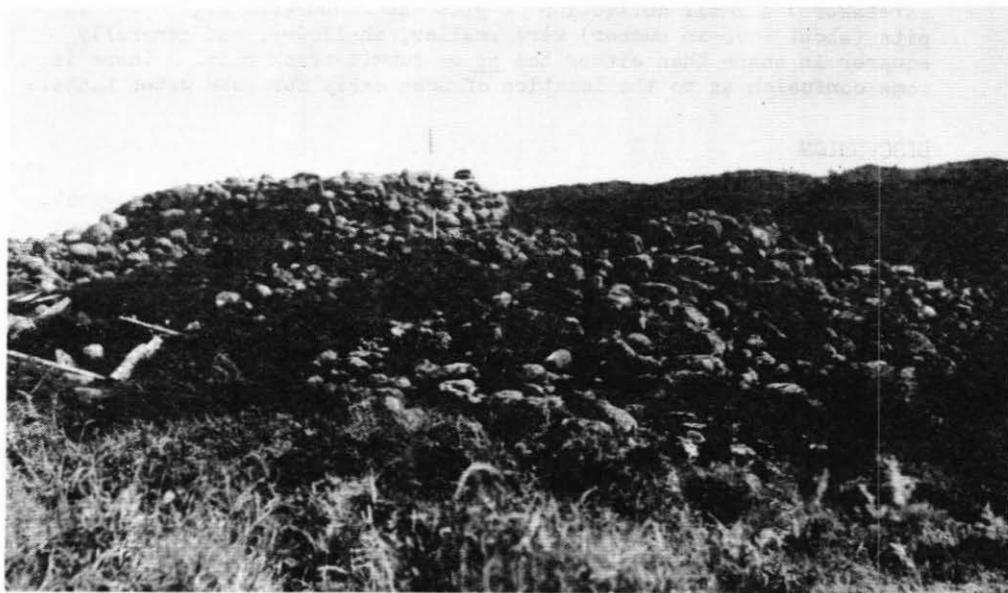
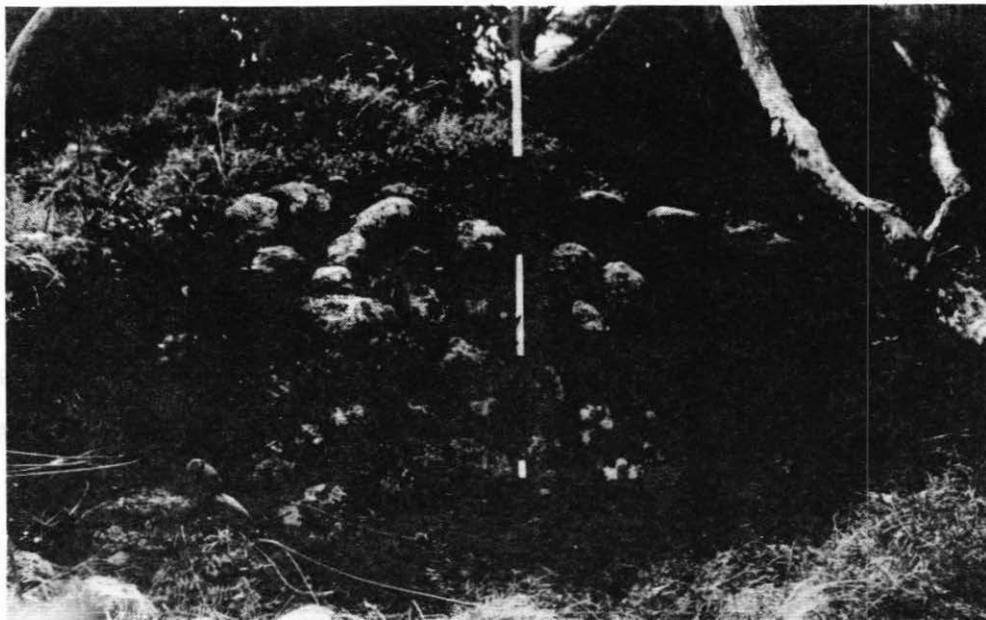
These beach cusps gradually diminished toward the traditional burial ground (Ngapuamataehu) where they appeared to be replaced by irregular slumped walls and mounds (see Plate 2). This area is located immediately behind Te Titoki Point and is now covered by pohutukawas. It is interesting to note that this is the only area of pohutukawa forest on Te Maraeroa. The limited distribution and abrupt boundaries led Hamilton to suggest that the other areas had been cleared by the Maoris (Hamilton 1961: 103).

The burial area led by means of three stone terraces to a large enclosed area of irregular shape (see Fig. 5). The walls of the enclosures were in most cases heaped, but two stone faces were well preserved (see Plate 3), while the central area was almost devoid of scattered stones. A test pit was sunk, revealing a rich black topsoil of approximately 12 cm. in depth, beneath which was peat.

The most prominent feature of this walled area was a large, almost rectangular stone structure built up from the natural driftwood boulder bank (see Plate 4). A depression of 60 cm. was found in the central area of the structure. Most of the West Landing could be viewed from this point, and also the Hen and Chicken region of the mainland. Dr R. A. Falla has suggested that this general area would be suitable for the lighting of night fires to attract petrels flying to their nests on the island each night. The construction of the above structure for such a purpose seems highly unlikely, but possibly cannot be discounted on present evidence. By means of a suggested ramp, this raised walled depression was connected to a less prominent mound, on the inland slope of the boulder bank. Inland from the boulder bank (see Plan 5) was a smaller rectangular stone structure which appeared to consist of four stone walls. A test pit was sunk into the northern end of this structure, showing a haphazard arrangement of stones as far as the peat level. In the black soil at the lowest level of these stones was found a piece of glass.

Beyond this surveyed area of the West Landing there were further beach cusps, although on a smaller scale than those of the South Landing.





Again, the stones formed heaped rows rather than perpendicular walls. Small mounds and a few suggested stone platforms built out from the driftwood boulder bank were also found here. The flat alluvial area inland from the boulder banks and associated stone walls, appears to be devoid of any apparent field remains. A dark brown silty, occasionally stony clay loam appears to be the general soil and there is no phenomena within the soil which suggest any man-made modification.

MISCELLANEOUS FEATURES

Twelve metres from the mouth of the Waipawa Stream was a cut (3.50 metres in width) in the natural bank. It is reported that this was used for canoe haulage both to and from the beach (Boscawen 1895: 95).

On the slope opposite Parihakoakoa Pa and above the Waipawa Stream were a number of small terraces, below which on the stream flat, was a small earth mound. A small test pit was sunk here and indicated that the mound may have been formed as a result of earth being heaped into a fire scoop. Other than this, no structural reason for the mound was found. Beneath the turf line was a light brown soil with very small stones. At a depth of 38 cm. there was a charcoal lens in which a piece of grey obsidian was found; this lens was 10 cm. at its deepest point, and under this was a dark brown silty loam.

On top of the Blair knoll (burial place of one of the island's caretakers) a small collection of pits was found (see Fig. 3). These pits (about five in number) were smaller, shallower, and generally squarer in shape than either the pa or summit track pits. There is some confusion as to the location of some early European water tanks.

DISCUSSION

The size of the pa we investigated and the number of pa suggests some period(s) of concentrated effort in their construction, but one cannot state whether the settlement was continuous, seasonal, or of a sporadic nature. The favourable climatic conditions (with absence of frost) and the size and frequency of pits indicate the possibility of successful agriculture on this island. By 1893, however, there were only 24 natives on the island and cultivation was limited to the flat area of Te Maraeroa (Boscawen 1895: 94). As stated above, it would be difficult to determine the extent to which the inhabitants used the ridges and valleys for agriculture and settlement purposes. The two pa seen showed little evidence of long continued occupation; stratified layers containing midden or other foreign matter were not present in any of the exposed faces of the ditches and slopes. Little midden could be located on the pa; this absence could be due to the deep forest litter and the acid action induced by it.

In addition to Tirikawa and Parihakoakoa Pa, Boscawen notes the presence of two other pa on the west coast; they are Haowhemua, which seems to conform to the two we investigated, and Te Hue, which does not. He writes, "At Te Hue deep trenches on the three sides, the fourth a cliff impossible to climb and the sea beneath." (Boscawen 1895: 95). Stone walls or stone-faced terraces and banks may have been present on some of these pa. Boscawen mentions that "the walls are still standing made from large boulders from the beach" in relation to Parihakoakoa Pa (Boscawen 1895: 95). However, these were not observed by us.

Stoneworks have been recorded on Taranga (Hen Island), (Wilson 1955: 53), and the Poor Knights (Leahy and Nicholls 1964: 102). The stone heaps, rows and free standing walls reported from the Poor Knights, and the stone heaps, piles and platforms from Taranga appear to correspond to the stone structures on Little Barrier. However, the stone retaining walls and stone faced terraces of these two islands were not evident on Little Barrier. The stone rows arranged as spokes of a wheel on Taranga were also absent. Once again, it is possible that stone faced terraces and slopes may have been covered by forest litter and loose soil.

CONCLUSION

As the stone structures have unfortunately been disturbed by vegetation and possibly later visitors to the island, reconstruction will be difficult. However, as Little Barrier has well defined geographic boundaries, it may prove to be suitable for an 'ecosystem' type approach in the study of the Classic Maori.

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