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STONE WALL DEFENCES AND STONE-FACED PITS

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Prehistoric stonework in the form of heaps, rows, lines, platforms, pavements, drain covers, retaining walls and free-standing walls, have been described from many parts of New Zealand, especially in the north (Fig. 1), e.g. Three Kings, Whangaroa, Kaikohe-Bay of Islands area, Waipoua, Whangarei, Poor Knights, Hen and Chickens, Great Barrier, Little Barrier, Arid Is, Waitakere Ranges, Auckland Isthmus, Pirongia, Cape Colville, Great Mercury Island, Ohena Island, Whale Island, Aldermen Islands, New Plymouth, East Cape, Lake Taupo, Waitomo, Gisborne, Wairarapa, Kapiti, D'Urville Island, Heaphy River, Kaikoura, Waitaki River and Stewart Island. The majority of these stone structures are thought to have been associated with the clearing of stony ground for cultivation and some had religious significance.

Stonework, such as stone-faced terraces, retaining walls and free-standing walls, associated with pa sites are however far less common. Such features have been recorded from a few localities in New Zealand (see below), but their use in defence has not been stressed. Use of stone in the construction of storage pits, for stone-facing or retaining walls around the sides, has seldom been recorded in New Zealand (see below). Defensive stonework and stone-faced pits deserve more general recognition as part of the suite of stone structures built by the prehistoric Maori.

Stone wall defences

Previous descriptions. Probably the best known example is Te Koru Pa, an Historic Reserve near New Plymouth, described and illustrated by Best (1927:205-11) and Prickett (1980:33-36), where the pa defences include a number of stone-faced terraces and stone retaining walls (up to 5 m high), made from rounded stones obtained from the adjacent Oakura River. Stone retaining walls and other stonework existed within many of the pa on volcanic cones of Auckland Isthmus (Sullivan, 1972:156), but almost all of these features are now destroyed. Fenton (1879) certainly believed that these walls were used in defence, for he stated that the Waiohua "... held pa, or positions of defence, formed by large ditches, and protected by stakes, and in some places by stone walls, ..." on many of Auckland's cones.

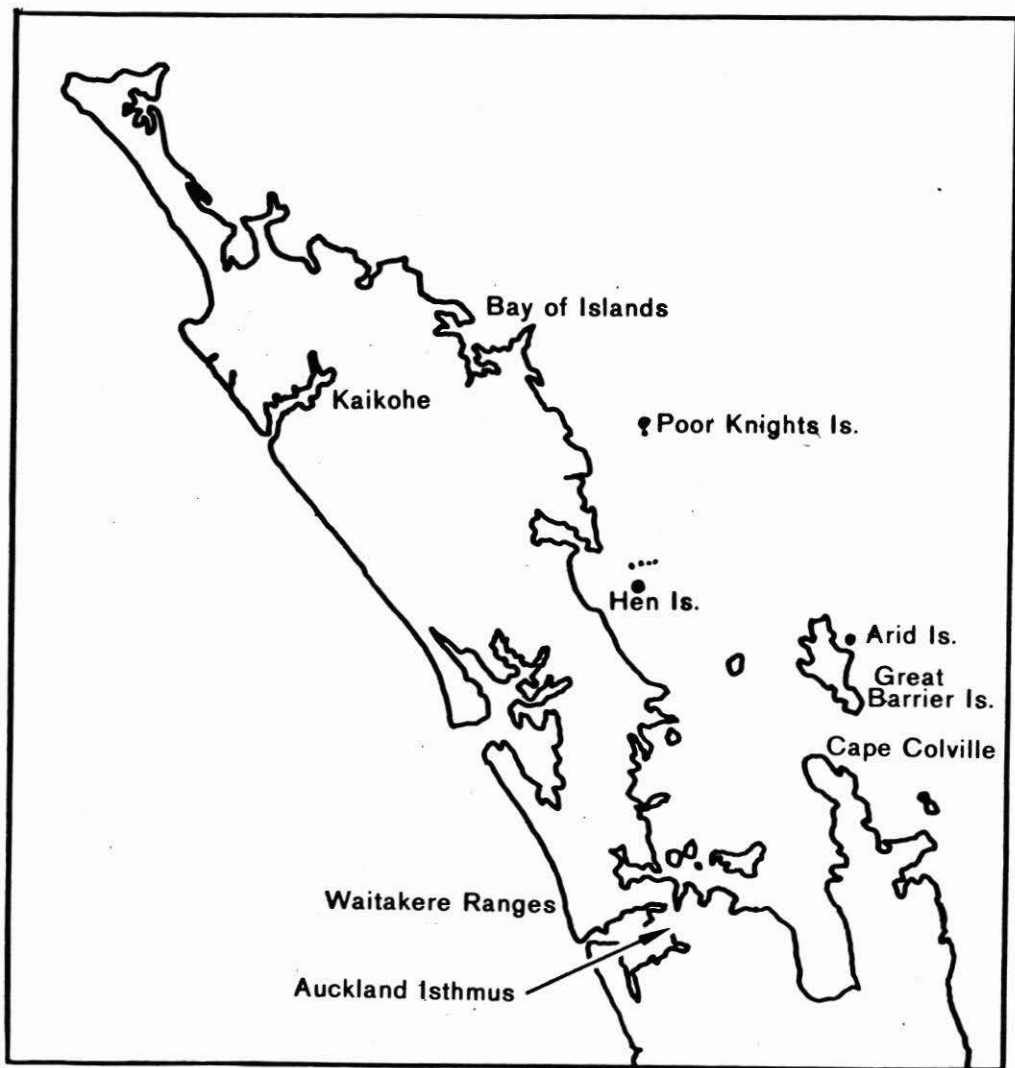


FIGURE 1. Localities in northern New Zealand where stone wall defences or stone-faced pits exist.

Several pa with stone-faced scarps and stone retaining walls have been briefly recorded near Cape Colville (Best, 1927:215), on Great Barrier Island (Ramsay, 1970; Weetman, 1889), on Whale Island (Hayward, 1971) and at least three more in the Kaikohe-Bay of Islands area (Best, 1927:308, 335; Phillips, 1980). One of these last three pa has "... four defensive terraces, which are supported by vertical stone retaining walls ... (that) ... vary in height from 1 m to 1.7 m ... The summit is defended by sloping and vertical stone retaining walls on the southern face and stone-faced scarps elsewhere" (Phillips, 1980:160).

Two pa in the Waitakere Ranges have stone retaining walls (Hayward and Diamond, 1978:74), but only on one of these sites (N41/135), where walls (up to 2 m high) border three large terraces, is the stonework thought to have had a defensive role.

Hen Island and Poor Knights Islands. 1. N17/47, Poor Knights (Fig. 2). A small pa, situated high above the north end of Shag Bay, Tawhiti Rahi, on a rocky peak with cliffs on three sides, has stonework incorporated into its defences. The site is divided in two by a ditch (2.5 m wide, 2-3 m deep) that cuts across the ridge. This ditch is unusual, as the walls on both sides are of solid rock and it appears that the Maoris utilised existing joints and fractures to assist in the removal of rocks to enlarge what was already a natural depression. Outside the ditch are two terraces, partly bounded by stone-faced scarps and retaining walls.

The defensive part of the pa, behind the ditch, is built over a 30 x 8 m knoll composed almost entirely of solid rock broken into large blocks along fracture planes. Two terraces (each about 20 m²) have been created by the construction of stone retaining walls which would also have played an important part in defence. The retaining wall around the south-eastern side of the lower terrace is an extension of the inner wall of the ditch. It is 1.3 m high and passes upwards into a 0.4 - 0.7 m high free-standing wall around the terrace edge (Plate 1, Fig. 2 A-A', B-B'). The second terrace is 4 m higher than the first and has a stone retaining wall (up to 3 m high in parts) around two sides (Plate 1, Fig. 2 A-A', C-C'). The only way to reach the upper parts of this small pa is to climb this second, partly defensive, retaining wall. On top of the rocky knob, several small terraces have been built up within natural hollows between large blocks, in places with the assistance of small retaining walls.

2. N17/38, Poor Knights (Leahy and Nicholls, 1964, site 1). This small pa is located on a cliff-top point on the north-east side of Tawhiti Rahi. The rocky point is cut off from the flat top of the island by a

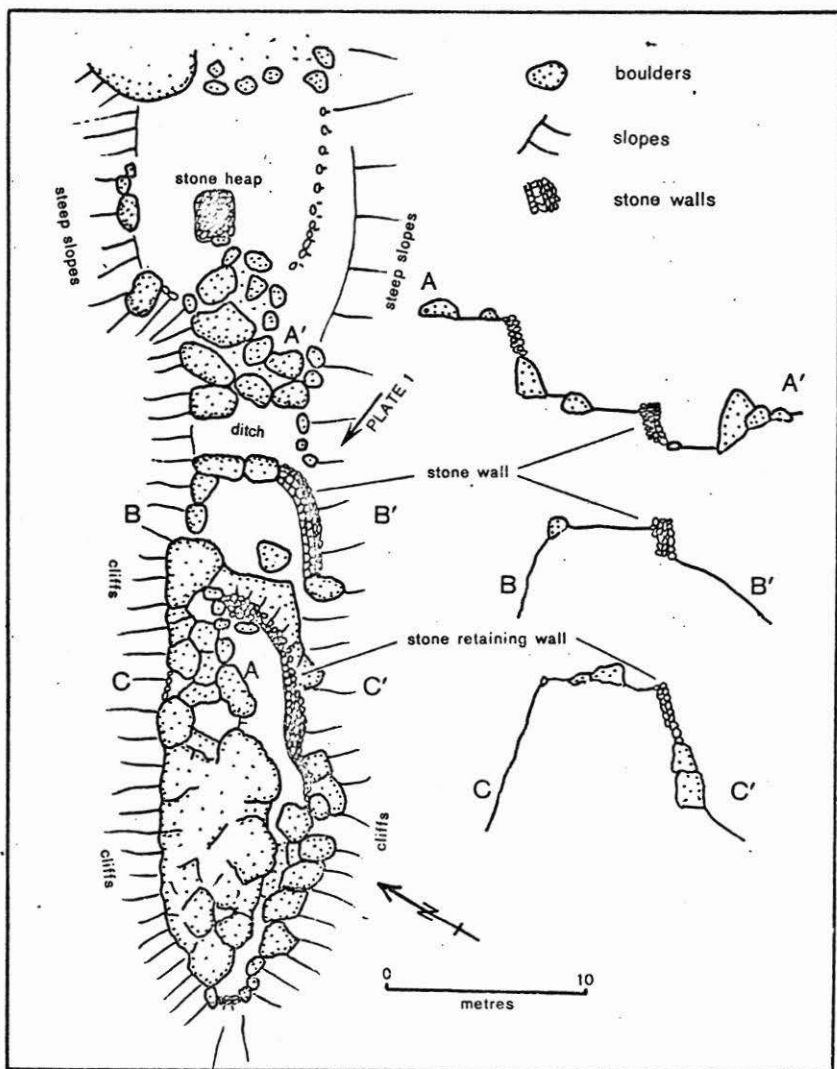


FIGURE 2. Plan and sections of N17/47, Tawhiti Rahi, Poor Knights.

30 m long, subvertical, stone retaining wall (1 to 2.5 m high) that would have proved a considerable obstruction when topped by palisades. Unfortunately any internal structures within the stone wall defences have been destroyed by the erection of a small lighthouse and construction of a helicopter landing pad.

3. N17/13, 16, 24, 25, Poor Knights (Leahy and Nicholls, 1964; Lawlor, 1977). These four small pa are all built on high rocky peaks on Aorangi Island. They have defensive stone retaining walls and small terraces constructed high up among and around the peaks' rocky surfaces, and are very similar to N17/47 on adjacent Tawhiti Rahi.

4. N25/53, Hen Island (Hayward, Moore and Newman, 1978: 148). Baldy, a large rock knob surrounded on three sides by 30-50 m high cliffs, appears to have been used as a pa, for the steep, narrow ridge on the fourth side is obstructed by a 1.5 m high, subvertical, stone retaining wall built across the ridge about half way up. The wall has a narrow terrace along its top, and if a palisade had been erected on this, all access to the 50 x 20 m flat top of the knob would have been cut off.

Stone-faced pits

Pits with their sides faced with stones or partly built up by stone retaining walls have been previously recorded from the Waitakere Ranges (Hayward and Diamond, 1977:98) and Hen Island (Hayward et al., 1978: 145) but not described in detail.

The only descriptions of stone-faced pits known to the author, are of pits at Mt. Wellington, Auckland. Several pits on the crater rim, excavated by Janet Davidson in 1971-72 "... were lined with walls of neat scoria blocks " (Fox, 1977:10). Taylor (1962) described six rectangular pits from near the base of Mt. Wellington - three have one inside face built up with scoria blocks, two have two sides faced and one has three scoria-faced sides. The walls are 0.3-1.8 m high and the scoria blocks average 0.15 x 0.1 x 0.05 m.

1. N41/135, Te Henga, Waitakere Ranges (Hayward and Diamond, 1978: fig. 22). This pa has been built on a naturally stony hilltop with patches of hard rock at or near the surface. It has four rectangular pits along the eastern edge of its 30 x 13 m platform. The platform has been built up 1-2 m above the natural ground level along this eastern side and the pits (varying in size from 1.5 x 1 x 0.5 m to 5 x 2.5 x 1 m) all lie within this artificially raised portion of the platform. All the pits have vertical, stone retaining walls lining their inside faces (Fig. 3). The walls are made with fairly rough blocks of andesite (average size about 0.2 x 0.15 x 0.1 m).

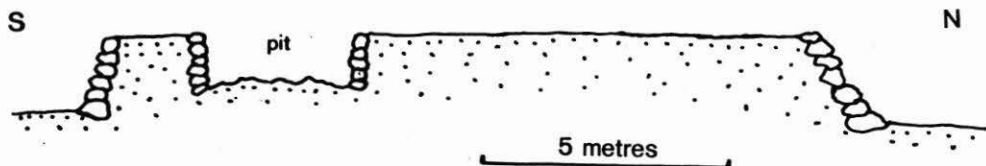


FIGURE 3. North-south cross-section of platform on N41/135, showing defensive retaining walls and stone-faced pit.

Without excavation it is not possible to determine whether the basal portion of each pit (now filled in with leaf litter and soil) had been dug down into the original stony surface or not.

2. N25/50, Hen Island (Hayward et al., 1978: fig. 7). This cluster of terraces and four rectangular pits (two indistinctly preserved) is located on a rocky knoll on the main ridge and is surrounded by large boulders. The two pits (5 x 2.5 x 0.6 m, 3 x 2 x 0.5 m) on the uppermost terrace have stone retaining walls (made of andesite blocks, averaging 0.3 x 0.2 x 0.2 m) around all sides, and the terrace level appears to have been raised around them.

3. N25/46, Hen Island (Hayward et al., 1978). Two, of a cluster of four rectangular pits (each 4 x 2.5 x 0.6 m), dug into the crest of a ridge, have their sides faced with stones. Unlike the two previous examples the terrace level does not appear to have been built up around them.

4. N30/260, Arid Island (Hayward, Moore, Mathews, in prep.). A single pit (2.5 x 1.5 x 0.3 m) on the crest of Moturoa Point has stone-facing on two sides.

Discussion

Prehistoric Maori stonework is not always associated with horticultural areas. Stone walls, used at least in part for defensive purposes, are present in pa in a number of places, but especially in the north of the North Island on the scoria cones of the Auckland and Kaikohe volcanic fields and on rocky knobs in other, somewhat older, volcanic areas such as the Waitakere Ranges and offshore islands. In these particularly rocky situations, often where pits could not easily be dug into the ground, stonework has sometimes been used to build retaining walls to artificially raise the ground level and form pits. In places pits dug into stony ground have their sides faced with stones, possibly to help prevent collapse.

Acknowledgements

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NGAHUHA PA. Removing pine trees. In the foreground are Stan Bartlett, Peter Milsom, Richard Cassels and Ian Page (Northern Advocate).



STONE WALL DEFENCES, Plate 1. Defensive stone retaining walls on N17/47, Tawhiti Rahi, Poor Knights Islands.