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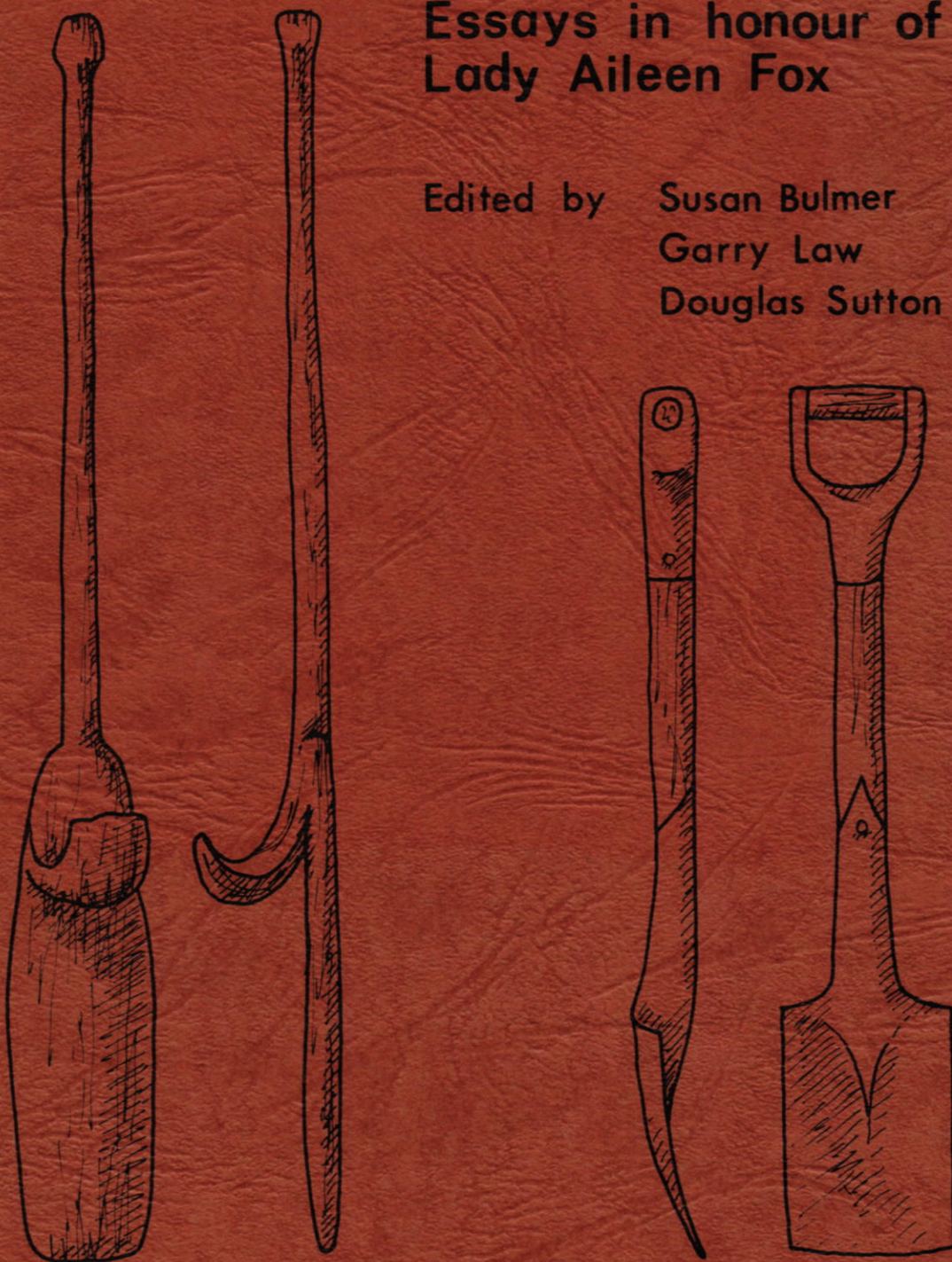
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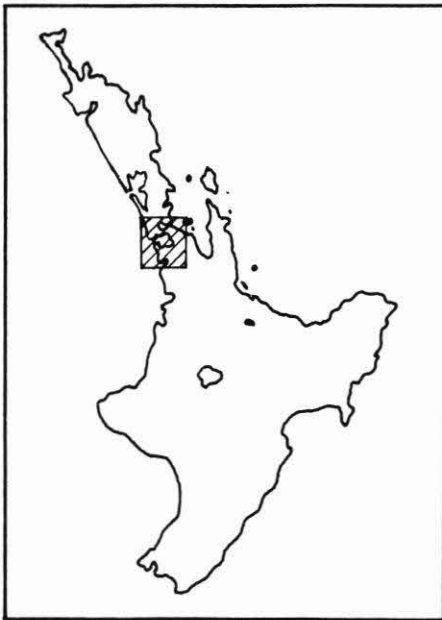
A LOT OF SPADEWORK TO BE DONE

Essays in honour of
Lady Aileen Fox

Edited by Susan Bulmer
Garry Law
Douglas Sutton



WAITETE PA. AN EARLY NINETEENTH CENTURY FISHING FORTIFICATION



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"The Ngati Whatua were at Waitete shark fishing and planting potatoes but at some time over the next two weeks the pa was attacked and burned" (Hamlin 1830-6, 8/1/1835: 13).

"As we passed up towards Waiuku we saw the pa of which so much to do had been made...it looked more like a place where a solitary canoe might stop occasionally than a place worthy of the name of a pa" (Stack 1830-6:21/1/1835).

And in the following year the paa was rebuilt and enlarged, and the strength of the defences increased (Stack 1830-6: 22/5/1836).

Although Stack may not have been impressed with the fortifications, the Maori owners were sufficiently determined to return the same year

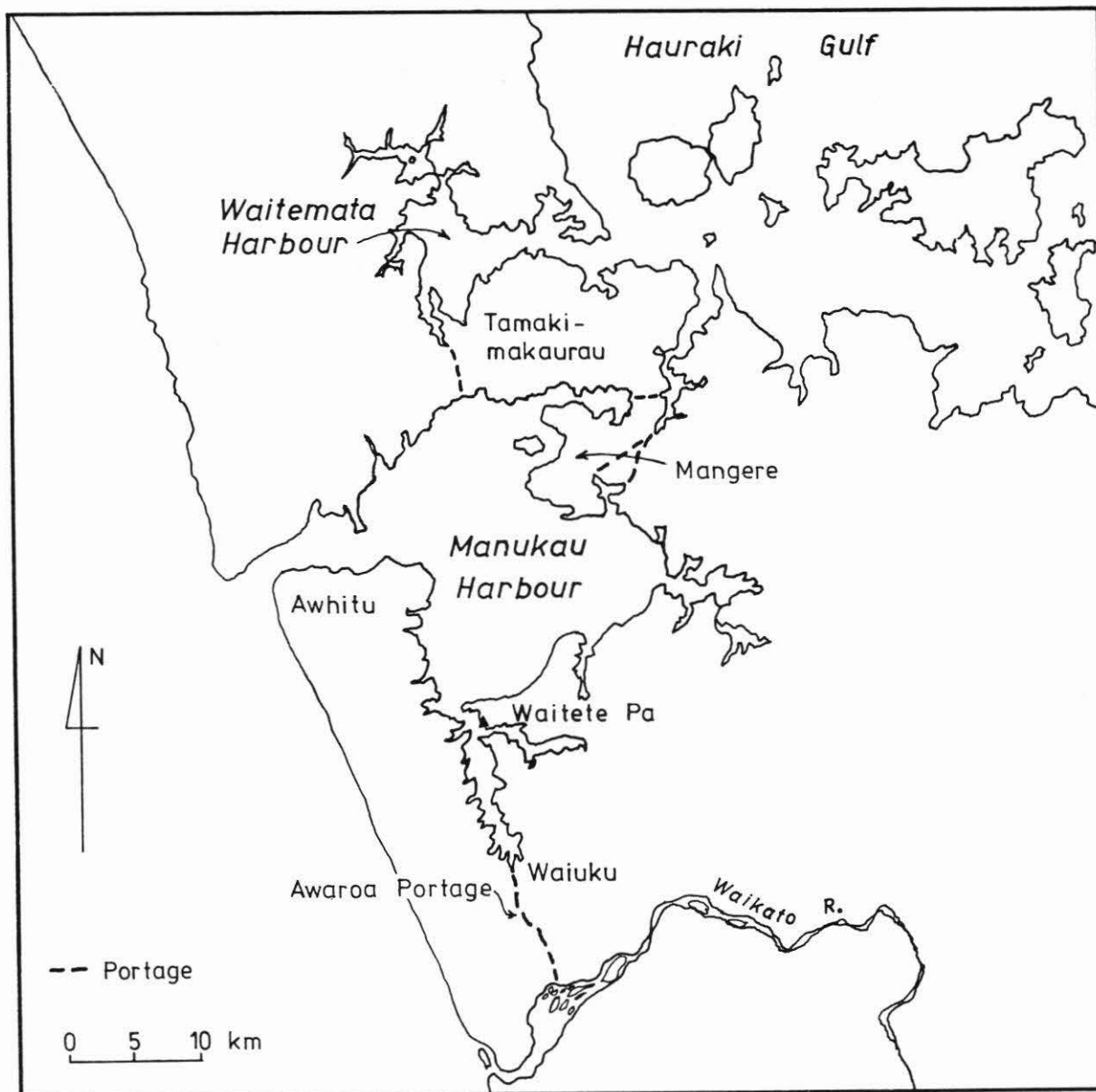


Fig.1 Location of Waitete Paa, N46-7/14.

to rebuild it, even increasing their efforts to make its defences effective. Indeed, comparison with other headland paa that have been studied archaeologically so far, a subject to which I will return later in this paper, shows that Waitete was not at all the unworthy structure reported by Stack.

Waitete paa was a fortification of the people who were in possession of the Tamaki isthmus from about the middle of the 18th century on, the group that is now referred to as the Ngati Whatua. In order to understand its function it is necessary to refer briefly to its historical context. In 1835 the Ngati Whatua returned to occupy the Auckland area, having been driven into exile in 1821 by the musket raids of the Nga Puhi from the north. The settlement pattern characteristic of the late 18th and early 19th century has been described by Sullivan (1979a) as having permanent central settlements with specialised seasonal settlements in various places some distance away, on the Manukau and Waitemata harbours and in the Hauraki Gulf.

Waitete paa thus fits into the known wider settlement pattern of the Auckland region during early historic times. It was a seasonal settlement, occupied during shark fishing on the Manukau harbour. Potatoes were planted in the spring, presumably to be consumed on the spot by the fishing party later in the summer. However, another important aspect of the location of this site is its conspicuous position on the main route along the Waiuku inlet to the Awaroa portage from Auckland to the Waikato. The earliest European trader in the region was at the lower Waikato (Urlich 1970:406) and the planting of potatoes on the periphery of Ngati Whatua territory could also have been to sell to the trader.

The conspicuous position of the paa on the Waiuku inlet, visible to any passer-by, shows that it was meant not so much to actually protect its occupants from treachery or stealth, but to display a measure of territoriality and control over the trade and communication route. Indeed this conspicuous position was to be the

downfall of the fortification, for although the Nga Puhi had by 1835 stopped their campaigns in the region, there were itinerant Nga Puhi warriors about. It was in fact these who were held responsible for the destruction of Waitete paa, perhaps with the concurrence of their Waikato hosts, although the Waikato were originally blamed.

At least one Maori traditional reference (Sullivan pers. comm, 1978) points to the use of the Waitete area for fishing in earlier times, but no reference has yet come to light of there having been a paa there before 1835. Neither is there reference to more recent use, although there is archaeological evidence for at least limited use following the abandonment of the fortification. By 1852 the land on which the paa stood was sold by the Maori owners to the Crown as part of the Kahaware Block, and the Maori owners apparently still normally lived elsewhere, although there were contemporary settlements across the inlet on the Awhitu peninsula (Reid 1979).

The archaeological problems presented by this site are to clarify its structure and verify its function as a specialised fortification built particularly for seasonal use. The investigation reported in this paper was too restricted to do this, but it adds substantially to the knowledge of this previously little known kind of fortification. The understanding gained from the investigation reported here will contribute to the conservation and management of this and other similar sites, even if further archaeological investigation is not possible in the foreseeable future.

The Environmental Setting

Clarke (this volume) discusses in detail the geographical features of the Manukau lowlands, and his findings are of direct relevance to this study, but need not be repeated in detail here. It is important to recognise that in spite of relatively intensive archaeological survey, very little prehistoric habitation on the

Manukau lowlands has been recognised. This means that the lack of early occupation of Waitete paa is typical of the general low density of archaeological evidence in the area. Clarke interprets this as underuse as a buffer zone between major centres of population in Auckland and the Waikato.

However, three specific aspects of the context of the Waitete paa site need to be touched on briefly here: these are its position in respect to other settlement sites and the route down the Waiuku to the portage; the soils of the site for horticulture and the fishing resources of the Manukau harbour.

Figure 2 shows the location of Waitete paa and the other known archaeological sites of the Waiuku area. The site faces across the inlet, but is several kilometres from the paa sites of the Waiuku groups, although clearly visible to anyone travelling along the inlet. The fact that it is not visible from the Manukau harbour may be more a matter of avoiding winds off the harbour than concealment from view. The site has good deep water access for canoes and is close to the harbour resources.

The soils of Waitete paa are yellow-brown loams (Pohlen 1979), friable soils formed on sediments that would have been of adequate fertility for at least a few years' cultivation before requiring fallow. The main attraction of the site was not, however, horticultural, although this land was as good as any that was available along the south side of the Manukau harbour.

The Manukau harbour offered a wide range of fish and shellfish, but it is not apparent what in particular the occupants of Waitete paa were most interested in. The midden remains so far analysed from the site appear to be from meals consumed on the spot rather than the fish that were taken locally to be transported back to Auckland for the winter. The Waikato groups of later decades were particularly interested in shark fishing on the Manukau, and during

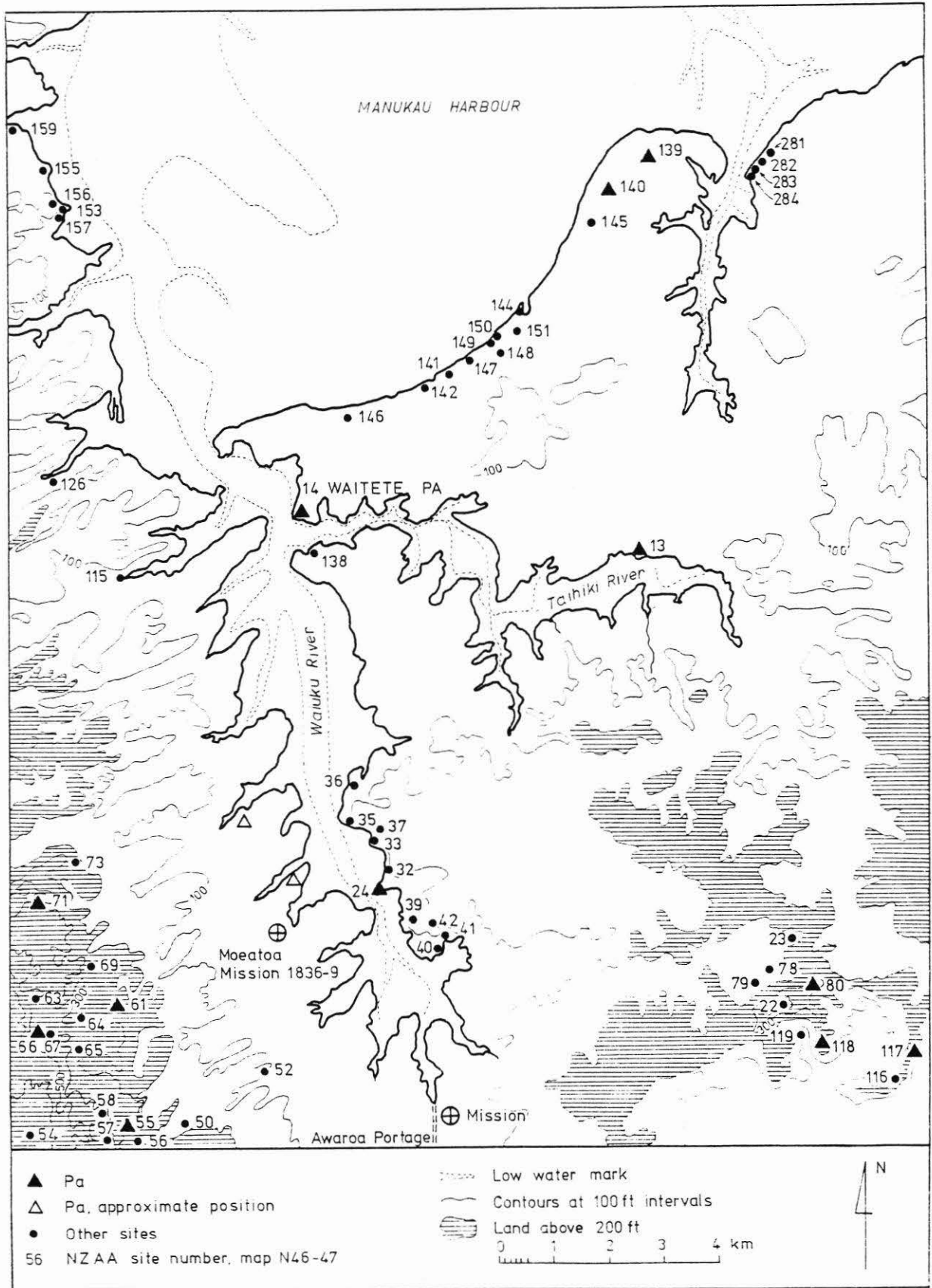


Fig.2 Sites in vicinity of Waitete Paa.

1850, for example, 6-800 additional people came to Awhitu during the summer to fish (Reid 1979) from the Waikato. Waikato groups camped on the northern shores of the Manukau during shark fishing season until about 1900 (J. Diamond, pers. comm. 1978), although the middens they left do not contain any direct evidence of this fishing. R. Jolly (pers. comm. 1983) observed shark being dried in camps along the South Manukau shore as recently as the 1920's.

The Surface Evidence of Waitete Paa

The standing earthworks of Waitete paa give the impression that it is a simple single ditch-and-bank headland fortification. Initial site recording interpreted the existing ditch and bank as the defence of the final 1836 paa (see Fig.3). However, later field inspection showed that there had been two ditches in the last paa, the outer (northern) defence having been filled at sometime in the past (according to local oral history, by the farmer).

With careful inspection it is also apparent that there is a third ditch filled in between the two more obvious ones, and that an irregularity in the ground to the south of the now standing ditch-and-bank could be another line of defence, either a small ditch or a scarp. Thus I assume that the standing ditch and bank dates to the final 1836 construction as its inner defence, and that the northernmost now filled in ditch would relate to it. The description was of the paa being enlarged and its defences strengthened, so the other two lines can plausibly be attributed to the earlier 1835 construction. The earlier paa would thus have been smaller and either a double ditch-and-bank defence system or an outer ditch-and-bank with an inner scarped and presumably palisaded area (see Figure 3).

A further line of defences was accidentally discovered during the observation of the grading of the road; this was a double row of palisading some 54 m further to the north of the final outer ditch-and-bank. This feature is described further below.

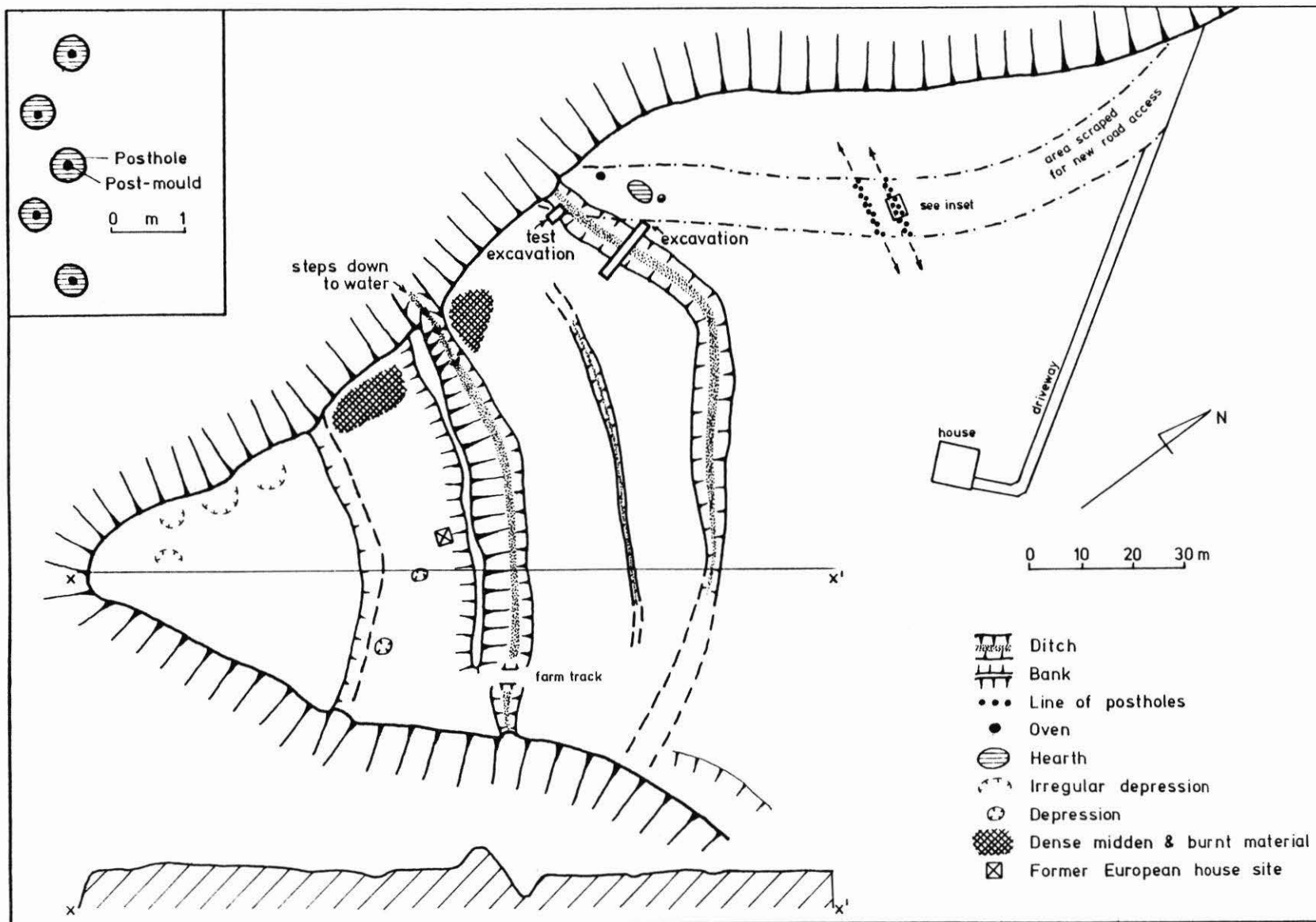


Fig.3 Plan of Waitete Paa, N46-7/14.

The remaining ditch-and-bank defence, which is the inner defence of the 1836 paa as interpreted here, measures about 8 m across. The ditch was cut into a sandstone substratum, with its base about 3 m below the present ground level. The bank now stands about 2 m above the ground level. This inner ditch leads now to the deepwater access on a sandstone shelf on the western side of the site. This boat access is now used by the Waiiau Pa Boat Club.

The character of the outer ditch-and-bank of the 1836 paa has been obscured by its levelling and infilling. However, it appears the ditch did not lead down to the water level on the western side, as did the inner ditch. On the eastern end, it appears to lead to a small sandy cove, which would have provided good shelter for canoes. The 1835 paa defences are much less apparent on the ground surface, primarily because they have been so thoroughly filled in. However, their investigation would be well warranted in future.

The total fortification covers nearly 2 ha (see Table 1), being about 180 m long from the headland to the outer palisading, and about 100 m across the centre of the site. The earlier paa may have covered only about .8 ha (about 110 m long and 70 m across the middle, enclosed by the two lines of earlier defences). The earthworks of the later fortification enclosed a slightly larger area (about 130 m long and 85 m across the middle). It is a matter of conjecture whether the outer palisading related to one or other of the earthwork systems, or to both. The double line of palisading seemed to be a single system and was not apparently rebuilt, but logically would relate to the later larger and stronger fortification. There were no signs of another line of palisading in between the one discovered and the outermost ditch-and-bank.

Looking at the two paa in terms of usable space within the defences, the 1835 paa would have had about 6,500 m² within the defences, about 1500 m² in the inner portion and about 5,000 m² between the inner and outer defences. The 1836 paa would have had

more usable space inside the earthworks; about 4,250 m² within the inner ditch-and-bank and about 3,000 m² between the two ditches-and-banks. There is also about 6,500 m² of additional area (in addition to the presumed 1836 earthwork defences) enclosed by the lines of palisades to the north. It is also notable that the two ditches-and-banks presumed to be related to 1836 paa are both wider than the earlier one. It would be of interest to investigate the earlier defences to see if they had banks at all and whether there was associated palisading.

Shell midden is visible between the inner and outer defences of the 1835 paa, and is also mixed in with the soil that forms the now standing bank of the 1836 inner ditch-and-bank. As well, it is in the soil underneath the bank. This indicates that the area enclosed by the earlier defences was used for habitation. There is midden and charcoal-rich soil all along the northern side of the paa, as far as the tip of the headland to the south. These deposits may cover much of the paa, although not now visible due to the depth of soil and grass cover. There is little other surface evidence of the presence of features within the defences, although some vague depressions near the southern end of the site and to the eastern end of the inner defences could be pits or house sites and warrant archaeological excavation. However, according to local residents, the ground within the site to the south of the standing ditch-and-bank was dug over to a depth of about 45 cm by a man who lived in a small house in the centre of the site, just to the south of the bank.

If the northern palisading may have enclosed the cultivations relating to the paa, while the paa itself protected the inhabitants, then this is an impressive piece of construction. If it ran from shore to shore, the line of palisading would have had to be about 175 m long. This reflects an impressive amount of available timber and a great deal of effort to protect potato gardens.

TABLE 1: Area of Waitete paa (N46-7/14)

	<u>1835</u>	<u>1836</u>
Inside inner ditch and bank	1,500 m ²	4,250 m ²
Between inner and outer ditches and banks	5,000 m ²	3,000 m ²
Between palisade row and outer ditch and bank	-	6,500 m ²
Total usable space	6,500 m ²	14,000 m ²
Total area covered by site	0.8 ha	2.0 ha

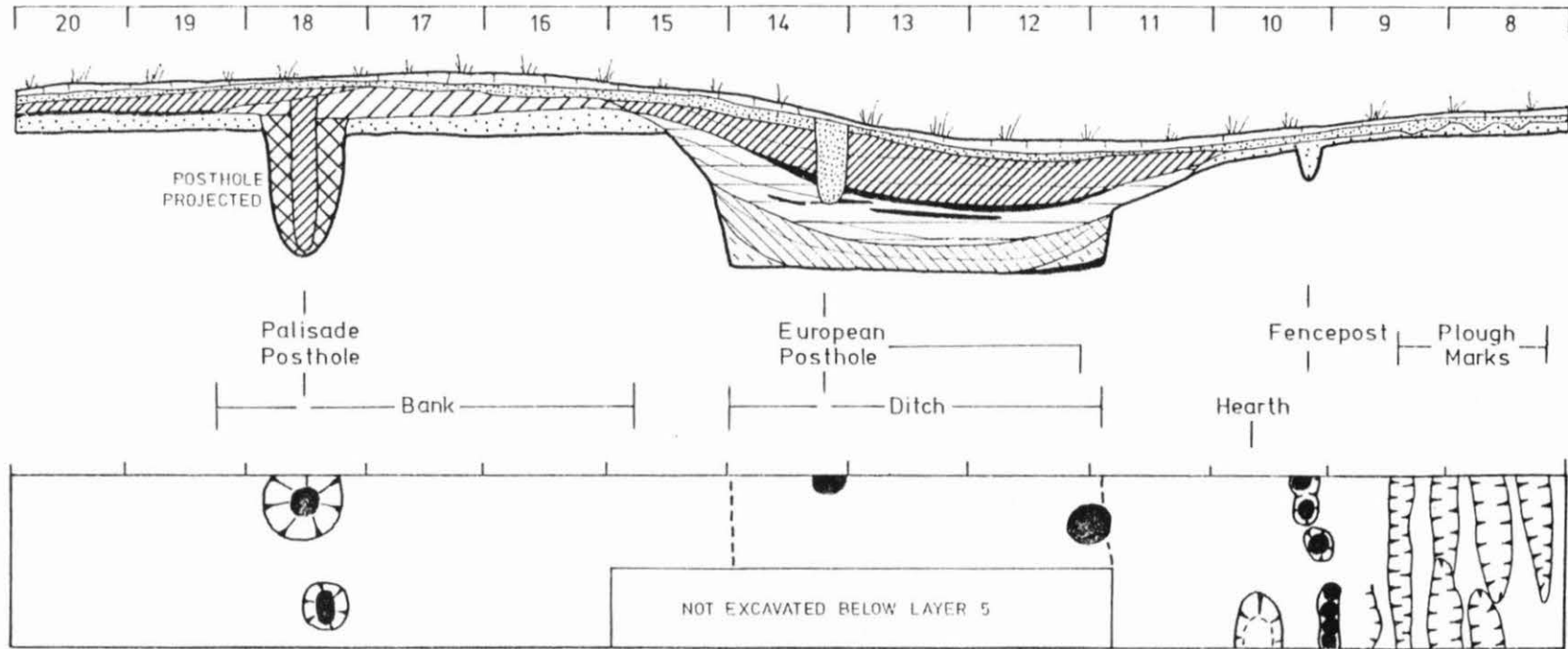
Archaeological Excavations 1978 on a Boat Ramp and Access Road

The rescue excavations at Waitete paa were done for the New Zealand Historic Places Trust, under the direction of the author, on behalf of the Waiiau Pa Boating Club. The Boating Club had purchased the paa and adjacent pasture land in order to build a new boat ramp and provide parking space for club members. As it was planned that the ramp would run up the northern side of the paa, cutting across the outer ditch-and-bank, this particular area was investigated (see Fig.3). The portion of the site containing the standing ditch-and-bank was sold to the Raglan County Council to be set aside as an historic reserve. This had been assumed to be the total paa site in the negotiations.

Between 17 and 27 May 1978 7 persons participated in the excavations for varying periods. A 1.5 m wide and 13 m long trench was excavated across the ditch-and-bank, positioned to include several metres of ground on both inside and outside of the visible ditch depression. Although only a shallow depression was visible on the surface, it could be seen from the raised surface of the ground further east that there had been a bank inside the ditch. It was found through the archaeological excavations that the ditch was about 1 m further south than the depression on the ground indicated.

Due to restricted finance, the total trench laid out could not be excavated down to subsoil. However, the western half was completely excavated, and the eastern half taken down to sub-stratum or to other layers as was deemed desirable to solve stratigraphic problems and to explore further evidence of palisading.








The layers and structural evidence from the excavations will be discussed in terms of four areas within the trench: 1. Outside the ditch; 2. The ditch; 3. The bank and palisades; and 4. Inside the bank. These fit into a general stratigraphic sequence, which will be summarised below. The archaeological deposits consisted



SECTION LAYERS - OUTSIDE DITCH

-  Turf
-  Very dark brown soil
-  Midden & bank material redeposited
-  Charcoal lens
-  Bank
-  Posthole fill
-  Original very dark brown topsoil

SECTION LAYERS - INSIDE DITCH

-  1
-  2
-  3
-  5 & 6
-  Charcoal lens
-  7 & 8
-  9

PLAN FEATURES





-  Post-mould
-  Posthole
-  Plough marks
-  Base of ditch



Fig.4 Plan and Section of Excavated Ditch and Bank.

of a series of dark brown (7.5 YR 2/2) soil horizons formed on a brown sandy substratum (7.5 YR 5/6 to 4/4).

A further brief investigation was done later in 1978 when the boat ramp and access road were built for the Boating Club. A test trench was done on the western end of the ditch, 4 m from the edge of the cliff, to establish the character of the extremity of the defence. On the same occasion the opportunity was taken, during the scraping and grading of the access road and the cutting of the boat ramp, to confirm that the ditch continued to the west in the same form as that established in the archaeological excavations, and to investigate whether other archaeological features were present to the north of the defensive ditch. The scraped road provided a 10 m wide strip from the ditch to the main roadway to the north (Fig.3). This removal of the soil to the substratum beneath made it possible to record archaeological features present. Several oven and hearth features were present close to the northern fence of the ditch-and-bank and a further line of palisading was found over 50 m to the north.

(1) Outside the ditch

The stratigraphy to the north of the ditch depression (see Figure 4) consisted of an earlier buried soil horizon with structural features in its surface (Layer 3), a second (more recent) soil horizon with plough marks in its surface (Layer 2), and the modern grass turf topsoil (Layer 1). Layer 4 was the substratum of lighter coloured sandy consolidated sedimentaries, with disturbances from the features dug into the surfaces of Layers 2 and 3, where they were deep enough to penetrate to the subsoil.

Two different kinds of structural features, in the surface of Layer 3, can be associated with the defensive ditch to the south. These are a pigment-cooking fireplace and a fence line.

Pigment-cooking fireplace. Red lumps of clay lying on charcoal were found in Square 100 in the surface of Layer 3, in an oval pit

30 cm deep and over 40 cm in diameter (part of this feature which remained in the baulk was not excavated). This has been interpreted as a fireplace for making red ochre by baking kokowai earth (Williams 1975:131). This fireplace is just inside the outer fenceline of this part of the defences of the site, and stratigraphically contemporary with the fence. It can be interpreted as evidence of the preparation of paint for the carved palisades of the paa (Best 1927:133).

The fence. This was a series of seven postholes running across Squares 9B-C and 10B-C, about 1.6 m from the edge of the original ditch and running parallel to it (Fig.4) and no doubt continuing to both east and west of the excavated trench of the archaeological investigation. The postholes were from 25 to 27 cm in diameter and were from 15 to 33 cm deep, if dug from the top of the present surface of Layer 3. There is evidence of erosion of the soil layer and its redeposition in the bottom of the neighbouring trench. This means it can be assumed that the present depth of Layer 3 is somewhat less than its former depth at the time the fence was built (Fig.5).

Therefore the fence postholes are likely to be truncated. The comparable soil layer to the south of the ditch, that which is 'trapped' under the bank, is 25 cm deep and 25 cm higher than the Layer 3 outside the ditch. This means that the postholes could have been at least 20 cm deeper than was apparent in the excavations. It is also likely that the tops of the postholes were truncated by ploughing. Although there was no evidence of plough marks in this part of the excavations, these would not necessarily have been recognised due to the deeper dark brown soil layers in this area---the plough marks were only clearly visible to the north where they penetrated into the lighter coloured substratum.

The reason for considering this issue in such detail is to enable an estimation of the height of this fence outside the ditch. If the depths of the postholes as excavated are taken to be their

original depths, and if an estimate of the above-ground post is 2 to 3 times the length of the below-ground portion, this fence would have been between 30 and 100 cm high. If a deeper former soil is assumed, the posts of the fence could have been between 70 and 240 cm high. While the presence of relatively low fences on Maori paa is well-known, where short fences acting to impede access within the fortification, it seems likely that this fence outside the ditch at Waitete paa could have been tall enough to prevent access.

The postholes of the fence were set closely together, the four eastern holes forming a continuous slot. They had pointed ends and were only slightly smaller than the holes into which they were set, unlike the large posts set in the bank to the south. The fence outside the ditch thus appears to be a relatively shorter but much more closely set barrier than the inner palisades, to be discussed further below in relation to the bank.

Plough marks. Five irregular but parallel grooves were found in the surface of Layer 2, running east-west across Squares 8B-C and 9 B-C (see Fig.3). They were from 1-15 cm in width and up to 8 cm deep, showing up as darker streaks in the lighter soil background of the layer. When the darker soil was excavated it was apparent that the grooves were V-shaped in cross-section, but were irregular in depth as well as plan. Because of this irregularity and their shape and distribution they are interpreted as grooves from an animal-drawn plough; although the present depth of soil is not sufficient to plausibly be a ploughed soil, the actual level from which the ploughing was done could have been the top of the present grass turf.

Cooking and fireplace evidence. An area in Squares 9B-C containing fragments of oven stones and charcoal and twigs was apparently an area of former earth oven cooking. The twigs and charcoal are part of the general layer of such material found during the excavations, rather than from a haangi. However, a further 4 m to the north a clearly defined fire area is present, with a small hearth. Another

haangi was found 6 m further west, toward the cliff (Fig.3). The first feature is an oval of dark ash and charcoal about 4 m in diameter 5 cm deep with a smaller lens of white ash about 2 m across in its western portion (see Fig.3). A small hearth was present just to the north of this feature, a lens of dark ash and charcoal about 30 cm in diameter and 4 cm thick. The haangi to the west was a circular lens of charcoal, oven stones, shell, and bone fragments about 12 cm deep and 60 cm in diameter. The haangi and hearth are not difficult to interpret, but the larger fire area does not have an obvious function. The white ash means that the fire burnt long and hot, and the explanation of this feature could be the burning of rubbish. However, it may be that this was a large bonfire lit to warm people camping out.

(2) The ditch.

The defensive ditch was cut into the sandy substratum to a depth of 1 m or more, with its outer (northern) edge 1.6 m south of the fenceline described above. Because the deepest silting in the bottom of the ditch does not include topsoil, it can be argued that the topsoil was cleared away from the edge of the ditch, even though the outer fence was set in the soil layer. The lower part of the ditch walls are nearly vertical, about 10° from vertical in angle toward the outside, and the outer wall of the ditch was at least 50 cm higher than its excavated edge, i.e. 1 m, if subsequent erosion is allowed for. The floor of the ditch was 3 m across and nearly level, with sharp angles at the junctions of floor and walls of the ditch. The inner wall of the ditch leading up to the bank may have been slightly higher, probably about 1.4 m high, perhaps taking advantage of a natural slight slope in the ground surface toward the north.

The fill in the ditch shows a typical period of natural erosion of the walls of the ditch, with silting deepest in the junctions between floor and walls (Layer 9). This was followed by a more

gradual formation of a deep soil horizon on the fill deposits in the ditch (Layers 7-8). Layers 5-6 are also silt layers formed by erosion into the ditch, but they have a series of thin lenses of charcoal and greasy soil. Layer 5 had some large oven stones and many rounded sandstone pebbles. These two layers probably result from the use of the ditch for disposal of cooking debris.

Layer 5 was topped by a thick layer of burnt vegetation, which was shortly buried by Layers 3-4. The latter included a jumble of topsoil and unconsolidated rubble and a length of barbed wire. Layer 3 was a hard brown well-consolidated soil with many lumps of sandstone. It appears to be the same material as that used in the bank to the south. Together this evidence is interpreted as the refilling of the ditch by the farmer, following a burn-off of scrub vegetation. Layer 3 contained little cultural material; small quantities of oven stone fragments, charcoal, shell and a few fragments of glass.

Layer 2 in the ditch area was a brownish black soil speckled with small lumps of bright yellowish brown sandstone (10 YR 7/6) and containing a few very small fragments of oven stone and shell, in secondary deposition. Two large postholes were in the top of Layer 2 extended down into Layer 5 and date from the later period following the in-filling of the ditch with the bank material. The turf, Layer 1, sealed these postholes and one contained a fencing staple. The posts were about 2 m apart in Squares 14B and 12B. They were both 25 cm in diameter and round in plan. One hole was about 70 cm deep and vertical-sided as if dug with a posthole borer. The second hole was less-clear in excavation, but was also vertical sided. Both were filled with grey lumpy soil that contained a few shell fragments. It would appear these were part of a relatively recent fence.

During the construction of the boat ramp and access road the character of the ditch to the west of the archaeological trench was

investigated to see if it continued horizontally. The ditch 4 m from the edge of the cliff and 8 m to the west of the northern end of the trench was still nearly vertical sided and flat bottomed. Although the end of the ditch near the cliff was eroded, it could be seen that the sandstone base of the ditch was not lower than 30 cm below the level of the floor of the ditch 4 m to the east. Therefore, the ditch ran horizontally to the edge of the cliff and did not slope down to the water's edge as the west end of the other ditch to the south did.

(3) The bank and palisades.

Evidence of a former bank south of and next to the ditch was excavated in Squares 15 to 19. This evidence was a layer of sandstone and clay material up to 40 cm thick, the remains of the base of the bank after the farmer flattened most of it. Two large palisade postholes were found in the southern (inner) edge of the bank.

The bank was at least 4 m across, from the edge of the ditch. Bank material is present at least as far south as the palisade posthole. There is also bank fill material a further two metres toward the south, although this is more likely to be eroded material off the bank, rather than part of its base. The bank fill included not only the sandy sediments that were dug from the neighbouring ditch, but also clay soil that was brought from elsewhere on the site, presumably to assist in the consolidation of the bank. The size of the bank can be reconstructed on the basis of the quantity of material derived from the digging of the ditch, plus an unspecified but substantial amount of clay added to it. This would mean that the bank was minimally 1-1.5 m high, and could have been higher. The standing bank to the south is about 2 m high, but is associated with a deeper ditch than the one excavated in the present investigation.

The layering of the bank section consists of: Layer 5 - the natural substratum of sandstone; Layer 4 - a buried soil underneath

the bank; Layer 3 - a well-consolidated mixture of sandy soil and clay and sandstone which formed a solid layer from Square 16 to 19; Layer 2 - a thin topsoil containing scattered midden material probably derived from a thick midden deposit in Squares 18-19; and Layer 1 - the grass turf topsoil.

The bank layer (Layer 3) is up to 40 cm thick in Squares 16-17, and tapers out to about 3 cm in Square 190. The material is the same as Layer 3 in the ditch fill. The inner edge of the bank is thought to be in Square 19 on three grounds: (1) Squares 20B-C contained very large lumps of sandstone from the ditch, but the layer was not consolidated and therefore could have derived from the destruction of the bank rather than its construction. (2) Layer 4, the buried soil horizon underneath the bank is a different darker brown colour in 19-20 than in 15-18, and the colour change occurs in Square 19. (3) There are charcoal and twigs on Layer 4 in Squares 19-20, but not in 15-18, suggesting this area was exposed immediately prior to the farmer filling in the ditch.

Two large postholes were found within the bank, 3 m south of the inner (southern) edge of the ditch and probably near the back of the bank. Although these holes were not found during the excavations until Layer 4 had been reached, it is apparent that they were dug from the top of Layer 3, because the cross-section of one of them was present in the western baulk. This had been obscured by the fact that the tops of the holes had been filled in with material similar to the bank fill, probably due to the removal of the posts and the collapse of the bank material around their tops. The lower fill of the postholes was similar to the soil of Layer 4, and they had centre cores of softer fill where the posts had been, with more consolidated packed post molds around them.

The palisade post (cross-sectioned in the face of Square 18B) shows the post was aligned slightly asymmetrically in its hole. It was dug from the top of Layer 3, having probably been set in place in

the soil beneath the bank before the bank was built, with bank material built up around the post after it was set in place.

The posthole in 18B was 1.5 m deep from the top of Layer 3 and slightly oval in cross-section. The posthole was 60 cm in diameter in the portion excavated and had distinct digging stick grooves in its walls. It may have been even deeper because the top of Layer 3 is well below the former top of the bank. However, the posthole from Layer 4 is dug virtually as deep as is humanly possible given its diameter. A tapered base to the posthole indicated that its full extent had been found.

The second palisade posthole, in Square 18C was only 0.5 m deep from the top of Layer 3, and was slightly smaller, only 40 cm in diameter. This may have been a lesser post in between main palisade posts. It was 45 cm away from the other post slightly north of it. If the heights of these posts are reconstructed on a 1:2 or 1:3 basis the palisades would be 3-4.5 m and 1.15 m tall respectively. Even if the lesser figures are accepted, such a line of palisades across this headland would have involved a very substantial amount of timber. Both the smaller and larger posts had been removed from their postholes presumably to be reused elsewhere again. This indicates that the final fortification was abandoned deliberately, and not burnt down as with the original structure.

(4) Inside the bank.

The stratification of soils in Squares 19 and 20 consists of: Layer 5, the natural sandstone substratum; Layer 4, the buried soil of greasy lighter gray colour similar to the buried soil under the bank; Layer 3, an irregular and unconsolidated deposit of bank fill which is interpreted as bank fill redeposited during the filling of the ditch; Layer 2, an 8-10 cm deep black soil with midden, including shells, cooking stone fragments, glass and china; and Layer 1, the turf topsoil.

There is a thick layer of charcoal and burnt twigs lying on the surface of Layer 4, equivalent to Layer 5 in the ditch, and thought to date from the clearance of scrub with fire immediately before the refilling of the ditch. Layer 4 is stratigraphically equivalent to the buried soil underneath the bank, but under the bank it does not have the charcoal and twig deposit. Therefore the latter is later in time than the building of the bank although lying on a soil that pre-dates the bank, in this part of the excavation, although not in the ditch where it lies on a soil that post-dates the ditch and bank. This is stratigraphically acceptable as long as it is assumed that Layer 4 soil was exposed during the use of the ditch and bank in the area inside (south) of the bank.

The midden in Layer 3, and in Layer 2 in the bank area and ditch in secondary deposition, is clearly historic and post-dates the construction and use of the ditch and bank. It may be associated with the charcoal lenses in the fill of the ditch which preceded the re-filling of the ditch by the farmer, as well as preceding the charcoal and twig layer. The fact that it is a refuse layer in Squares 19-20, that is, there are no distinct cooking fires or ovens in situ, indicates that cooking and fire areas must be reasonably nearby on the site. It must be argued however that Layer 3 in Squares 19-20 was deposited in that position after the scrub clearance and before the refilling of the ditch; although it need not have come from far away it very likely came to be there through the agency of the farmer that refilled the ditch.

(5) The outer palisade.

During the scraping and forming of the boat ramp and access road it was discovered that there was a double line of palisade postholes about 50 m and 54 m from the excavated ditch and bank, and about 120 m north of the standing ditch and bank (see Fig.3). These features were visible as the grader scraped the topsoil from the subsoil.

Postholes about 30-45 cm across were arranged in a zig-zag pattern, with about 30 cm gaps between each post (see Fig.3 inset) and with the palisade lines running approximately north-south. The tops of the postholes were filled with red burnt soft ashy earth with large lumps of ashy clay and the holes themselves were filled with large lumps of charcoal. The two that were excavated had some remnant chunks of burnt post butts. A second similar row of postholes was present 4 m to the north of the first row. Each zig-zag row spanned about 1-1.5 m in breadth. One of the postholes in the outer, northern row was completely excavated, and was found to be 60 cm deep and 45 cm across the top, with a 25 cm wide post in its centre. The tip of the post had not been completely burnt and was collected for identification.

The use of the grader for the discovery of this feature was frustrating in that each time the blade scraped the tops of the postholes clean they would almost immediately be erased by the wheels of the vehicle. However, it could be seen clearly that the lines of palisade postholes continued into the edge of the road to the west, presumably to the edge of the cliff. Thus it is apparent that this is a line of fortification related to the fortification of the rest of the headland, although there is no way to definitely associate it with either the 1835 or 1836 paa. The destruction of this palisade line by fire suggests it could have been destroyed in 1835 when the paa was burnt. The intense heat indicated by the red earth around the tops of the posts and the fact that all but the lower tips of the posts were burnt suggest a deliberate destruction of this feature. However, the second paa could have been burnt as well.

Summary

Waitete paa was a seasonal fishing paa established by the Ngati Whatua, the residents of the Auckland isthmus, for the purpose of asserting territoriality in the Waiuku region. It stood on the

main trade and communication route from north to south. The fortification was built in 1835, the same year that the Ngati Whatua returned to permanent residence in Auckland after exile during the Nga Puhi raids. The fortification covered an area of about 2 ha on a cliff edge overlooking the Waiuku inlet and it was divided into two areas. The outer area was a palisaded garden, with zig-zag double palisades that would have prevented effective musket fire.

The inner area of the paa was protected by double ditch-and-bank earthworks about 50 m apart, and the majority of the evidence of habitation (midden, pit and house sites) is within the inner ditch-and-bank, which is the larger of the two. The entrance to the paa was by water into the inner ditch. Persons who entered this way encountering a bank 5 m high. The outer ditch-and-bank would have obstructed attack through the gardens from the landward side. The excavated bank had a substantial line of palisade posts or a fighting stage set in its inner margin. This probably indicates a more traditional type of screen palisading intended to conceal defenders rather than protect them from muskets. The 50 m span between the outer palisading and the earthwork defences may have been too far for shooting from the outer defences to be effective against persons inside the inner defences, and the double zig-zag row of large palisades would have prevented shooting in from outside. An attack across the intervening land could be deterred by the concealed defenders, and the outer fence would have slowed their approach.

The stratigraphic sequence of the section through the outer ditch-and-bank is summarised in Table 2. It shows 8 stratigraphic periods or events (A to I) and a sequence of four soils (I-IV), together with a brief indication of the nature of the strata and the artefacts found within them. This shows three periods of human activity at this part of the site: the construction and use of the paa (Layer B); followed by the sporadic use of the site, presumably for seasonal camping (Layer C and D); and European farming activity

TABLE 2: Summary of Evidence from 1978 Excavation of Outer Ditch-and-Bank at Waitete Paa

STRATA	SOIL/LAYER/FEATURE	ARTEFACTS AND OTHER MATERIAL	PERIOD OF SITE USE
I	Modern turf topsoil (IV)	22 cartridges, jeans button, scattered midden fragments (shell)	EUROPEAN FARM (post 1852)
H	Digging of farm fence posts	staples, fencing wire	
G	Topsoil (III) formed on stump of bank and refilled ditch	Lumps of ochre, pebble, glass, shell, china, nails, fishbone, scoria pebble grinder for ochre, copper object	
F	Ditch refilled by farmer, by flattening bank and midden and scraping into ditch.		
E	Layer of charcoal and burnt vegetation from clearing the scrub on the farm	No artefacts	
D	Topsoil (II) formed on top of the silt layers in ditch	No artefacts	Discontinuity (1836-1852?)
C	Ditch fill: lenses of eroded topsoil redeposited in ditch by erosion, with interspersed lenses of charcoal from fires	Lumps of ochre, chert pebble, stone flake, oven stones	POST-PAA MAORI
B	Ditch and bank defence, made by digging the ditch into sub-soil and using resultant spoil and other clay for bank construction. Palisades dug into back of bank and fence and pigment fireplace outside ditch	Oven stone, pigment grindstone, lumps of ochre	PAA (1835-6)
A	Original soil layer (I) under bank	No artefacts. Small lumps of tree gum, moa crop stone	PRE-PAA

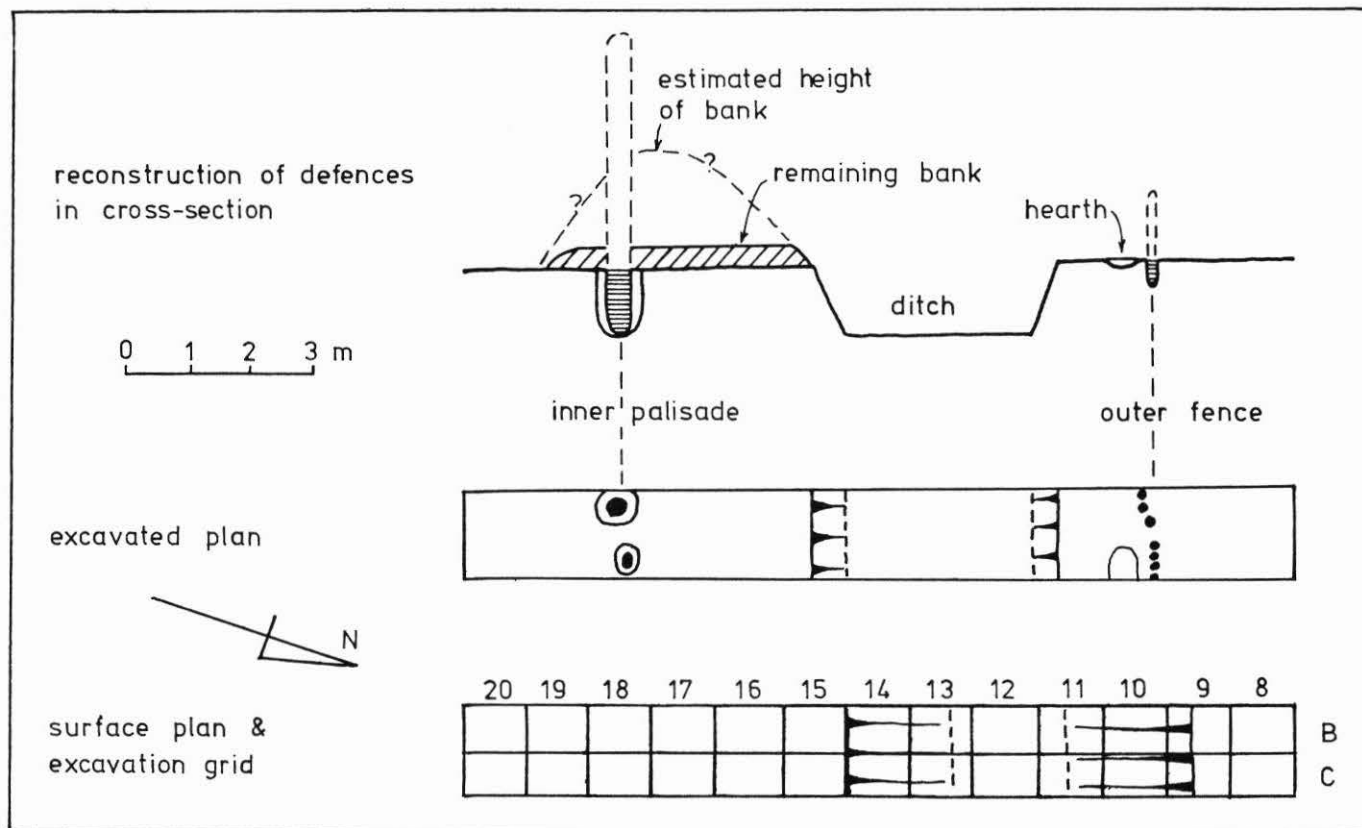


Fig.5 Reconstruction of defences of Waitete Paa

(Layers E through I). A certain amount of material relating to the Maori occupation of the site was present in the earth used to refill the ditch (Layer F) mixed with European artefacts. Most of the latter certainly derives from the European farming occupation of the site, but some may be from the Maori occupation.

The archaeological evidence of Maori occupation found in the area outside the earthwork defences cannot be linked to the main excavated area on stratigraphic grounds, but can be associated on functional grounds. The two rows of palisades are clearly a part of the fortification, although whether relating to the earlier or later phase of construction is not clear. The evidence of cooking and fires outside the ditch may have been associated with either the fortification or the seasonal occupation following disuse of the paa, but the evidence of fire in the fill of the ditch must date to the period following the abandonment of the paa. However, the small fireplace just outside the ditch with indications of use for making pigment for painting the palisades must certainly be associated with the paa.

Figure 6 shows a diagrammatic reconstruction of the stratigraphic sequence with the earliest period A at the bottom and the most recent I at the top.

Artefacts and Other Finds

The 1978 excavations of the ditch-and-bank produced few artefacts. This is no doubt partly related to the fact that the excavations focussed on the defences and not on habitation areas. However, it is also likely that the site contains a relatively restricted range of artefacts because of its specialised function.

The turf topsoil contained a few recent historic items, such as shotgun cartridges. The farm fill of the ditch also included historic items, such as glass, fencing wire, china, nails, staples, and an unidentified copper object, as well as Maori artefacts. Although the cartridges and fencing wire and staples are attributable to the

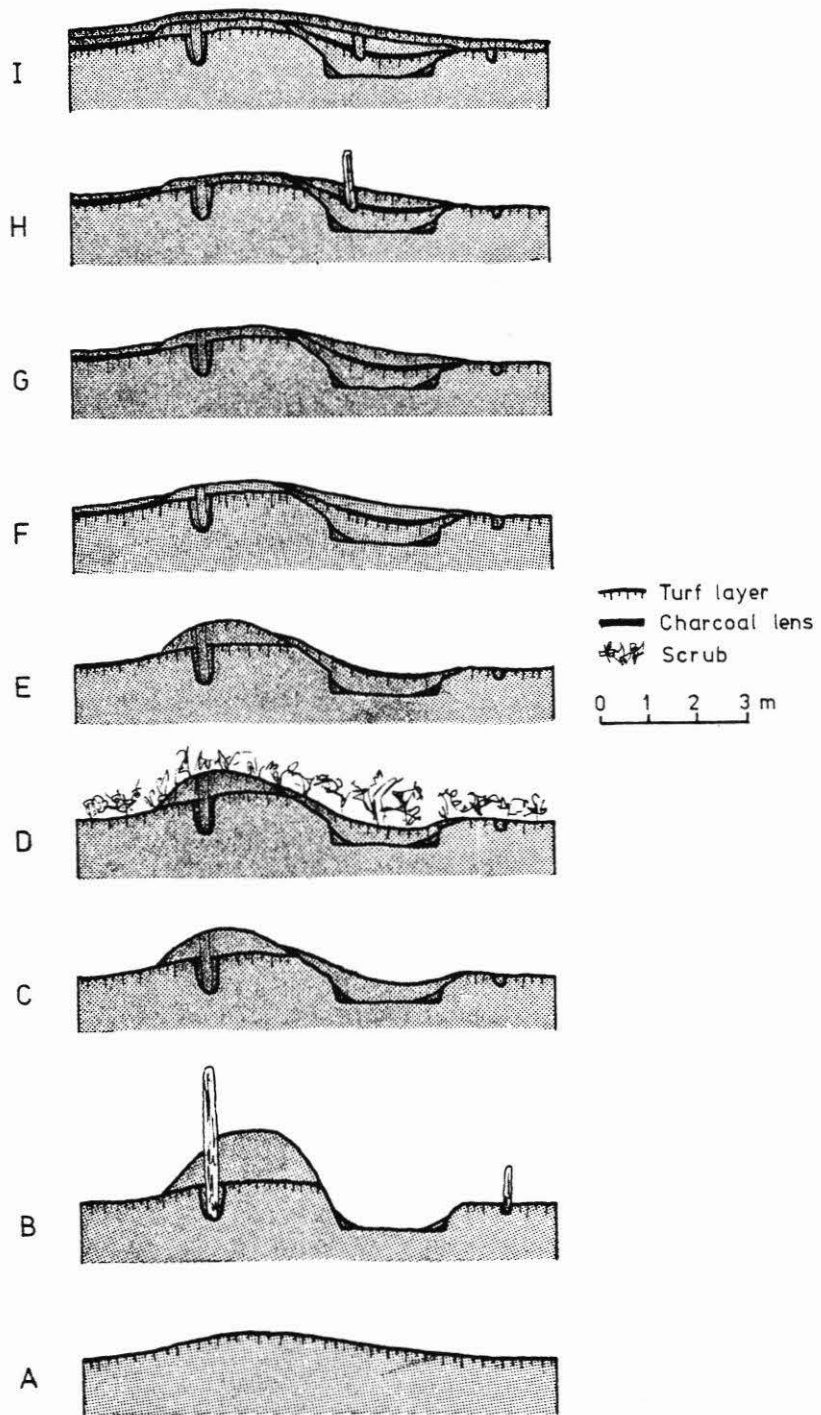


Fig.6 Diagram of stratigraphic sequence at Waitete Paa.

farming occupation of the site, some of the other historic items were possibly used by the Maori occupants.

The Maori artefacts included: lumps of pigment (red ochre); a pigment stone (red) (33 x 40 x 10 mm) smoothed in front and back and partly on the sides (Fig. 7); scoria pebbles used as pigment grinders; and glass scraper/knives. Another artefact was brought for inspection by Mr. Manssen, of Wharf Road, Waiiau Pa, who found it on the inner bank of the paa. This is a butt end of a pecked and ground handle of a patu or pounder.

The pigment preparation equipment in the bank fill and soil layer (red ochre, smoothed pigment stone and scoria grinders) supports the finding of the small fireplace used to bake pigment outside the outer fence. The samples of ochre collected ranged in colour from 2.5 YR 4/8 to 10R 5/8, and were found in the midden layer (inside the bank), the ditch refill, and the topsoil on the pre-farm ditch fill, as well as in the pigment fireplace. This can be interpreted as evidence that pigment was probably used to paint the defences of the paa. For instance there may have been carved palisades for presentation to people approaching the paa from the landward side (from the north).

The glass scraper/knives are a most interesting early historic artefact class and to my knowledge have previously been described on only one New Zealand site (Allo 1972), although they have been recognised on at least two Northland sites (J. Coster and M. Taylor, pers. comm., 1983). Given the high regard for obsidian for certain functions, it is obvious that Maori people would have made use of glass as an industrial material as soon as it was available. What is not so obvious is the functions and form these artefacts are likely to have taken; the study of the flake industries of the Maori is relatively unexplored.

All but one of the total of sixteen fragments of glass excavated had at least some signs of wear from having been used for

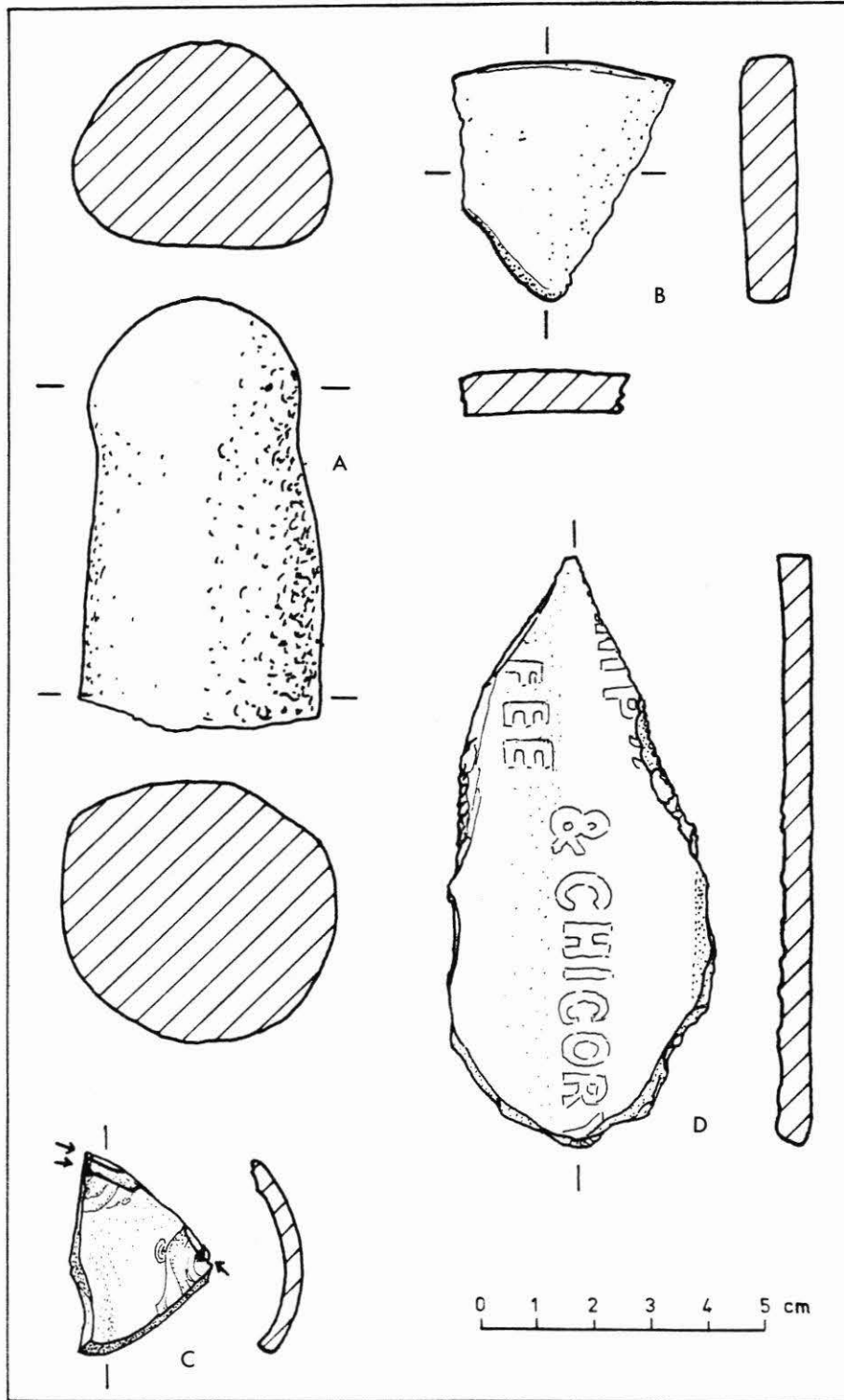


Fig.7 Artefacts from 1978 excavations at Waitete Paa.
 A - butt of stone patu or pounder
 B - pigment stone
 C - glass artefact (burin-like graver)
 D - glass artefact (knife/scrapper)

scraping and cutting. Five fragments of brown bottle glass were excavated from the soil outside the ditch, one fragment of unused clear glass was in the ditch refill (Layer 4), and 10 glass artefacts came from Layer 2, the historic period soil containing midden on or next to the remaining stump of the bank. They range from 15 to 100 mm in length.

Only one of the artefacts was clearly shaped in other than the cutting edge; this is the leaf-shaped knife (Fig. 7) which is 10 cm long and made of a chicory and coffee essence bottle, probably dating to the 1920's (G. Barton, pers. comm. 1980). Another artefact (Fig. 7) was deliberately flaked to form a burin-like cutting edge; it is a fragment of green glass with two other cutting edges as well, but with the long flake struck along its side to provide a narrow chisel like edge only 3 mm across. Other glass artefacts from Waitete have point projections which were used on their sides (not ends, as for a drill), straight, concave and convex utilised edges, an edge with use polish, and a heavily used chisel edge 39 mm across, and an edge used for plane-scraping. It is obvious that these glass artefacts were used for a variety of tasks.

The other cultural material excavated included midden in the form of shells, fishbone, and oven stones. The fishbone can be of little assistance in interpretation for it consists of only 5 fragments of unidentifiable bone.

The shellfish includes nine species as shown in Table 3, with only one, Chione stutchburyi the cockle, as the numerically most important species. However, the other species show that both sandy and rocky shore species were also collected and eaten at Waitete Paa. Bulk samples of midden from the ditch fill, inside the bank and from the surface of the inner standing ditch, all showed the same pattern.

A large number of waterworn rocks interpreted as oven stones

TABLE 3: Shellfish Species Excavated at Waitete Paa
(Minimum number of individuals present)

	<u>Ditch fill</u> (Layer 2)	<u>Inside Bank</u> (Layer 2)	<u>Inner defence</u> (surface)
<u>Alcithoe arabica</u>	1	-	-
Arabic volute			
<u>Chione stutchburyi</u>	12	59	48
Cockle			
<u>Cominella</u> sp. Whelk	2	5	-
<u>Crassostrea glomerata</u>	-	2	1
Oyster			
<u>Mactra ovata</u>	1	-	2
Trough shell			
<u>Pecten novaezealandiae</u>	1	1	2
Scallop			
<u>Turbo smaragdus</u> , Cats eye	3	9	1
<u>Haustrum haustorum</u>	1	1	-
<u>Xenophalium</u> sp.	1	-	-
Total	22	77	54
wt (g) shell		870	466
wt matrix		319	1906

were also excavated from the site, mostly from Layer 2 the soil that had formed since the farm filling of the ditch. This means that a majority of cooking activity in the vicinity of the defences happened after they were disused. A total of 245 oven stones, weighing 5900 g (an average of 24 g) show a great deal of oven cooking went on at Waitete, and only two of these pre-date the mid- or late- 19th century burning of the scrub on the site, and these relate to Layer 6 which was associated with later habitation when the defences were no longer used. The majority of the oven stones are pebbles of scoria, but others are well-consolidated sedimentary rocks. There were also oven stones in the cooking and fire area outside the ditch, but these were observed in the field to be similar to those excavated.

The absence of shark remains need not be taken as a negation of the shark-fishing camp function attributed by the historic accounts. J. Diamond (pers. comm. 1979) has found that the middens of the shark processing settlements on the northern shores of the Manukau do not contain any sign of shark remains, but this is presumably because the sharks were taken home. There must also have been racks for drying and artefacts to cut up the sharks, in addition to whatever other fish or shellfish was consumed on the spot. When further excavations take place it should also be considered whether shark processing racks and equipment might be discovered.

Discussion

There are two general kinds of comparisons that may be made between this site and others; it can be compared to other paa sites in the vicinity, and it can be compared to headland paa sites in the Auckland region, especially the few that have been excavated.

There are two other paa on the eastern shore of the Waiuku inlet (N46-7/13 and N46-7/24), both of which are headland paa.

However, there are few details and no maps of these sites, although the former is said to be very similar to Waitete paa (NZAA Site Record). There are four paa sites recorded on the western shore of the Waiuku inlet, but none immediately across from Waitete, and those recorded are all terraced ridges or hills and not similar. There are four ring-ditch paa on the cliffs along the southern shore of the Manukau harbour, east of the Waiuku inlet, and although there are sketch plans of three of these, there has been no detailed investigation. They are possibly seasonal fortifications in the sense that they are very small (approximately 1,000 m² in two that are measured) and not in the vicinity of any substantial settlement. However, their form and size makes them not at all comparable to Waitete paa.

There are many other paa on the Awhitu peninsula and a group of four recorded at Bald Hill, south of Pukekohe (Hooker 1974), but none of these seem to cast any light on the interpretation of Waitete paa.

Three archaeological excavations of headland paa have been done in the Auckland region: Kauri Point (Birkenhead), N42/27; Rahopara (Castor Bay), N38/20; and Mokoia (Panmure), N42/91. Of these, only Rahopara has been reported in detail (Green 1970, Davidson 1974a), and only preliminary reports are so far available for the other two (Davidson 1974b and Bulmer 1978).

Rahopara is not very similar to Waitete paa, as it is a terrace cliff top with both transverse and lateral ditching. It is very comparable in size to Waitete paa, being about 255 m long. The ditch and bank excavated are very similar in size and form to the excavated ditch at Waitete paa. This shows it is a traditional form of defence. However, Rahopara gives the appearance of being a permanent settlement, in that it was reoccupied and reconstructed, has extensive signs of habitation, including a number of house terraces and pits. It is located along a coast that has relatively little permanent settlement,

according to oral histories, so it may be a seasonal fishing settlement like Waitete, although it is rather different in form. Its occupation dates from about the beginning of the 16th century and continues later as well.

Kauri Point paa was, according to Ngati Whatua histories, an outlying paa for the protection of the Waitemata harbour and the access route to the Kaiparato the north. It was defended by two ditches and had several long low terraces inside. Test excavation showed the site was only occupied once, but the settlement was an arranged one, with a cooking area, a rubbish dump, and a central open place, as well as terraces which presumably held houses. This site has not yet been dated, but Ngati Whatua tradition would suggest it was lived in after that group conquered Auckland in the middle of the 18th century.

Mokoia paa was, like Waitete paa, a fortification for the musket era, but it was a paa that served a very large year-round village, not a temporary settlement. It was part of or associated with a larger fortification that enclosed a further 50 acres, although Mokoia enclosed only about 2 ha within the two ditch-and-bank lines. Mokoia's outer ditch-and-bank has been destroyed without record, so only its location is known, but there was a greater distance (about 100 m) from the inner ditch-and-bank than at Waitete. The inner ditch-and-bank were excavated and showed a development through three stages of construction. While the ditch was relatively small (similar to Waitete's outer ditch), the bank grew in height through the three stages of construction until its overall height was greater than the inner bank at Waitete. Mokoia paa was built specifically in about 1810, and lasted until 1821, as a defence against the Nga Puhi musket raids on Auckland, and it appeared that the inhabitants attempted, unsuccessfully, to modify traditional forms of the defences in light of the new weapons. It is most interesting in this

respect that the form of ditches and banks at Waitete seems not to have been substantially modified from these traditional forms, although the outer zig-zag double palisades do seem to be an innovation.

The headland paa was classified by Lady Fox (1976) according to its defences of transverse ditching, and it is the commonest form of paa, found throughout the North Island. It was appropriate to a frontal method of attack (Fox 1976:21) and depended upon traditional conventions of warfare and was abandoned by the Maori eventually in the face of gun warfare and new forms of treachery in fighting. Kennedy (1969) described a series of headland paa in the Bay of Islands, where it was the commonest geographical position for paa. She found that headland paa were generally not over 200 m long, and many had an entrance within the defences, rather than from the landward side, similar to Waitete's entrance into the inner ditch (Kennedy 1969:119).

The general impression is that Waitete is very much a traditional paa, although there was some innovation to offer new protection in the face of musket warfare. It may in fact have been one of the last headland paa built in the Auckland area, where such paa had formerly been so common.

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