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Early prehistoric wooden artefacts from the Waitore Site (N136/16), near Patea, Taranaki

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ABSTRACT

Archaeological investigations indicate that a collection of wooden artefacts from Waitore represents one contemporary assemblage which was deposited in a small swamp behind the sea-shore in the 15th century A.D. This assemblage is, at present, the oldest dated collection of wooden artefacts in New Zealand.

Many of the finds seem to be parts of a single-outrigger canoe of some structural complexity. Features of the outrigger resemble ones previously found in New Zealand. A variety of implements is also represented.

Stylistically the finds show decorative features similar to those predicted for the period of transition from New Zealand Eastern Polynesian to Classic Maori forms. The dating of this site enables a date to be assigned to such decorative styles as notching, simple spirals and naturalistic heads. One piece demonstrates a style of decoration by chisel-punching that is very rare in New Zealand.

The assemblage bears a number of resemblances to the undated collection of artefacts reported by Downes (1932a, 1932b) from the nearby Waverley site.

Keywords NEW ZEALAND, TARANAKI, 15TH CENTURY, SWAMP, WOODEN ARTEFACTS.

INTRODUCTION

Over the last ten years, ancient wooden artefacts have been eroding from the bank of a small stream that runs into the sea near the mouth of the Whenuakura River, near Patea in Taranaki (Fig. 1). In the years from 1968 to 1974 Mr G. L. Baker collected just over 100 artefacts from the gully, some *in situ* in the banks and others from the stream bed itself. These artefacts are described in this paper.

In November 1974 I took a group of archaeology students from Auckland University to investigate the site. In particular we aimed to find artefacts *in situ* in order to establish and record their precise spatial and stratigraphic context; our second aim was to date the assemblage by obtaining samples suitable for radiocarbon dating. In that season we excavated and recorded a total of seven sections along the sides of the gully. Archaeological material was found *in situ* at the base of two of the sections, H10 and D10 (Fig. 1), consisting of about 20 definitely shaped wooden pieces, over 50 fragments of wood bearing marks of human activity, oven stones, stone sinkers, and fish bones. Most of these finds are in the process of conservation at the moment and are not yet available for study.

In September 1975 I visited the site again to take further radiocarbon samples from the newly exposed section at I11. On this occasion, as a result of recent stream erosion, the stratigraphy was particularly clear and samples ideal for dating were obtained; moreover, a number of very important artefacts were recovered from the same section, which thus have been dated directly. The radiocarbon results suggest that the artefacts were deposited, in a small swamp, some time in the 15th century A.D.

In January 1978, in the course of making a report on the area for the N.Z. Historic Places Trust, I discovered that the latest stream erosion had exposed a very long (12 m) section, JK 12, with artefacts in position. I therefore took this opportunity to recover them and record their stratigraphic position. The Trust issued an emergency permit for an excavation, which was then carried out with the assistance of Mr Baker, other members of the Patea Museum Society and the local Historic Places Trust Regional Committee.

The range of artefacts recovered, together with the size of the section exposed, greatly strengthen the likelihood (indeed virtually prove) that all the artefacts previously collected from the site belong to the one assemblage, and all originally derived from within the dated peat layers.

Figure 1 shows the excavations in relation to the 1974 topography. I11 is the 1975 section, and JK 12 is the 1978 section. By 1978 the eastern side of the gully was over five metres further back from its 1974 position.

LOCATION

The site of the finds is a small stream which runs down to the beach between the mouths of the Patea and Whenuakura Rivers (Fig. 1).

The stream issues from a confined area of sand dunes and small swamps. It has a very local catchment area, extending no more than 500 m from the beach. It flows from a nearly permanent pond, through a swamp (the Waitore swamp), then into a gully cut through sand dunes down to the beach.

The artefacts have been recovered from the sides of this gully cut through the dunes; they occur in and between layers of peaty clay at the base of the dunes. No artefacts have yet been discovered in the swamp itself.

EXCAVATIONS

Because of the huge overburden of sand up to six metres high, it has never been possible to do more than clean down and expose sections in the side of the gully.

Even this has posed many practical problems. The stream is small and therefore only removes sand slowly. Sections cut in the sand dry out very fast. They collapse frequently and work is always dangerous.

A grid of five metre squares was laid out over the site. Each was subdivided into 25 one-metre squares labelled A-Y starting in the northwest corner. As an additional aid to recording finds, the nearby fence posts were numbered.

(A) AREAS H10 (1974) AND I11 (1975)

These were the most successful areas of investigation. Most of the wooden artefacts we found came from these areas, and it seems likely that most of the pieces collected earlier by Mr Baker also came from here.

Stratigraphy

Figure 2 shows the section drawn in 1974. It is less satisfactory than that obtained later from I11 (Fig. 3) since we hardly reached the peat layers in 1974. Figure 2 is a composite of three separate drawings which could not be linked directly.

This section consists essentially of two entities: (a) 4-4.5 m of sand dune overlying (b), at least two main peat levels interbedded with wet black sand, and overlying yet more black sand.

The upper part, the dune, can be subdivided on the basis of (1) different coloured lenses of sand, probably resulting from changes in sand supply and wind action, and (2) the occurrence of levels of orange "pan" within the dune. The latter consists of wavy lines of an orange-coloured concretion of sand that is crunchy in texture, and presumably is the result of oxidation of the minerals in the iron sand by water action. It seems likely that this resulted from underground water seepage through the dune from the swamps and lakes above the gully. As such, therefore, these orange levels may not have any stratigraphic significance, but simply represent different levels at which water has seeped through the dune.

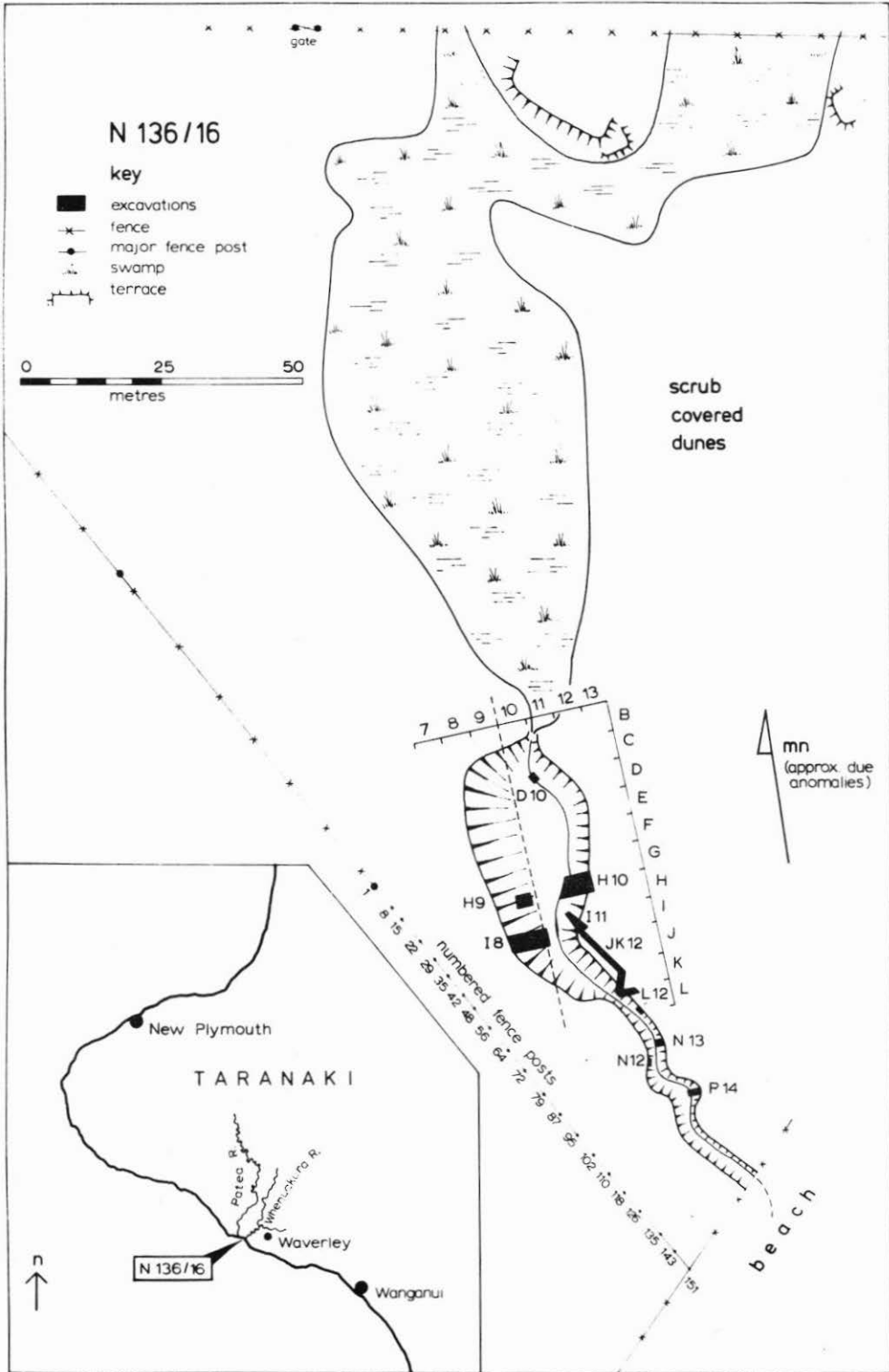


Figure 1 Location of Waitore site, N136/16, and plan of excavations.

The main feature of the lower part of the section is the "peat" levels. When freshly exposed these layers consist of green, yellow and black lenses. As they dry out, they turn to an orange-brown, and become hard like dry clay. Since they result from fresh-water sedimentation, they have frequently been called "peats" during these investigations, although, strictly speaking, they are peaty clays.

In the 1974 excavation only two main peat levels were distinguished, and all the artefacts recovered from this section came from within or between these two layers. There was only one exception to this, a piece of worked wood which came from the damp sand below the lower peat.

Both main peat layers have been broken up; gaps in them are typically filled by masses of fibrous remains of niggerhead (*Carex* sp.) in a black sand matrix. It is probable that these plants themselves created the gaps in the peat. These old swamp sediments were covered with sand at least twice, the last time finally permitting no further swamp accumulation.

The I11 section exposed in 1975 (Fig. 3), just south of the 1974 excavation, revealed three distinct peat layers and permitted a much clearer view of the location of artefacts, including two missing parts of the punch-decorated plank (N136/16/1, 20, 106, 107), shown on the section as Nos 2 and 3 (field accession numbers). Unfortunately it is not possible to relate precisely this section to the one drawn the year before, but it is likely that the upper two peat levels of the 1975 section (Layers 2 and 5a) are the same as the two peat layers drawn in 1974, while the lowest 1975 peat layer (7) was not encountered in 1974.

By comparison with Figure 2, Figure 3 shows that the peat levels now rise towards the south-east, which suggests that they do not extend much further eastwards under the dune, and thus the gully may not have been much wider than at present.

Radiocarbon dates

Samples of the peaty clays were taken for radiocarbon dating from the I11 section (Fig. 3). Sample NZ 4037 comes from Layer 7, below which no artefacts have been found. Layer 5a probably represents the bottom of the swamp on which most of the artefacts were deposited with the exception of those around the area of disturbance (4a). Overlying all of these layers is Layer 2, from which NZ 4035 was taken.

The laboratory burnt the whole sample to produce the counting gas. The results were as follows:

NZ 4035 A (Old half life, uncalibrated)	520 ± 50 B.P.
B (New half life, uncalibrated)	540 ± 50 B.P.
NZ 4036 A	510 ± 40 B.P.
B	520 ± 40 B.P.
NZ 4037 A	420 ± 70 B.P.
B	440 ± 70 B.P.

Using a computer programme devised by Garry Law, which applies the methods of Ward and Wilson (1978), the dates were tested to see if they were significantly different from each other; the result was that the dates are consistent with a single age. This simply means that the time period represented by the accumulation of the three layers of peat is not measurable by radiocarbon dating.

When the dates are grouped together, and calibrated according to the Clark (1975) scale, it is clear that the chances of the real age lying outside the range A.D. 1380-1500 are very small.

Considered individually, the dates, when calibrated, give the following results: NZ 4035 has a unimodal distribution, with a modal value on the Clark curve of A.D. 1410, and on the MASCA curve, of A.D. 1400. NZ 4036 is similarly unimodal, with a MASCA mode of A.D. 1400 and a Clark mode of A.D. 1420. Sample NZ 4037, stratigraphically the lowest sample, gives a trimodal result according to the MASCA curve, and a unimodal but skewed result on the Clark curve. The most likely mode of the MASCA result and the mode of the Clark result are, however, compatible with the modes of the previous dates.

There can be little doubt that the peat deposits are at least 15th century in date, with the likelihood that they are in the earlier part of that century.

One must consider the possibility that the wooden implements were inserted into or among the peat layers after the formation of Layer 2. There are two ways this could be done: (1) by inserting the wood in the side of the gully as it is at present, or (2) by digging a hole through Layer 2, at a point west of the present section before it was covered by dune sand, and then pushing the artefacts into the sides of the hole.

Possibility (2) can be excluded because some of the pieces of wood were several metres long; possibility (1) can be excluded on the grounds that the existing swamps would be much easier and more suitable places to hide large pieces of timber; also one slat 85 cm long, encountered in the 1978 excavation, was in a nearly vertical position.

It is therefore most likely that the artefacts were deposited in a small swamp which was in existence in the early part of the 15th century A.D., and that this swamp has been covered by unstable dunes during the last 500 years (see discussion of D12).

Artefacts recovered

In the following paragraphs I discuss the artefacts which we recovered *in situ*. In this discussion I will normally refer to the artefacts by their Patea Museum accession number, e.g. N136/16/58, which for convenience will be abbreviated to 58. The finds also have field accession numbers such as 1974/13 or 1975/4, and these numbers will always be cited with the year in front in order to distinguish them from museum accession numbers. It is necessary to use the field accession numbers for artefacts which are (a) being conserved and therefore not yet in the museum, or (b) not kept in the museum because of lack of museum interest, e.g. largely unmodified timber or burnt logs.

During the 1974 H10 excavations a number of artefacts were found *in situ*, which unfortunately are not at present available for study as they are awaiting conservation. However, the field notes show that the following were recovered in or between the two main peat layers: (a) the end of a beam (1974/58) with a shelved base and a groove round the upper part of the end, both features probably serving to attach it at right angles to some other structure, very like the way outrigger booms are attached to canoe hulls of examples in the Auckland Museum; (b) pieces of gourd; (c) part of a small "horn-shaped", rectangular-sectioned, curved knob (1974/71a); (d) one large sinker or anchor stone, artificially waisted into an hourglass shape (1974/70), and another equally large but unmodified stone; (e) vine-like withies or lashings; (f) several stones about 8 cm long which were probably used as oven stones, although one or two seem to have been deliberately flaked (*not* heat-fractured) to form a crude chopper; (g) a battered grey papa cobble, whose battering may have resulted from use as a hammerstone; (h) a soft piece of sandstone, apparently smoothed by use as a polisher; (i) two sets of fish bones, one including the skull of a small snapper, together with the vertebrae and teeth of a small dogfish lying directly under the anchor stone (1974/70), the other consisting of elasmobranch vertebrae only, associated with stones; (j) various wooden planks, pieces of burnt timber and assorted other bits of timber, sometimes showing signs of cutting or chopping.

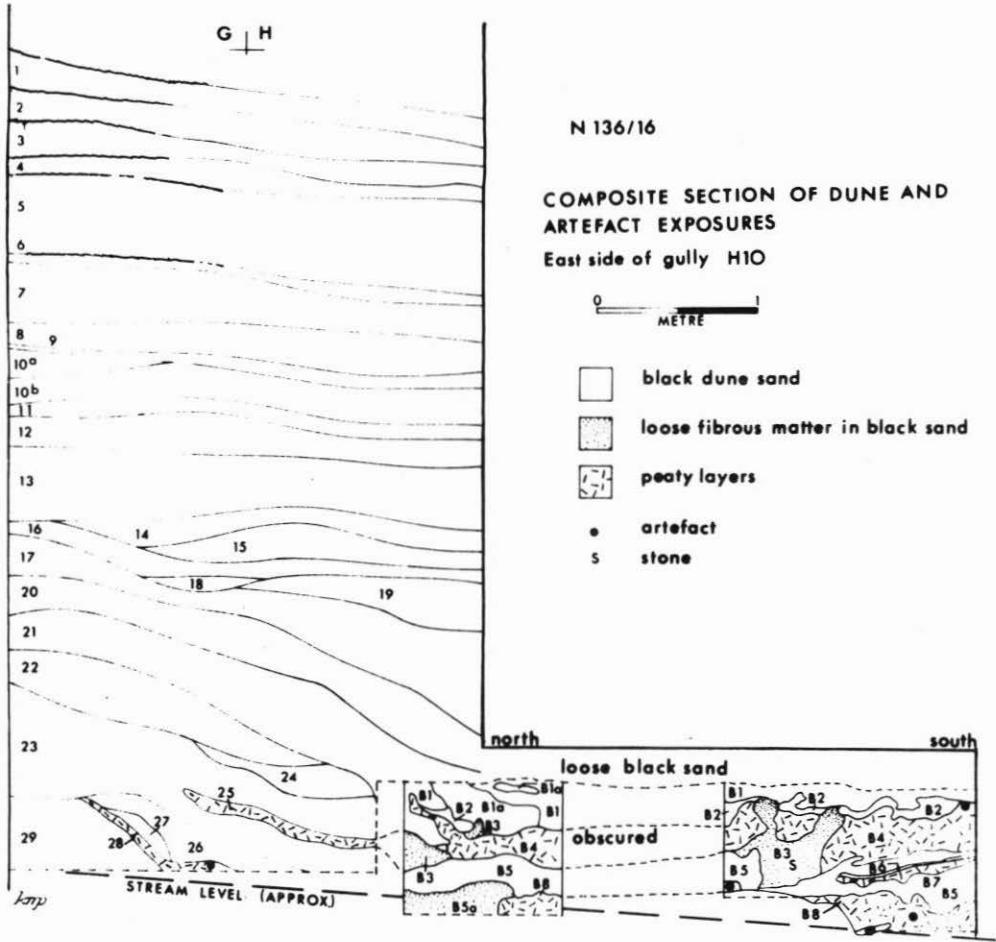


Figure 2 Waitore H10 section, 1974.

N136/16
1975

EXPOSURE OF PEAT LEVELS WITH ARTEFACTS AT BASE OF DUNE
EAST SIDE OF GULLY, I11 SHOWING LOCATION OF C14 SAMPLES.

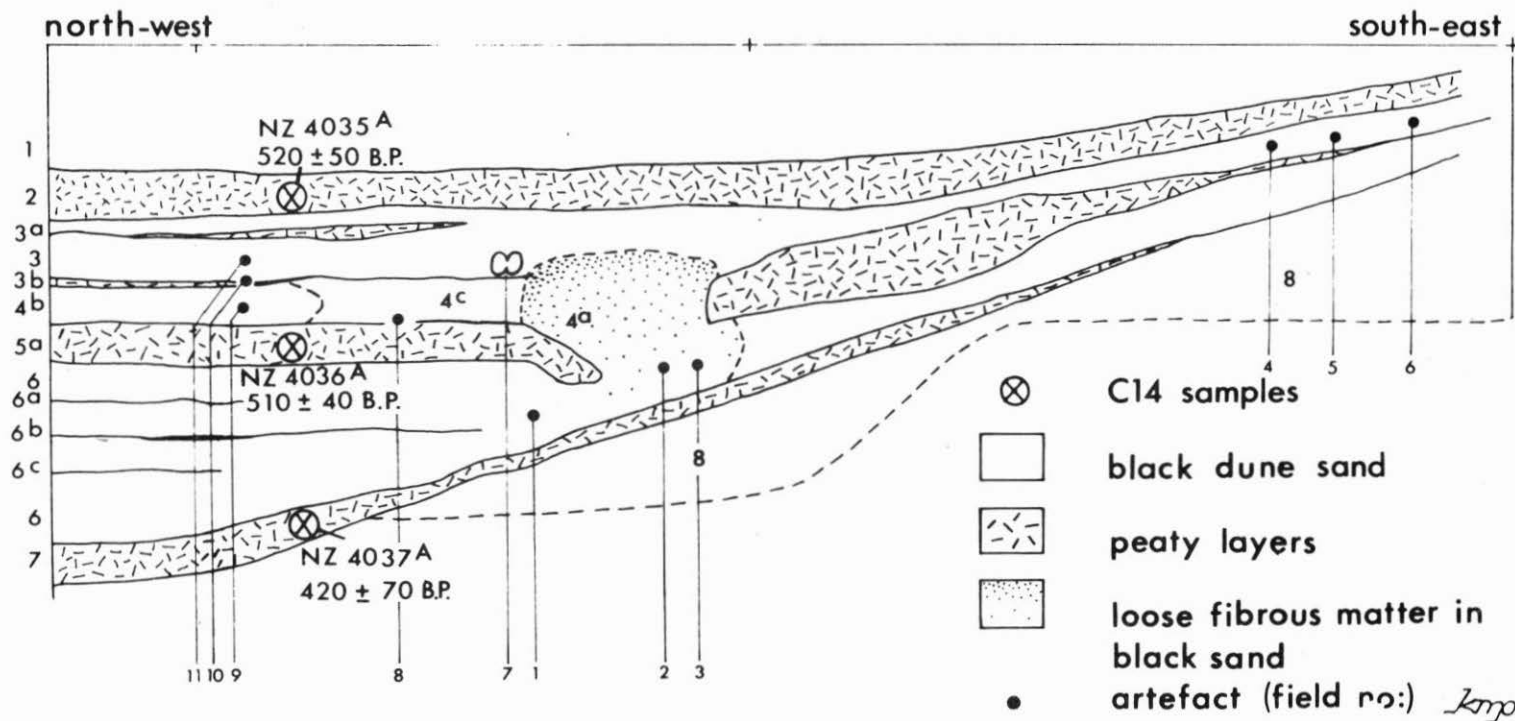


Figure 3 Waitore I11 section, 1975, with radiocarbon dates.

During the 1975 visit two pieces of punch-decorated plank (1975/2,3 = 106,107) were recovered, and, on being taken to the museum, turned out to fit exactly with two pieces previously found by Mr Baker (Nos 1 and 20), to form the spectacular artefact shown in Figure 4. In addition the discovery of a chisel handle (?) with notching along its edges (1975/4 = 104) unequivocally demonstrates that this decoration style can be associated with the radiocarbon dates.

On the basis of our work and discussions with Mr Baker, I believe that most of the collection made by Mr Baker (described later) probably came from this part of the gully. Mr Baker specifically recalls the following as coming from about this point in the gully: the two pieces of decorated plank (Nos 1, 20); the "whakapapa" (long notched "stick" No. 9), the ridged box lid (No. 14), one of the modified canoe bailers, what may have been a spear (now lost), a whale vertebra, and a curved plank that may be a piece of canoe decking (No. 82).

(B) AREA JK12 (1978)

The section is shown in Figure 5, and the finds are indicated by the 1978 field accession numbers.

The top of these peat layers is almost exactly level with the top of the peat layers reached in 1974 in H10. There is little doubt that all the peat layers (1974, 1975, 1978) from H10-K12 area are the same set of deposits. The peat layers are remarkably horizontal in a north-south direction. However, they slope upwards towards the east which can be seen both in the 1975 section oriented NW-SE and in the projecting baulk at the southern end of the 1978 exposure. In addition, both these areas also show that some of the peat layers terminate towards the east. These features again indicate that the depression in which these peats formed was a long and narrow one approximately the same shape as the present gully but extending further east.

The 1978 excavation recovered over 40 pieces *in situ*. Notable was the find of a "horn" (1978/13 = No. 528) from the lowest set of peat levels. A total of six "horns" has now been recovered from the site; two are clearly linked to the great decorated plank (Fig. 4) by their decoration style of punching and notching. Part of a "horn" was also recovered *in situ* in 1974.

Types of artefact not previously recovered (or not previously recovered *in situ*) included a carved (?fishing) float of very light wood (1978/9), a spade blade (1978/46), part of a paddle (1978/16), a wooden weeding stick (1978/41), several long battens with holes down the centre (1978/2) and a re-used stone flake from a polished adze of metasomatised argillite, probably from the Nelson-D'Urville ultramafic belt (1978/15).

Other finds included two sinkers or anchor stones with the lashing still intact (1978/6, 10), one on the top peat layer, one on the second peat layer. In view of the size of these stones (usually about 75 cm long), I assume they were used in the vicinity, possibly to weigh down eel traps in the swampy gully; or else they are simply discarded fishing sinkers or canoe anchors intended for use in the sea. The discovery of fish bones under the stone found in 1975 (1975/70) favours the eel trap hypothesis. However, groups of such bones are also found without sinkers, e.g. elasmobranch vertebrae directly under plank 1978/11, below a log (1978/39), and isolated in peat, but with the upper and lower beak of a bird, a huia (1978/19). These can be interpreted as bundles of eel bait, or one might invoke some ritual function.

(C) AREA D12 (1978)

This area is important because it is, so far, the only point in the gully where a soil horizon has been observed *within* the sand dune that overlies the peaty clay levels. Unfortunately it could not be linked directly with either the D10 or H10 sections. The soil horizon consisted of a brownish, hard sand, 10 cm thick, with fine bits of charcoal and a single but

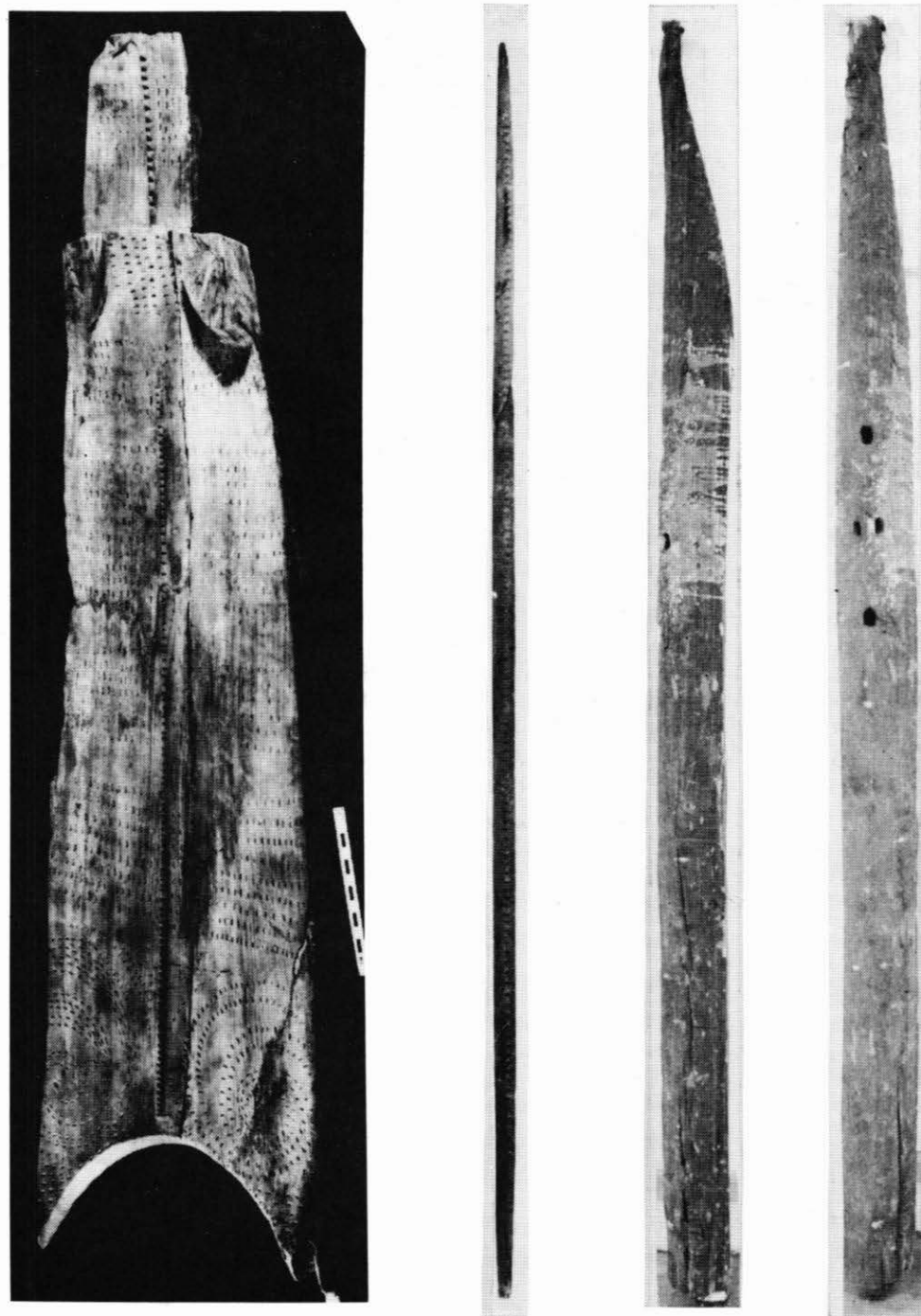


Figure 4 Left: decorated board, N136/16/1, 20, 106, 107. 100 cm max. Centre: notched stick, N136/16/9. 183 cm. Right: outrigger float, N136/16/525. Top and side views. 221 cm.

non-continuous level of white ash. Above this horizon were patches of charcoal, while below it (separated by about 25cm of black sand) was an intact *hangi* about 70 cm in diameter.

The only possible link with the peat sections is the observation made in 1974 that the uppermost peat level then encountered contained occasional lenses of white ash. If this is the same white ash as in the soil horizon, one could suggest that the *hangi* is contemporary with the middle and lower peat levels (where most of the artefacts occur), while the soil horizon was formed on the dunes contemporary with the last peat level. Since the ash probably reflects the burning of the vegetation on this soil, it may have been this fire that ended the stability of the dunes, resulting in much of the stream gully being filled with loose sand.

(1) Area C10-D10

In 1974 a small excavation was carried out here, at a point very close to the head of the gully. Only the bottom of the section, containing the peat levels was excavated as the overlying sand (originally about two to three metres thick) had been eroded off.

In this section, two metres high, 11 peat layers interbedded with lenses of sand could be distinguished. Pieces of worked timber occurred in the fourth and sixth peat layers down and on top of the lowest peat layer.

It is not clear if the C10-D10 peat layers are extensions of the peat layers in H10, because the intervening stratigraphy has been completely eroded away. Reasons for thinking that they may be the same layers are: (1) the C10-D10 layers slope down in the direction of H10, and could have joined up with them, amalgamating to form three layers, and (2) as in the H10 section, pieces of worked timber were found in between the peat layers. Reasons for arguing that the two sets of peat layers are *not* related are: (1) the lowest C10-D10 peat layer is 50 cm above the highest one in H10, and (2) the H10-JK12 peat layers are almost precisely level over a distance of 16 metres. It would be odd if this swamp suddenly sloped upwards at its source.

Mr Baker recalls having collected the outrigger float from close to this section, which, therefore, cannot be certainly associated with dated peat levels.

(2) Area H9 (1974)

Excavations in this square were abandoned after it became clear that it did not contain *in situ* deposits, but rather the debris removed previously from the artefact-bearing face. Among this debris were found various small planks and some crude adze handles.

(3) Area I8 (1974)

A long vertical section was obtained here through the dune, revealing a sequence similar to the upper part of the H10 section. However, no peat was encountered at the base of the section, perhaps because the ancient swamp did not extend this far west. One artefact, a large sinker or anchor stone, with notches in two opposite sides, was recovered from approximately the middle of the dune. There is no way this can be related stratigraphically to the peat layers on the other side of the gully; however, similar anchor stones have been found in and on the peat layers in H10 and JK12.

(4) Area L12 (1974)

The section here revealed a layer of peat, 50 cm thick, under sand layers, below a fairly thick sandy topsoil. No artefacts were recovered.

(5) Area N13 (1974)

A layer of peat, 25 cm thick, was exposed above the stream level, surrounded by sand layers.

N136/16 JK 12
January 1978

PEAT LEVELS EXPOSED AT BASE OF SECTION
(SAND OVERBURDEN NOT SHOWN)

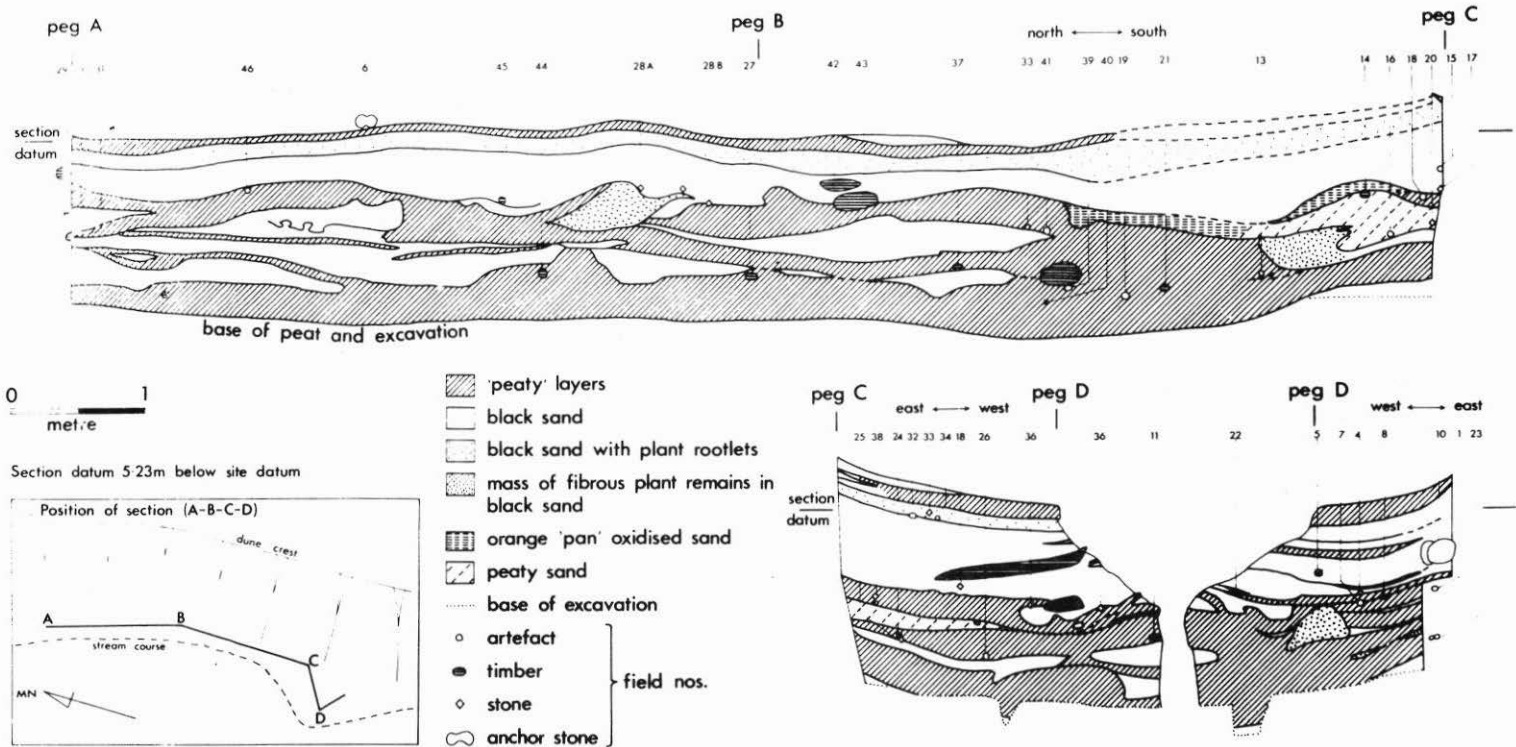


Figure 5 Waitore JK 12 section, 1978.

(6) *Area N12 (1974)*

A section was dug here to investigate the stratigraphic context of a *hangi* which was exposed in the stream bank. Many *hangi* stones have been recovered from the stream bed by Mr Baker, and it was important to try to establish if these came from ovens contemporary with the peat layers.

There were "floating" lumps of peat in this section. The stones and some associated sticks were, however, all in sand layers above the peat, or beside the peat in more recent layers of sand that have slumped into the stream cutting.

The sequence of events seems to have been: first, a sand dune, secondly a swamp/lake formed, which then dried out and was smothered with sand. Later a *hangi* was made on this sand, and more sand accumulated. The present stream then started to erode its course and sand, with some *hangi* stones, slumped down into it. This section shows that this *hangi*, at least, post-dates one of the swamp levels, but it is not clear which one, since the level of this layer is about one metre below the level of the lowest peat in the JK 12 section. It is also interesting to note that wood is preserved in damp sand layers above the peat. Although none of this wood showed signs of human manufacture, it is possible that some of the artefacts found in the stream might come from post-swamp levels. The find of an anchor stone (1978/6) on top of the highest peat level in JK12 shows that some occupation continued after the last peat level had formed.

(7) *Area P14 (1974)*

The absence of peat in this section may indicate that the ancient swamp never extended further south than N12.

SUMMARY OF STRATIGRAPHY

Nowhere in the site has any evidence of occupation been found that pre-dates the lowest peat layer. Virtually all the finds recovered *in situ* pre-date the uppermost peat layer except for (1) an anchor stone (1978/6) resting on top of this layer in the JK 12 section, (2) a *hangi* (D12) which is probably contemporary with the uppermost peat layer, (3) another *hangi* (N12) which post-dates a peat layer but is so far away from the main section that there is no way of knowing which of the three peat levels it represents.

THE ARTEFACT COLLECTION IN THE PATEA MUSEUM

This description is primarily of the unprovenanced pieces collected by Mr Baker between 1968 and 1974. However, reference is made to any similar pieces recovered *in situ* from the later excavations.

The collection of wooden artefacts (numbered between 1-107) consists of:

- 1 large board (bow or stern cover for a canoe?) decorated with punched indentations and notched ridges (pieces 1, 20, 106, 107)
- 2 horn-like curved knobs, originally projections from some larger piece of wood (23, 24)
- 1 small carved wooden head, originally a projection attached to something else, perhaps a "godstick" (5; stolen in 1974)
- 1 very large canoe outrigger float (525)
- 1 canoe prow- or stern-post or leeboard (8)
- 3 canoe bailers modified into a hook-like shape (10, 11, 12)
- 1 thin plank with many holes, decking? (82)
- Numerous anchor stones or large sinkers, sometimes with fibrous lashing still attached
- 5 curved canoe thwarts or box handles (6, 13, 15, 16, 103)
- 2 basal parts of paddle or spade (17, 18)
- 1 part of handle of paddle or spade (49)
- 1 long notched stick — *whakapapa*, or batten for lashing over joints? (9)



Figure 6 Head, N136/16/5. 8 cm.

- 1 rectangular trough — for eating or drinking or bird snaring? (84)
- 2 wooden beaters (85, 86)
- 3 parts of chisel handles (32, ?64, 104)
- 1 wedge (22)
- 1 box lid (14)
- 1 shaped implement of unknown function (37)
- 1 shaped piece of unknown function, snapped in two (38, 39)
- 1 large, curved wooden withy, part of eel trap or outrigger attachment? (2)
- 2 miscellaneous well-shaped pieces of wood, fragments (19, 88)
- 2 thick straight slats with holes at the ends, canoe thwarts? (21, 25, 26)
- 17 miscellaneous planks (canoe seats and/or spade blades?)
- 3 planks with holes at one end (canoe seats or parts of box?)
- 6 planks with holes at both ends (canoe seats or parts of box?)
- 3 planks with holes along side
- 9 narrow, semi-circular section slats, panelling or battens
- Various stakes, splinters of wood, adzed pieces, chips
- Piece of fibre lashing

Other finds include a core of poor-quality obsidian, two stone line-sinkers (cobbles with notches flaked on opposite sides), and various other chips of stone.

This concludes the list of finds made by Mr Baker before 1974. Wooden artefact types found since then and described in the excavation section of this report include: crude adze handles (1974), the shaped end of a beam or outrigger boom (1974/58), pieces of gourd (1974), a carved fishing float (1978/9), a long weeder (1978/41), a spade blade (1978/46) and part of a paddle (1978/16).

BEHAVIOUR IMPLIED BY THE ARTEFACTS

In terms of the behaviour represented by these finds, one can note that:

- (1) The decorated plank has been broken, probably deliberately (bad temper, ritual, or warfare?).
- (2) Most of the pieces are damaged or incomplete in some way, with the following exceptions: the canoe leeboard, the box lid, the outrigger float, one chisel handle and some adze handles, and some of the small planks. The last mentioned may have been deliberately placed in the swamp to preserve them, but the majority of the finds were probably thrown away.
- (3) Many of the pieces may be parts of canoes, e.g. possible seat planks, thwarts, battens, outrigger float (and boom end?), bow cover, leeboard, bailers, decking; or related to canoeing, e.g. the anchor stones.
- (4) The large wood chips and worked timber attest to rough carpentry on the site, perhaps using drift wood carried down to the sea by the Whenuakura and Patea rivers. (The shore by the site is regularly covered with such timber today.) However, wood shavings have not been recovered, so the working floor, if it existed, must be elsewhere.
- (5) Some of the pieces are burnt, and may have been used as firewood.

DETAILED DESCRIPTION OF THE ARTEFACTS

This description is mainly a functional analysis of the pieces. Readers are referred to the accompanying paper by Ian Lawlor, who discusses the culture-historical significance of the stylistic features of the assemblage.

The most spectacular find is undoubtedly the decorated board shown in Figures 4, 10 and 11 (pieces 1, 20, 106, 107). The piece has a maximum length of just over one metre and a maximum width of just over 30 cm. The decorated surface, presumably the top,

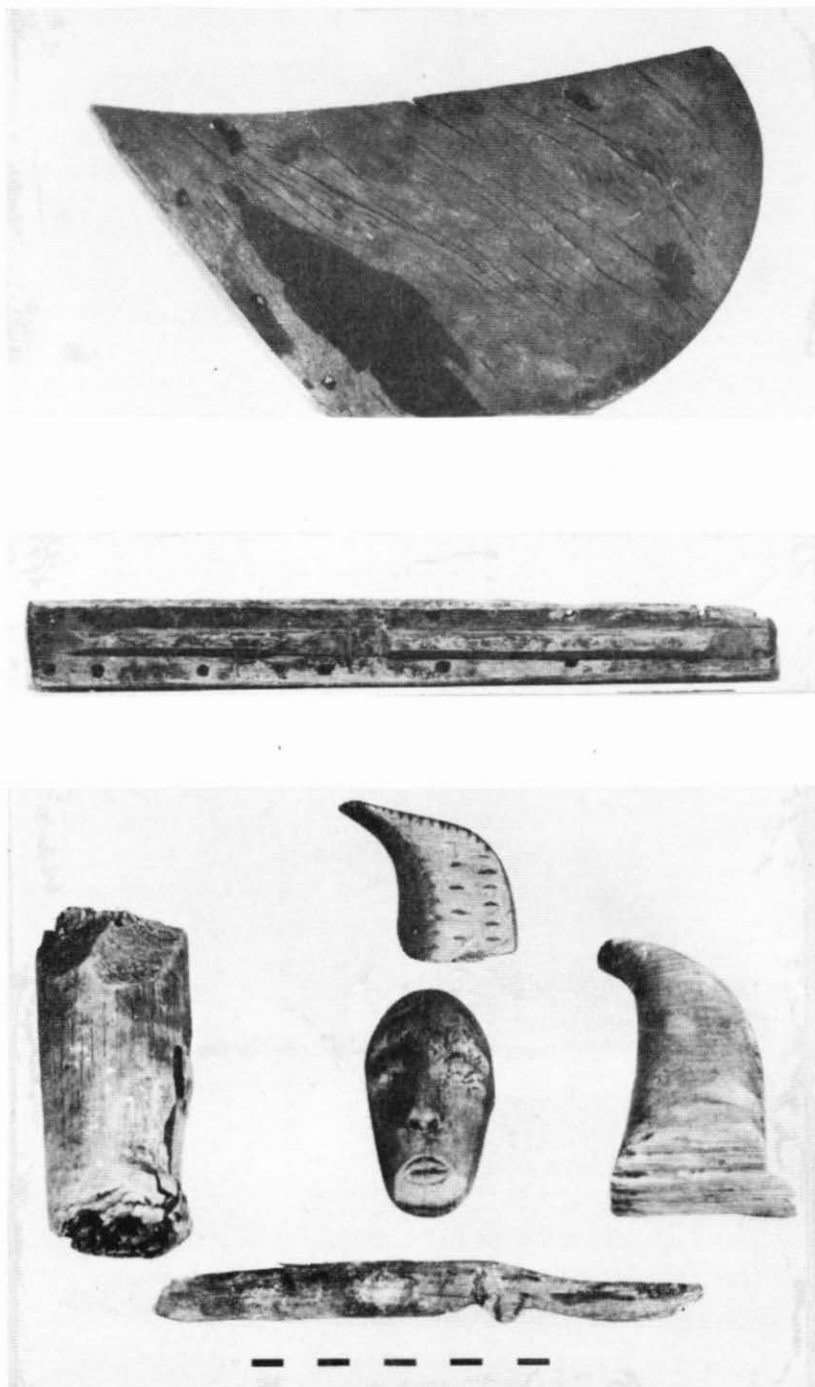


Figure 7 Upper: canoe prow ?, N136/16/8. 39 cm max. Centre: box lid, N136/16/14. 61 cm. Lower: (scale in cm); top, horn N136/16/24; centre left, wedge /22; centre, head /5; centre right, horn /23; lower, unknown type /37.



Figure 8 Upper: food trough, N136/16/84. 44 cm. Centre: reworked bailers, left to right N136/16/10, 11, 12 (scale in cm). Lower: various slats, top to bottom, N136/16/36, 40, 27, 21, 26, 25 (scale in cm).

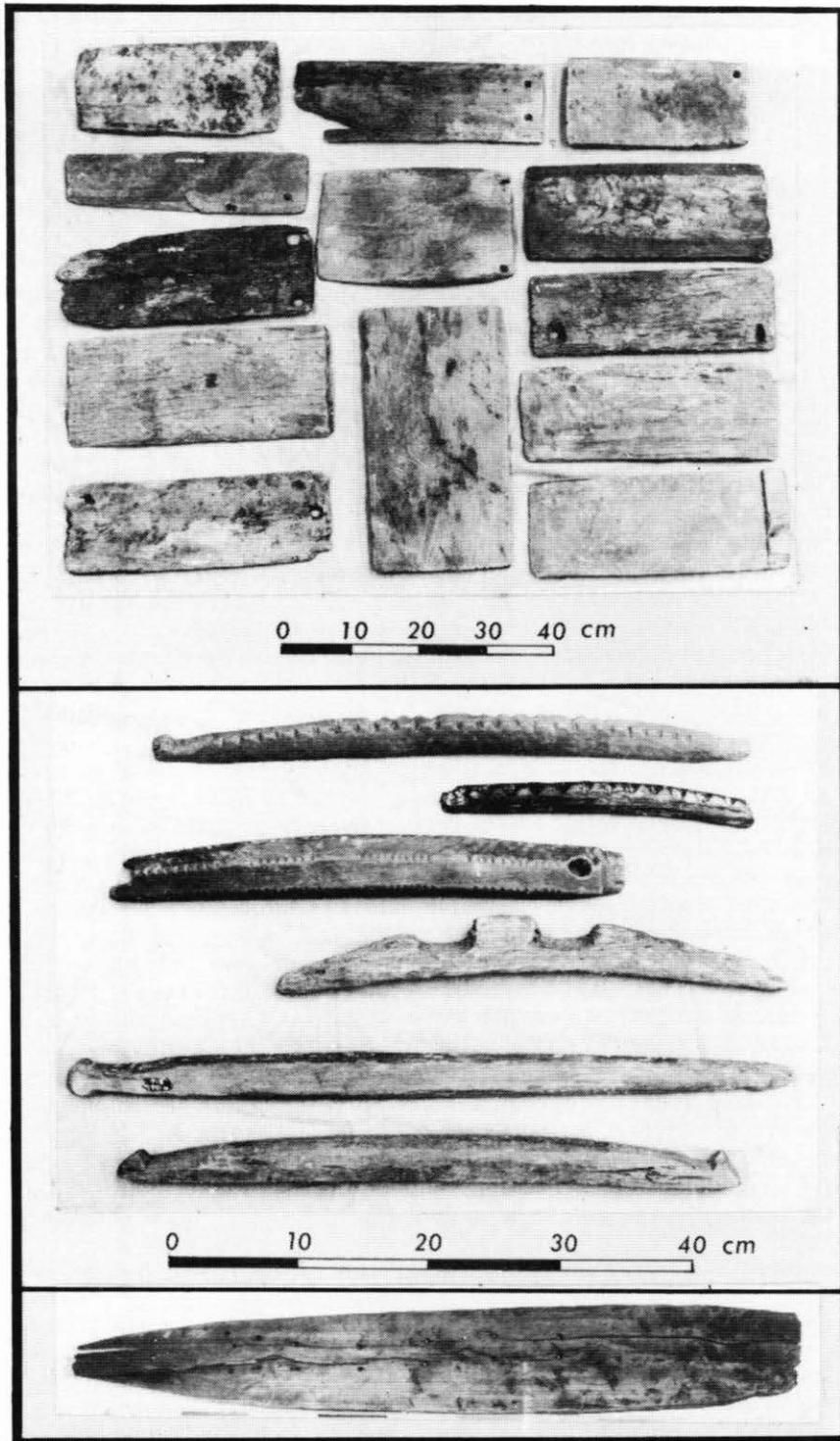


Figure 9 Upper: small planks. Centre: handles or thwarts, top to bottom N136/16/501, 103, 15, 16, 514, 13. Lower: canoe "decking", N136/16/82. 155 cm.

curves upwards towards the narrow end, but is nearly flat across. The narrow end is stepped down, forming a projecting foot (Fig. 10, lower). Just above this step are the butt remains of two projections, the form of which is unknown although the "horns" (pieces 23, 24) would be the right scale and one of them is decorated in the same way as the board. Unfortunately none of the horns so far recovered fits the board. The top surface of the board has a central notched ridge, which, however, is absent over part of the narrow end just before the projections, but continues on to the foot, as do the punched decorations. The wide end forms a concave hollow, and the curved inside edge of this end is well smoothed (Fig. 10, upper).

The board used to have "sides" below its long edges, but only the base of these remain. These sides were decorated also.

The top surface is decorated with punch marks, almost certainly made by a chisel, or rather two chisels of slightly different sizes. The chisels could have been bone or stone. The punch marks form two concentric spirals at the wide end of the board, one with marks at right angles to the direction of the spiral, the other with marks following the spiral (Fig. 10, upper), and there are ranks of marks over the rest of the surface. The raised ridge is decorated with deep, wide notches cut into it (as opposed to being punched), so that a series of low pyramid shapes are left.

The function of this piece is not clear. Given the longitudinal curve and the presence of decoration on the foot, it seems unlikely to be a wall post to support a rafter, and I propose the hypothesis that it was a cover for the bow or stern of a canoe, perhaps set behind some form of prow as shown in Figure 11. It is clearly not a complete prow, such as that found at Waitara (Phillipps 1955:174), as it is equivalent to only the back part of the Waitara prow, and must have had a separate prow-piece in front of it. A similarly shaped piece of wood covers the stern end of the long hull of a double canoe, Te Kiva o te Rangi, from the Cook Islands, now in the Auckland Museum. The hypothesis that this was a bow-cover has a number of implications: first, that this was a sea-going canoe rather than a river craft, since such covers would not be necessary on a river. Secondly, if fitted with "horns" such as those recovered and shown in the reconstruction in Figure 11, the board would have served as a good base for the attachment of ropes to a mast. This would imply that we are dealing with a sailing canoe rather than one propelled entirely by paddling. Thirdly, the "horns" may have projected backwards, and thus could have served as good points at which to tie an anchor rope. Two such projections can be seen on the canoe stern piece figured by Archey (1977:63; Fig. 126). However, if this was their function, there is no apparent reason for having the "step" right next to the projections.

A possible method of attaching a prow would be a mortise and tenon device as described by Best (1925:72). In the case of the Waitore plank, the tongue at the end (Fig. 10, lower) might then be the tenon to fit into a mortised slot at the base of the prow itself. However, the existence of decoration on the tongue argues that it was not so covered.

The reconstruction shown in Figure 11 is based on a stern-post now in the Waikato Art Museum (provenance unknown), which shares with the Waitore piece the rare decoration style of ranks of chisel marks. Except for the "horn" (piece 24, Fig. 7), no other objects are decorated by punched indentations. Carved notches, however, occur on several other pieces, including two curved "handles" or canoe-strakes (pieces 15 and 103, Fig. 9), the *whakapapa*-like long stick (piece 9, Fig. 4), and the (?chisel) handle (piece 104).

The two, horn-like, curved knobs (23, 24, Fig. 7) are both broken at the base. Piece 23 (maximum dimension 10.6 cm) is undecorated but has a groove, as though worn by thick string, around the base of its convex side. One might have expected such a groove to be rather on the concave side, in which case the horn might have functioned as a cleat or belaying point. Piece 24 (maximum dimension 7.5 cm) is similar, except that less of the base is present, and it is decorated with notches cut along the edges and punch-marks on the flat face. In their present form neither of these pieces fit the "canoe bow cover",

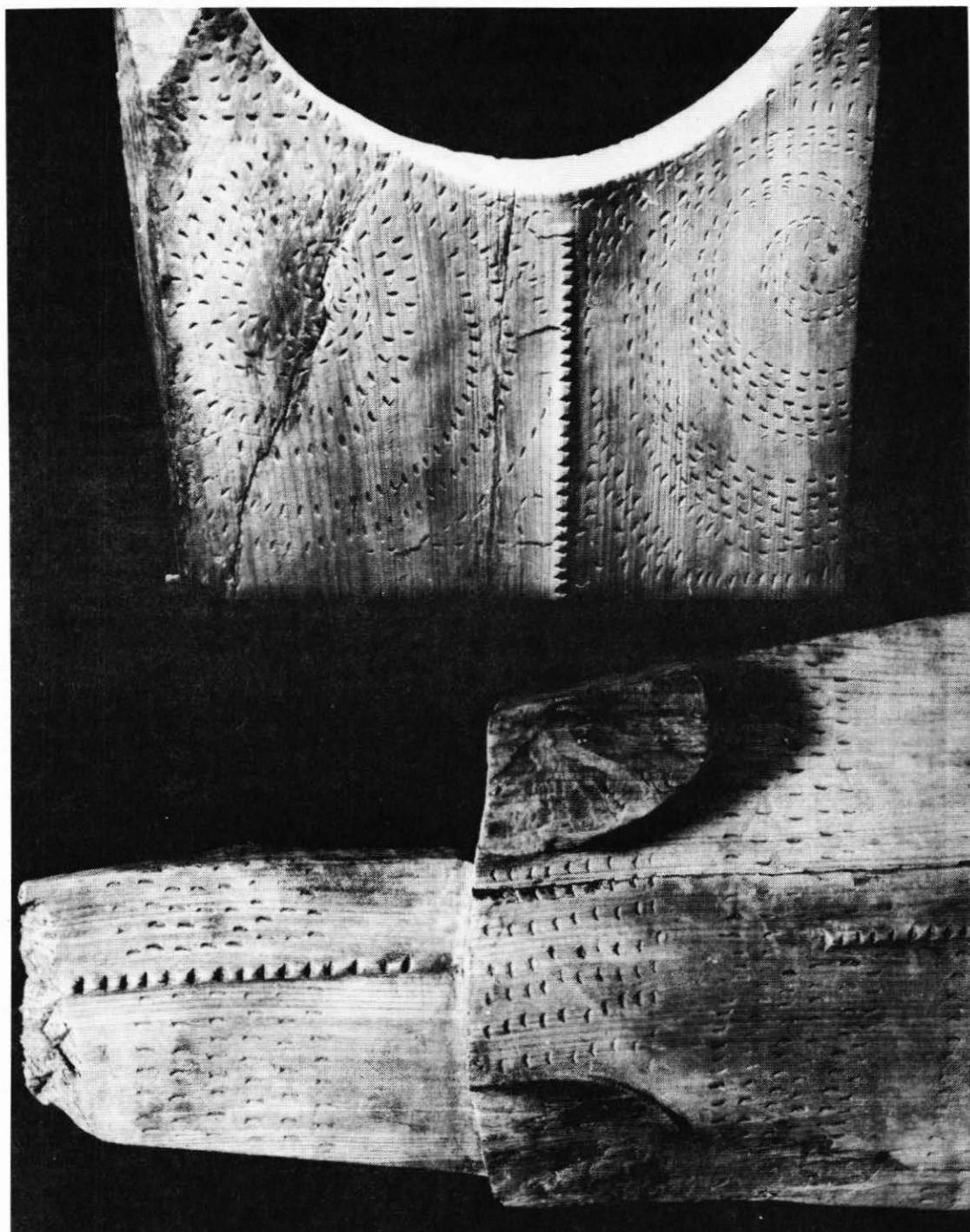


Figure 10 Decorated board, N136/16/1, 20, 106, 107. Detailed views.

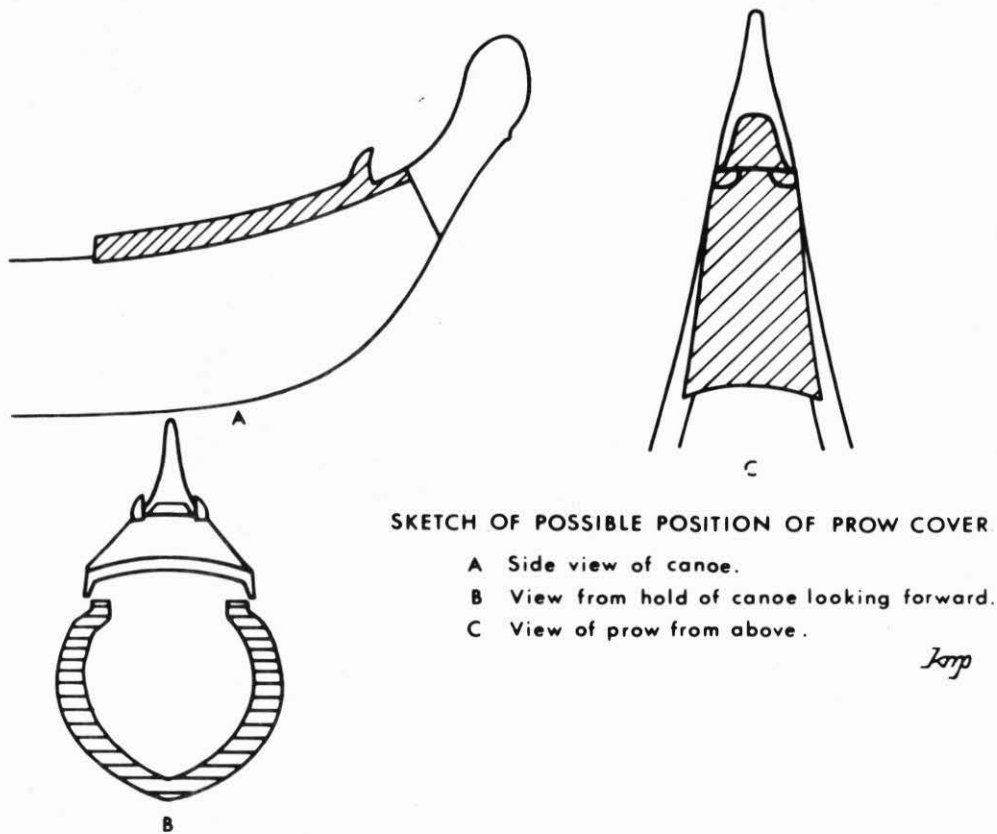


Figure 11 Sketch of possible position of canoe bow cover (decorated board).

though the identical decoration style suggests such an association. To date, four other "horns" have been recovered from the site, two *in situ* (1974/71a and 1978/13), but none of these is decorated. They are all broken at the base, which strengthens the hypothesis that they served as lashing points for ropes or stays.

The wooden head (piece 5, 8 x 4.2 cm, Figs 6 and 7) unfortunately now stolen, was attached at the back to some larger form, and by analogy with the Waverley finds (Downes 1932a, 1932b), it may have been either a "godstick", a decoration on a canoe, or the decorated end of a regular paddle or steering paddle (Best 1925:168). The latter sometimes have decorations carved on the top of the handle, as does one example in the Wanganui Museum. In style the head is undoubtedly closer to the Waverley finds illustrated by Downes (particularly 1932b: Plate I, both heads; but also 1932a: Fig. 9B) than to any other piece I have seen. Stuart Park kindly brought to my attention a piece collected from Chalky Inlet by Coutts (Otago Museum No. L75.6, Coutts 1969:121), which is a face carved on the end of a wooden rod, which now projects only a short way from the face, possibly having been chopped off the end of a larger implement. Barrow also describes two godsticks with very similar features; one is his No. 9 (Barrow 1959:191) from the Wanganui Region; the second is his No. 16 (Barrow 1961), not provenanced but assigned to the Wanganui Region on the basis of its style. Barrow describes these particular godsticks as Archaic in style, and they certainly lack the elaborate Classic Maori decorations of the other godsticks he describes. However, there have been no grounds until now for arguing that they do represent an ancient style rather than simply a crude regional one. The Waitore head was not found *in situ*, but in the stream below the main artefact area of the gully. It is certainly reasonable to assign it to the dated assemblage, on both archaeological and stylistic grounds.

The large outrigger float (piece 525, 221 cm long, 16 cm max. width, Fig. 4) has a carefully worked butt end which could be designed to accommodate an extension of the float, or to lash on a lee board of some kind, or to hold a second outrigger boom. This end is cut straight across except for a protruding "male-end" knob-shaped spur. In section the outrigger is rounded triangular with the ridge side up and the base flat. Holes for a regular boom attachment occur on top of the float, roughly in the centre, which consist of two single vertical holes, in between which are a pair of holes that come into the top of the outrigger from the sides at about 45° and meet in the centre to form a V-section. The method of boom attachment to the float is the same as the Monks Cave and Te Horo outrigger floats (Adkin 1962), and this may turn out to be the standard New Zealand method. The float is not straight but curved inwards, presumably towards the canoe, and the base is slightly concave.

This piece may represent only half of the outrigger, the other back half having been joined by means of the projecting knob (now broken?) which served as a tenon. The reasons for thinking that this is only part of the float are that, (1) by comparison with the Te Horo outrigger (Adkin 1962) this float is about half the length but slightly wider, and (2) there is only one set of attachments for the outrigger boom (unless booms were lashed directly to the front and back ends of the float, which seems unlikely). An alternative explanation for the lack of more than one boom attachment is that the outrigger float had not been finished.

The canoe leeboard, stern- or prow-post (piece 8, 39 cm max. dimension, Fig. 7) has a slightly S-shaped section from top to bottom when viewed from the front. The small hole pierced through the rounded end, as if for the attachment of feathers, is one reason for arguing this might be a prow-post and not a leeboard.

The canoe bailers that have been modified into hook-like implements (weeders or, more likely, food hooks) are shown in Figure 8 (piece 10, max. dimension 31.5 cm; piece 11, 40 cm; piece 12, 26 cm).

The notched stick or batten (piece 9, max. width 2 cm, Fig. 4) is triangular in section and 183 cm long, flat on one surface and notched along the back ridge. It could have been

carried like a stick or spear, and since the notching is regular, it was probably ornamental rather than a counting device, e.g. a *whakapapa*. Alternatively this piece may have been a batten lashed to cover the gap between two boards. In this case the notching might be functional, to prevent the lashing from slipping longitudinally.

Piece 82, a thin plank (Fig. 9), seems a plausible candidate for the role of decking of a narrow canoe. It is 155 cm long, has a maximum width of just under 20 cm, and is 1.5 cm thick. One end tapers to a width of 5 cm. At present the wide end also narrows slightly, but this is the result of later trimming. The piece has a series of paired holes down the centre, though these are not precisely in line. This piece certainly would be suitable as decking for the end of a fairly narrow canoe or for a wide canoe with a narrow top. The holes show that something was attached on top of it or below it, the former being more likely, but it is hard to envisage what such attachments might be. The piece is thin, so it probably served mainly to keep out water rather than to support weight.

The anchor stones or sinkers at the site are usually large, the largest being nearly one metre long. They are usually made out of local sandstone. Most are waisted, either naturally or by grinding or chipping, and one large one has a hole pierced in one corner. None is smaller than 60 cm long, so they are quite distinct from the two line sinkers, which are small cobbles with notches flaked in the middle. Presumably they were either canoe anchors or weights for large nets or fish traps.

There are a number of pieces which are almost certainly canoe thwarts, particularly piece 6, which is an undecorated, rectangular-sectioned strut, 30 x 5 cm, broken at one end, with a hole at the other. In addition, there are several curved pieces which might be thwarts, or alternatively, handles for baskets or boxes (Fig. 9): 1. Piece 15 (40 cm long) is curved, decorated with three rows of notches on top, and has a hole and projecting tongue at each end. 2. Piece 13 is 45 cm long, straight with a semi-circular section and with raised knobs at each end. 3. Piece 16 is curved, 40 cm long, with two large notches cut in the outer or convex surface. 4. Piece 103 is curved, 25 cm long, both ends damaged, and has regular large notches on the outer surface.

Many small planks were found, sometimes with holes pierced in the end (Fig. 9). Some of them may have been spade blades, while others could have been seats for canoes. The ones with several holes could be parts of boxes. If canoe seats, they suggest a fairly narrow canoe, which fits the finds discussed by Barrow and Keyes (1966). The mean length of 13 intact planks is 36.6 cm, ranging from 28.5-39.0 cm.

The "box lid" (piece 14, 61 x 7.5 cm) is shown at the centre of Figure 7. It is rectangular, with a raised interior ridge, and has holes around the perimeter. If not a box lid, it could be the cover for a narrow opening in a canoe hull.

There was also a wedge (piece 22, 12 x 5 cm, Fig. 7, centre left) and a curious piece of unknown function (piece 37, 17 cm long, Fig. 7, bottom). Piece 84 was a food trough or bait box (44 cm long, Fig. 8), with a projection at one end and a hollow slot at the other, which could have been for pigeon snaring or for food, bait or drink.

At the bottom of Figure 8 are shown a number of slats with holes down the centre. More of these were found in 1978; they are too insubstantial to bear weight but could have been used to hold together decking, webbing, or thatching.

Other finished artefacts which are not illustrated in this paper include two wooden pounders (pieces 85 and 86), one of a very heavy wood, which closely resemble some of the "fern-root beaters" shown by Downes (1932b: Plate 3) from the Waverley site. Also from Waitore comes a hook or gaff (piece 2, max. dimension 65 cm), very similar to those found by Downes, particularly to the two smaller ones (Downes 1932b: Plate 4). Like them, it has an indentation on the exterior of the point, as though the curve was maintained by a lashing across to the main stem. Downes (1932a and b) made various speculations about the function of these implements — a gaff, a hook for hauling up crayfish traps, the spring for a rat trap or a grapple for canoe warfare. They could also be part of the attachment system for an outrigger float as in the Reef Island sailing canoe in the Auckland Museum.

There are numerous other pieces of worked wood ranging from logs with a few adze marks to stakes, poles and fine splinters. The poles and stakes could well be part of an outrigger attachment system and accompanying platform. There are a few chips of wood, but these are not common and wood shavings have not been observed. There is thus no equivalent to the wood-working "floor" reported from the Waverley site (Downes 1932a:50).

THE WAITORE SITE: SUMMARY

At present this collection is the oldest dated assemblage of wooden artefacts in New Zealand. These artefacts probably represent one contemporary assemblage, which has been dated to the 15th century A.D. Stylistically it displays an interesting combination of Archaic and Classic features (Mead 1975), and its culture-historical significance is discussed by Lawlor in the accompanying paper. Particular interest is attached to what seem to be the remains of an outrigger canoe of some structural complexity. The method of outrigger attachment is similar to earlier finds in New Zealand, and it seems that this may have been a standardised early New Zealand Eastern Polynesian design.

Functionally and stylistically this collection of finds has some notable resemblances to some of the finds from the nearby swamp at Waverley, and it is reasonable to suggest that they are of a similar age. The function of many of the pieces is not clear, although a considerable proportion seem to be related to canoes. A few of the pieces may have been deliberately broken, but the majority were probably broken accidentally or during regular use. These latter were probably thrown in the swamp simply as a way of disposing of rubbish; the former might have been intentionally buried.

It seems likely that the ancient swamp was in a gully slightly larger than, but not essentially different from, the present gully. The only associated settlement so far discovered consists of ovens in the dunes. It would be very interesting to find an associated settlement, since the swamp assemblage is very similar to the sort of debris one might expect from a typical dry-land Archaic site, with its adzes, drill points, chisels and fishhooks. It would thus be possible to link the swamp finds with the better known dry-land archaeological sequence.

One can suggest the following reconstruction of events. In the early 15th century, there was a narrow swampy gully set in dunes behind the beach by the Whenuakura river mouth. Outrigger canoes, probably for use at sea, were drawn up behind the beach. Prehistoric activity around the edge of this swamp resulted in artefacts and other debris being deposited on the floor of the swamp. Most of these pieces were broken or useless, and were probably thrown away. However, a few were intact, such as the outrigger float, and it is possible they were deliberately placed in the water for some reason. A decorated piece, perhaps the cover for the bow of a canoe, also ended up in the water, and may well have been deliberately broken. The absence (so far) of other pieces of canoe suggest that such pieces were normally re-used.

People camped by the swamp edge, and some of their cooking stones and firewood found their way into the water; they may also have fished for eels in the swamp. They seem to have brought various artefacts with them and roughly reworked some of these pieces on the site. Much of the debris may have resulted from carrying out repair jobs.

Some time later, this lake was filled in by moving sand, which by thus damming the stream probably formed or raised the two higher swamps that exist today.

Note: The artefacts from the Waitore site are (or soon will be) held in the Taranaki Museum, New Plymouth. Photographs of them are held by the Anthropology Department, University of Auckland. Copies of a full excavation report with a complete description of the artefacts have been placed in the Library of the Auckland Institute and Museum, the Library of the Auckland University Anthropology Department, and the Taranaki Museum.

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