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EXCAVATIONS AT ROTO-O-RANGI REDOUBT (N65/87), WAIKATO

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In August 1986 the N.Z. Historic Places Trust issued an authority to Waipa County Council to build a reservoir 30 m from Roto-o-rangi redoubt in the Waikato (Fig. 1). The redoubt, in the shape of a star, is situated on a prominent hilltop about 10 kms south of Cambridge (grid references: NZMS1 N65/951238; NZMS260 S15/253553). Around the south end of the hilltop is a scarp and terrace which initially appeared to be part of an earlier fortification. The Trust required an archaeological investigation of the reservoir site for two reasons. First, because of the close proximity of the reservoir to the redoubt, there was the possibility of damage to archaeological remains relating to the redoubt. Second, if the redoubt had been built within an earlier Maori fortification, there was the possibility of finding out when the earlier fort had been constructed. The investigation was carried out on September 6th and 7th 1986.

Roto-o-rangi was built in 1873 by the Armed Constabulary. Its construction followed the murder of a farm labourer caught on the Maori side of Aukati confiscation line (Beer and Gascoigne 1975).

According to Vennell (1938:45), the earthworks (Fig. 2) were originally substantial parapets more than 10 to 12 feet (3-4 m) above the bottoms of trenches. They are still well defined today although not as prominent. Within the earthworks were an 18 by 15 ft (6 x 5m) weatherboard building, a stable, a messroom, and a cookhouse with an adjoining store. The redoubt was large enough to accommodate 60 or 70 men although it was first garrisoned with only 28.

A well was sunk within the redoubt some 110 ft (34m), but no water found. There appears to have been no shortage of liquid refreshment. C W Vennell (1939:144) records that large numbers of empty gin bottles were found when the slopes below the redoubt were later ploughed.

Method of Excavation

The reservoir was to be located on the south side of the redoubt between the trenches and the scarp and terrace (Figs 1 and 2). To reach it, a roadway was proposed to cross the scarp and terrace from the west. Water pipes were to be laid

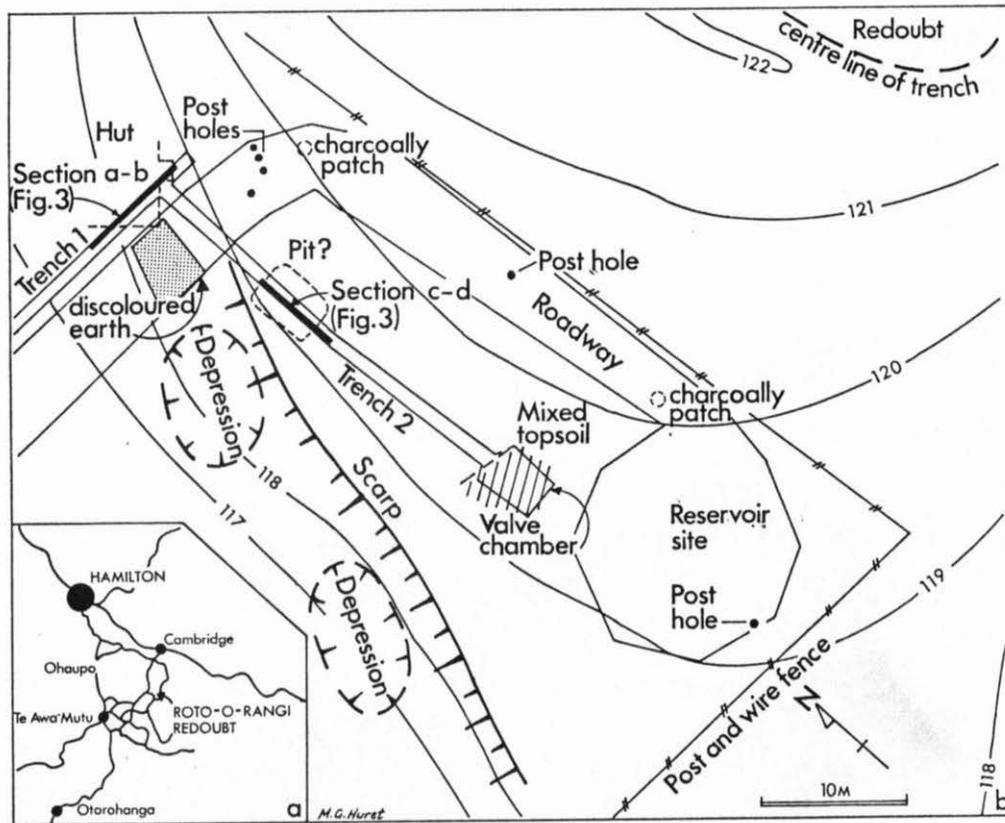


FIGURE 1. Map of proposed reservoir site. (a) Locality map. (b) Reservoir site, roadway and pipe trenches showing archaeological remains found. Contour height = 1m. Height in metres above sea level. Note mixed topsoil shown cross-hatched.



FIGURE 2. Roto-o-rangi Redoubt. A-B-C = scarp around south side of hill, D = location of proposed reservoir, D-E-F = line of access road. Photo: Waikato Museum of Art and History (M564/2), K. Sprengers.

in a trench (60 cm wide and 1-2 m deep) alongside the roadway, and the trench was to end in a hole (ca 5 m x 2.5 m x 1.5 m deep) dug to accommodate a valve chamber.

The archaeological investigation was planned to coincide with the earthmoving. Machinery could then be used to best advantage to examine the site stratigraphy and clear topsoil from the roadway and reservoir site. The pipe trenches and hole were dug by a mechanical excavator fitted with a 60 cm wide toothed bucket and then cleaned down using spades and trowels. The roadway and reservoir site were stripped of topsoil by the excavator fitted with a 1 m wide smooth-edged bucket. The exposed surface of the subsoil was then cleaned down with spades.

Results

Stratigraphy

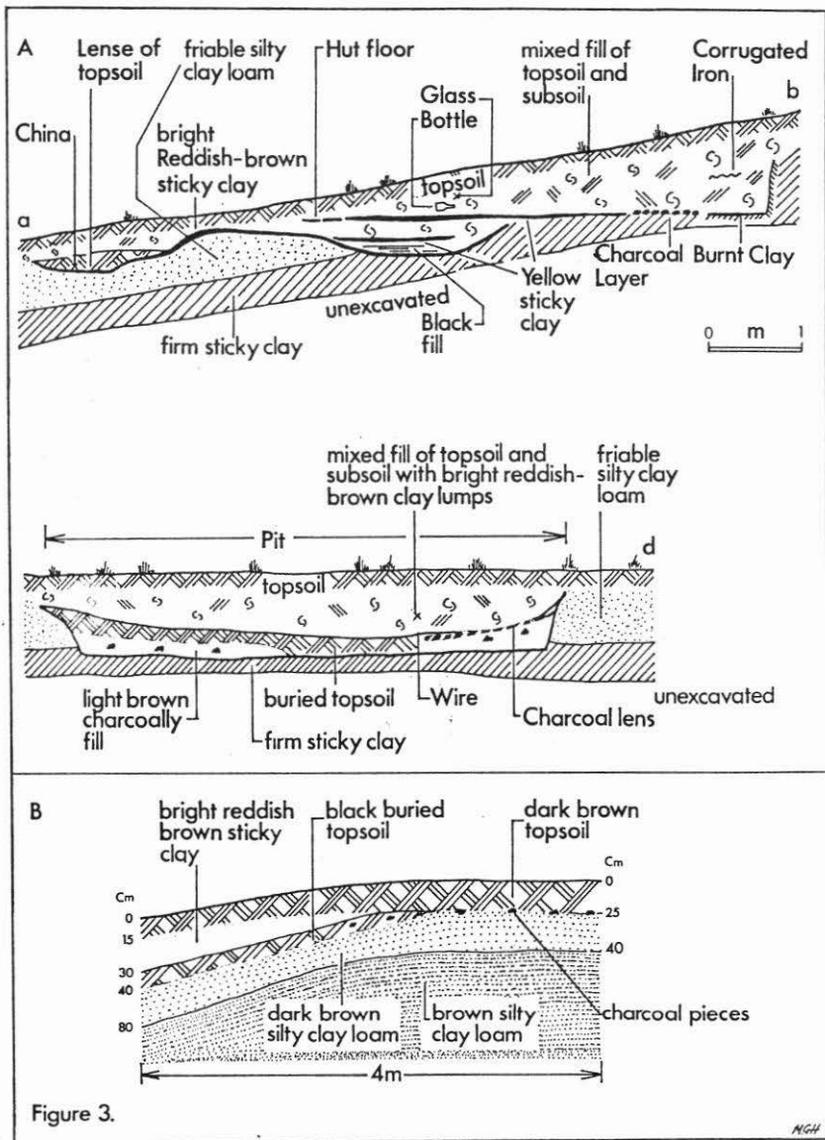
The natural stratigraphy is layers of weathered airfall volcanic ash. A representative section from Trench II (Fig. 1) is:

cm	Description
0-20	Brownish black friable silt loam (topsoil)
20-45	Dark brown friable silty clay loam
45-80	Brown friable silty clay loam
80-115	Dark brown extremely firm sticky clay (buried topsoil)
115+	Dark reddish brown extremely firm very sticky clay

From the ground surface to about 0.8 m depth are friable loams which are fairly easy to dig. Below about 0.8 m depth are extremely firm, sticky clays, which are very hard to dig. The clays varied in colour with depth and in the bottom of Trench I (Fig. 1) the clay was a distinctive bright reddish brown colour.

The friable loamy layers were disturbed by human activity. Identifiable features were the remains of a hut, a pit, several postholes, two charcoally patches, and an area of mixed soil that had probably been a garden (Fig. 1).

The sticky clays were hard to dig, even with metal spades. Nevertheless, two distinctively-coloured sticky clays (bright reddish brown and yellow) were out of stratigraphic sequence. The bright reddish brown clay overlay a thin black topsoil formed on friable clay loam in the vicinity of a patch of charcoal (II, Fig. 3B). The clay also formed part of the mixed fill of the pit (c-d, Fig. 3A), and it overlay friable loam adjacent to the hut floor (a-b, Fig. 3A). A layer of yellow clay, up to 15 cm thick, formed the hut



Stratigraphic Sections. A. In pipe trenches: a-b = section with hut floor (Trench I, Fig. 1); c-d = section with pit (Trench II, Fig. 1). B. In side of access road, showing redeposited bright reddish brown sticky clay overlying black buried topsoil formed on friable clay loam (not to scale).

floor.

We consider it unlikely that the prehistoric Maori would have bothered to dig the sticky clays, especially with the wooden tools available to them. It is more likely the clays were dug using metal tools. The reddish brown clay in the pit is in the same layer as rusty wire and is younger than European contact. The source of the clays is probably the deep holes such as the well and trenches dug when the redoubt was built.

Archaeological Remains

Hut

The hut (a-b, Fig. 3A) was situated on the terrace. The downhill end of the yellow clay floor extended out over the fill of an earlier depression, the uphill end was benched in firm clay. At the uphill end the yellow clay merged with a layer of charcoal and the firm clay had been reddened by fire (b, Fig. 3A).

The benching and yellow clay were seen in both sides of Trench I, the charcoal and burnt clay only in one side. Although other explanations may be possible, the disposition of the burnt clay, charcoal and yellow clay (Fig. 4) is consistent with a hut floor, with a fireplace recessed into the scarp (Fig. 4) in a manner not uncommon in colonial New Zealand (e.g. Drummond and Drummond 1967:72).

The layer which covered the floor was a mixture of topsoil and subsoil containing bottles, broken glass, china and pieces of corrugated iron. It rested directly on the yellow clay and there was no sign of topsoil formation either within it or within the yellow clay. The layer is therefore likely to have been deposited soon after the hut fell into disuse.

The layer was visible in the surface of the roadway. It was left intact and the roadway built up over it, so that any features under the roadway should still be undisturbed.

Two large depressions south of the roadway (Fig. 1) suggest the possibility of other huts on the terrace.

Pit

The pit was exposed in the sides of Trench II (c-d, Fig. 3A). It had been dug through the friable silty clay loam, and into the top 10 cm of the firm clay. It contained two layers of fill separated by a poorly-formed buried topsoil containing two broken stones. The lower layer was a light

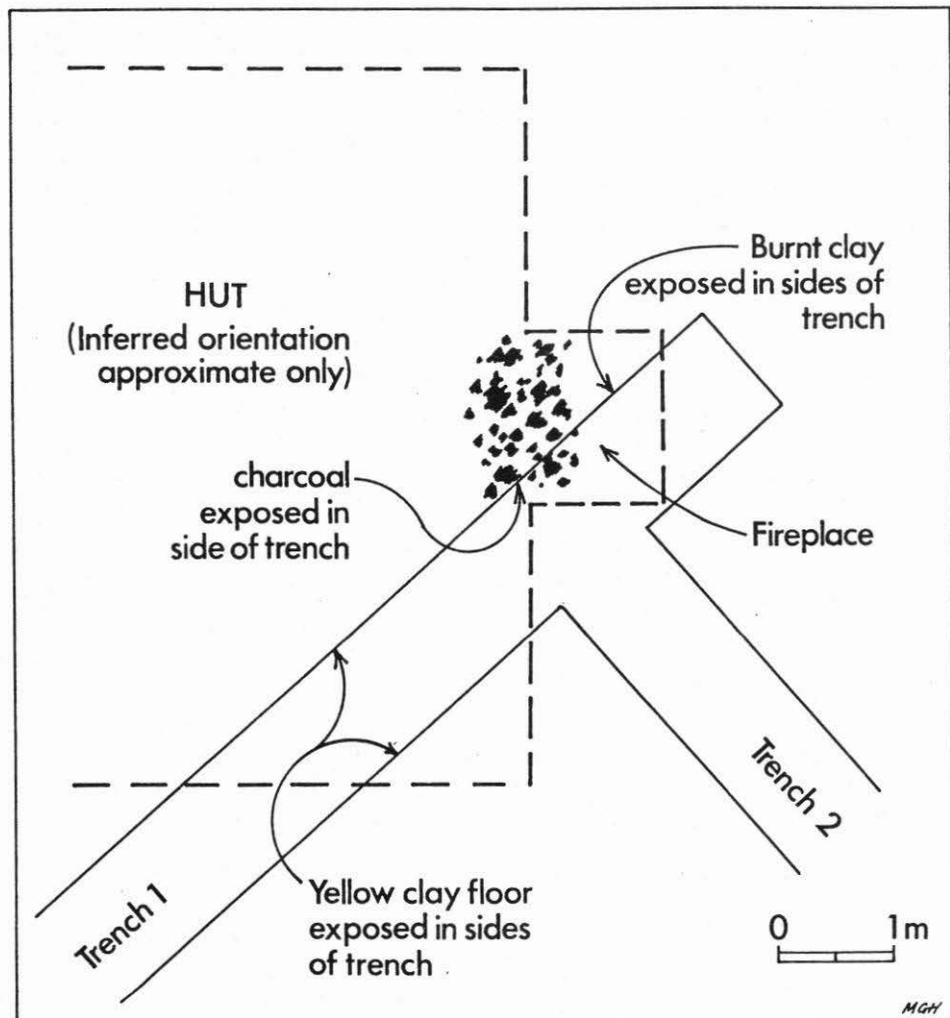


FIGURE 4. Diagram showing inferred hut floor with fireplace to explain the occurrence of burnt clay, charcoal and yellow sticky clay. (Scale approximate)

brown charcoally deposit. The upper layer was somewhat looser mixture of topsoil, subsoil, and lumps of the bright reddish brown clay. A piece of rusty wire was found at the bottom of the upper fill layer (Fig. 3).

Postholes and Stakehole

The postholes and stakehole were found on the roadway and reservoir site after the topsoil was stripped off (Fig. 1). The postholes were filled with loose dirt and ranged in size from 15 x 20 cm x 70 cm deep down to 5 x 5 cm x 30 cm deep. Five of the postholes and the stakehole were in a group, two of the postholes were isolated occurrences (Fig. 1). The postholes were not particularly well-defined and there is the possibility that some may have been formed by root action or by burrowing animals.

Charcoally Patches

The charcoally patches were both on the roadway (Fig. 1). They were areas of charcoally soil ca 50 cm in diameter that extended 2-3 cm into the subsoil. One showed a zone of reddening in the soil around it indicating that a fire had been burnt in situ (I, Fig. 1). The other showed no such reddening and the charcoally soil may have some other origin (II, Fig. 1).

The latter charcoally patch was near the group of 5 postholes and 1 stakehole. Three of the postholes formed a row on the northwest side of the patch but apart from this, the postholes, stakehole and charcoally patches form no sensible pattern.

Mixed Soil

The mixed soil was exposed in two sides of the hole excavated for the valve chamber. The topsoil had been mixed with charcoal and burnt stone and deepened to 35 cm on the west side of the hole, and 25 cm on the east side. Mottles the same colour as the subsoil were present 15 cm above the lower boundary of the topsoil. There was no sign of mixing on the north side of the hole, mixing was poor in the southeast corner, and was not seen at all in the edge of the reservoir site. The area of mixed soil was possibly only a little wider than a hole (Fig. 1).

The soil was fairly uniformly mixed and there was no sign of root disturbance below it, which would appear to rule out tree-throw as a cause of the mixing. Although charcoal was seen in the topsoil at several places on the site, it tended to be most abundant in the mixed soil. The depth of mixing is most likely due to gardening. There is, however,

no indication of when the mixing occurred or, if a garden, what plants were grown.

Discussion

Despite the inference mentioned in the introduction of Roto-o-rangi having been a former Maori fortification, no unequivocal evidence of Maori occupation was found. Indeed evidence of any occupation was sparse. The hut floor, inferred from remains found in Trench I, appears most clearly to be of European origin by reason of its stratigraphic context. There is no clear evidence, however, for the ages of the pit, postholes or charcoally patches.

The buried topsoil in the pit indicates a lapse of some time between the deposition of the first layer of infilling, and the second layer of fill containing the bright reddish brown clay lumps and the rusted wire. If the second layer of fill dates from the time of the redoubt then the pit could have been dug many years earlier, possibly in prehistoric times, but if the second layer fill is a more recent deposition, then the pit may only have been dug at the time the redoubt was built. There is no indication of the size or shape of the pit which might help to indicate its purpose and date it.

The mixed soil is similarly undated although in our opinion the soil, if it is a garden soil, is too heavy for kumara growing and better suited to European crops.

The scarp and terrace are older than the hut floor. From the section in the side of Trench I (Fig. 3A), the terrace tread was used for some other activity which resulted in two shallow depressions below the level of the hut floor, but these shed no light on the origin of the scarp and terrace.

If the redoubt was on a former pa delineated by the scarp and terrace, then considering that some 450m² were excavated within the scarp, we would expect appropriate structures and artefacts, particularly obsidian flakes, to have been found. Even though outside the redoubt trenches, a hut, bits of china, bottle glass and wire were recovered. Although no firm evidence for the origin of the scarp and terrace were found, the remains recovered, in our opinion, support the possibility that the scarp and terrace are outworks of the redoubt.

Conclusions

1. No clear evidence of Maori occupation was found.

2. Archaeological remains include: a hut floor and pit, both exposed in the side of the pipe trench; two charcoally deposits and 7 postholes on the access road and reservoir site; and a mixed soil, possibly a garden soil, exposed in the side of the excavation for the valve chamber. The hut floor is possibly late 19th Century and may date from the time of the redoubt. The age of the other features is unknown but they too are probably of similar age.

3. The scarp around the south side of the hill is unlikely to be from a former, prehistoric fortification and is probably of European origin.

Acknowledgements

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