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A RUA ON THE KAIMAIS : EXCAVATION REPORT

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Abstract

A subterranean pit, comprising a box-like chamber entered by a short shaft, was excavated on the Kaimai ranges near Tauranga. The pit floor was lined with tree-bark and the entrance was probably originally covered over and supported by a lintel and posts. A minimum age of about one hundred years is postulated and aspects of the pit's construction and function are examined.

LOCATION

The pit, part of site N67/25, is situated 17km southwest of Tauranga at an altitude of about 150m in farmland on the eastern slopes of the Kaimai Range near the main Hamilton - Tauranga highway. The site includes a few small terraces and two or three collapsed rua. The excavated rua lies about a quarter of the way down the north-western face of the ridge on which the site is located. Much of this ridge is covered in a soil which contains charcoal and pumice fragments to a depth of 30cm and which may be agricultural in origin. Only two other sites in the vicinity have been recorded in the NZAA Site Recording Scheme files, but much of the area near N67/25 shows signs of Maori occupation, including shell midden, terracing and scattered unfilled rua, which are sealed over by turf but occasionally broken open by stock and farm vehicles. The site lies about halfway between two pa (N67/51 and N67/52) which could have been among those built by the Ngaiterangi shortly before the battle of Gate Pa in 1864 (see Cowan, 1922).

ANALYSIS OF EXCAVATION

Copies of the detailed excavation notes, plans and sections have been deposited with the NZAA's Bay of Plenty and Central filekeepers.

1) Entrance

The pit entrance is cut into the southeastern corner of a small terrace at least 1.5m square. Both pit and terrace are oriented approximately north - south and are cut into the side of a ridge which at this point slopes approximately diagonally across the line of the pit. On the northern and western sides the terrace and hillside slope gently away from the entrance (Pl.1).

Entry to the pit is through a steeply-sloping, effectively vertical, shaft on the western edge of the pit. This shaft is about 1.2m deep and bells out slightly in its lower half, where it becomes continuous with the body of the pit. The entrance itself is about 50cm square and surrounded by a level shelf 10 - 30cm wide (Pl.2). A vertical bank, part of the back scarp of the terrace, rises up to 60cm from the entrance and is slightly undercut by the eastern and southern edges of the shelf. A deep stake-hole (5cm in diameter) is cut into the middle of the shelf in front (west) of the entrance. In the northwestern and southwestern corners of the shelf are two slight depressions which form convenient footrests when entering and leaving the pit. It seems likely that the shelf was constructed both to facilitate access to the pit and as a support for a square cover which could be placed over the entrance and secured by

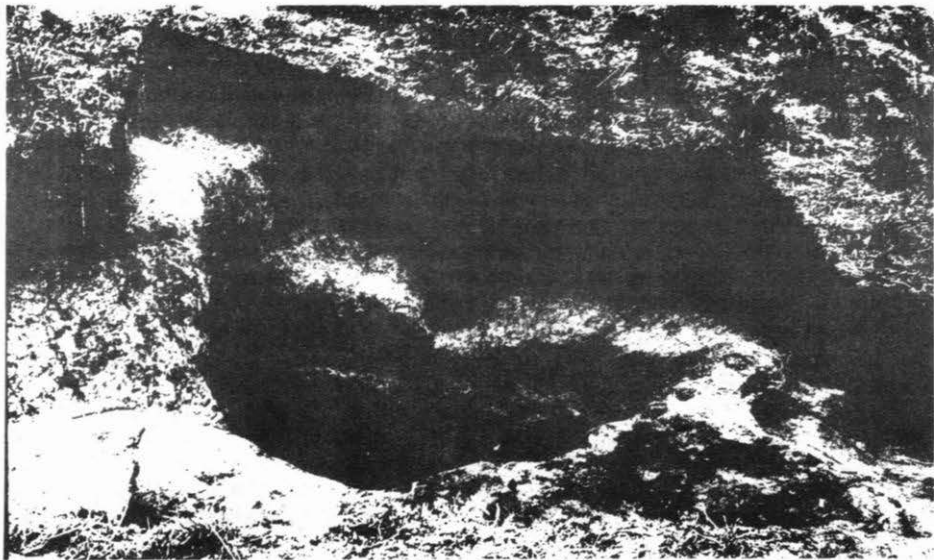


Plate 1 - View of pit entrance and surrounds from the north.
Length of facing baulk, 1.5m.

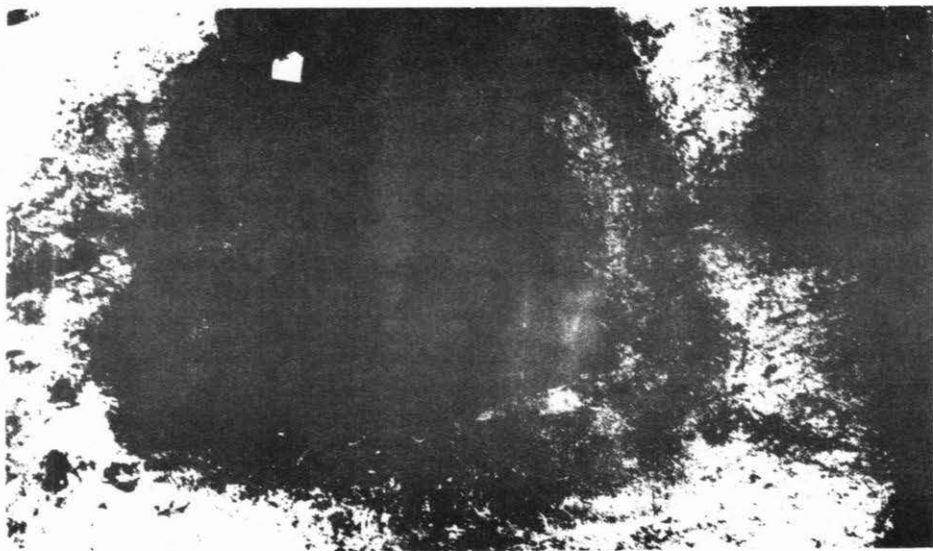


Plate 2 - The pit entrance from the west, showing shelf
around entrance and stakehole (arrowed). Scale
shown is 5cm square.

a small stake. No trace of a substantial wooden cover was found during excavation, and examination of the mixture of black soil and charcoal blocking the entrance revealed no identifiable plant remains except for bracken (*P. Smith, per . com.*). Presumably the entrance had last been covered over with soil and vegetation which subsequently burnt in situ.

Two oval postholes, measuring about 16x13cm and about 20cm deep, were found in the northwestern and southwestern corners of the base of the entrance shaft (Fig. 1). These slope downwards and outwards toward the western wall of the shaft and could have contained posts which ran up and parallel to the northern and southern sides of the shaft, leaning forward (but not inwards) to support a putative lintel at the top (eastern) edge of the entrance (Fig. 2). Excavation revealed no evidence of a lintel but the angle of the postholes is such that when extrapolated they meet the top edge of the entrance where it bulges outwards and could be in need of support to prevent collapse. A lintel at this point could also have served to support an entrance-cover.

No evidence of drains to prevent surface water running into the pit was uncovered, although these could exist outside the excavated area.

2) The Body of the Pit

The pit is cut into a yellow friable sandy free-draining clay which forms the walls and ceiling. This porous clay merges into a greyish sticky poorly-draining clay which contains lumps of soft pink rhyolite rock, and it is the top surface of this poorly-draining clay which forms the pit base.

Water poured to a depth of 4cm into a test hole cut into the pit bottom took more than five hours to drain away. In contrast, water poured into a similar test hole cut into the surface of the upper porous clay drained completely within one minute.

The interior of the pit appears to have been very carefully formed. The bottom is almost perfectly level, the sides are vertical and the height of the chamber is fairly constant. The intersections of walls, floor and ceiling are clean and right-angled while the surfaces are even and carefully finished. A bladed tool, possibly an adze or a narrow-bladed spadelike implement with a total length of no more than 40 - 50cm, has left rounded grooves (5 - 7cm wide and 0.5 - 1cm deep) on the walls and ceiling. On the upper part of the walls, the strokes of this tool have been made upwards into the ceiling as well as horizontally. The north wing of the pit is noticeably smaller and less carefully cut than the south wing (see Fig. 1).

The pit would appear to have been dug by first sinking a shaft into the ground surface at the rear of the terrace and then working forwards (east) and outwards (north and south) from the bottom of the well to form a rectangular underground chamber partially incorporating the lower half of the original shaft. The general appearance of the pit is similar to that described by Smart (1962) except that it is entered vertically rather than horizontally.

3) The Pit Floor

The pit base, consisting of the sticky poorly-draining clay described above, is pocked and lumpy as if formed with a pointed tool rather than with

Fig. 1

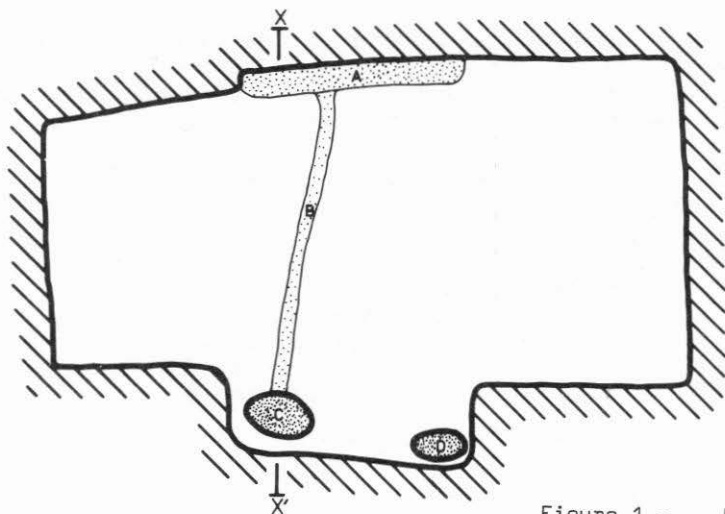


Figure 1 - Plan of pit bottom.

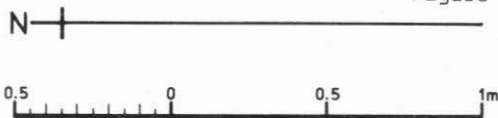
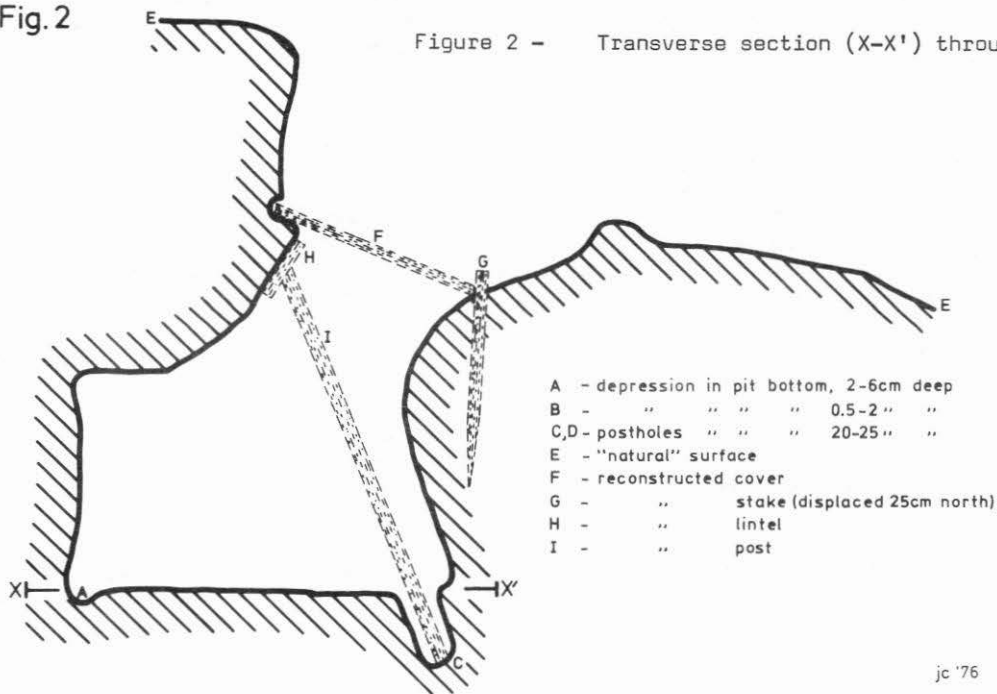


Fig. 2

Figure 2 - Transverse section (X-X') through pit.



- A - depression in pit bottom, 2-6cm deep
- B - " " " " 0.5-2 " "
- C,D - postholes " " " 20-25 " "
- E - "natural" surface
- F - reconstructed cover
- G - " stake (displaced 25cm north)
- H - " lintel
- I - " post

an adze or a spade. Two shallow grooves (see Fig. 1) were noted in it, but their function was difficult to determine. One, against the back (east) wall, could simply be the result of overenthusiastic digging during the pit's construction, while the other, running from the entrance well to the back wall, could be a depression formed by a stick or post which lay on the pit bottom and was later removed. It is unlikely that either depression could function as a drain.

In view of the poorly-draining nature of the pit base, it is scarcely surprising that it should have had a lining. The pit floor proper appears to have been prepared by covering the puggy basal clay with a layer 1 - 5cm thick of the soft friable soil through which the body of the pit was cut. Overlying the soft soil, a layer of single thin flat sheets of bark, mostly in scattered fragments, but including some pieces measuring up to 10 x 15cm, was encountered. This bark is almost certainly not the remains of a wooden flooring, but appears to have been laid down in flat pieces which could have functioned as a semi-waterproof lining. The earthen flooring layer and bark were thickest in the centre of the pit, beneath the entrance. The bark is probably that of a gymnosperm and may be Kauri (*Aqathis australis*) (Dr. A.E. Orchard, pers. com.). Scattered pockets of this tree still grow in the region.

The thin bark lining was overlain by a layer of black humus 1 - 5cm thick, the only identifiable material in which was bracken and young, lightly burned twigs (P. Smith, pers. com.). In places, the soil of the pit floor beneath was stained orange, almost certainly as a result of the burning of organic matter in the pit.

4) Human Remains

A complete human skeleton originally lay exposed on the floor of the pit. While some of the bones had been disturbed or scattered by the sheep which fell into the pit, it seems that prior to this event the skeleton was lying articulated in the southeastern corner. It was in a semi-crouched position with one leg extended, giving the impression of a body having been roughly bundled into the pit. The bones are those of a male about 1.72m (5'8") in height and aged around thirty. The right parietal bone of the skull, the left humerus and the mandible may have been fractured at about the time of death (Dr. D. Taylor, pers. com.). The teeth are moderately worn, a marked "fernroot plane" is evident and the jaw is of the semi-rocker type (Dr. P. Houghton, pers. com.).

5) Age

The pit is, as noted above, only one of a number of rua which are to be found in the vicinity. In view of their apparently similar construction and the fact that they have all been left open, although sealed over, it is assumed that these rua were all abandoned at about the same period of time and that the Maori who constructed them did not return to the area. Such an occurrence would fit in with the events which took place in the Tauranga region after the battle of Gate Pa in 1864. The Kaimai area was part of that initially confiscated by the New Zealand Government and then returned to the Ngaiterangi, after which most of the area was bought from the Maori and settled by European farmers (Gifford and Williams, 1940; Dinsdale, 1960). It is therefore probably safe to say that the pit dates at the latest from the 1860's.

SPECULATIONS ON FUNCTION AND USE

In the process of excavation, the writer has virtually replicated the pit's construction and has experienced some aspects of it which may be worth recording. It is here assumed that the pit was used by the Maori for storing rootcrops - probably kumara, potato or fernroot. Since the pit is dug down to a poorly-draining clay surface it would be necessary to keep any such stored food out of contact with the damp bottom and this appears to have been done by lining the pit, firstly with friable soil then with small sheets of treebark and finally with fern or brushwood.

It was apparent while working in the pit that the floor of the entrance shaft is the crucial working area, both in the original process of constructing the pit and in its utilisation as a food store. The layer of soil on the entrance floor was thicker than elsewhere in the pit, probably because soil had fallen from the entrance and had been trodden down, and this was the only area of the pit floor where the layer of burnt fern and brushwood was absent. Presumably brushwood on the entrance floor would have hindered entry, so the entrance was kept clear and the pit fully lined only in the areas where food was actually stacked.

The fill of the two postholes on the entrance floor appeared to be the same material as the earthen flooring and the fact that they were sealed over by this soil may indicate that the posts were removed before the pit was finally abandoned, possibly in order to provide easier access when removing the stored food. (If all the contents were removed within a short period of time then the posts' assumed function of preventing the pit from caving in would no longer have been necessary).

Entry to and exit from the pit calls for a certain amount of coordination and precision. It is not feasible to crawl, slide, scramble or jump into it without running the risk of breaking down the sides or top of the entrance shaft. Instead, one must squat on the ledge in front of the entrance, place one's hands on either side of it and lightly swing the legs forward, then straighten them so that one effectively vaults downward into the pit and lands standing on the floor of the entrance shaft with the upper part of the body still above ground level.

It is easy to imagine a person entering the pit as described, squatting or kneeling on the entrance floor, facing the body of the pit, and stacking kits of food around the sides (which are within arms' reach) leaving a clear working-space in front of himself, while a second person stands behind him, above the entrance, passing kits downwards over the first person's head. As the pit is filled with stacked kits he works back towards himself until only the entrance shaft is left, whereupon he stands up, places his hands on the edges of the entrance to either side just above waistlevel and leaves the pit by lifting himself on his hands and vaulting backwards and upward so that he ends up as he started, facing the pit with his feet on the ledge in front of the entrance.

It has been assumed that food stored in the pit would be packed in kits, and working on this assumption it is probable that the storing of food would require the cooperation of at least two people; however one person could relatively easily remove the food by himself. Assuming that kits of food could be stacked about 0.5m high in the pit, its effective storage capacity would be no more than 1m^3 , allowing for a clear

space around the entrance shaft. Once sealed and covered over, the pit would be virtually invisible.

CONCLUSION

At least a hundred years ago, a rua was constructed on the side of a ridge adjacent to terraces and agricultural areas by digging out a rectangular subterranean chamber entered by a shaft on one edge. Provision was made for a flat square cover to be placed over the entrance and held in place by a peg. The bottom of the rua was lined with loose soil and sheets of bark and covered with bracken and brushwood, which was subsequently burnt in situ. At some later date, the body of a man who had met a violent death was placed in the pit and the entrance was covered over with bracken which was then burnt. Finally, the rua was abandoned.

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REFERENCES

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| Cowan, James | 1922 | <u>The New Zealand Wars</u> (reprinted 1955), 2 Vols. Vol 1, p. 421ff; Vol. 2, p. 153ff. Wellington, Government Printer. |
| Dinsdale, Evelyn | 1960 | Changing Patterns of Settlement in Tauranga County, <u>New Zealand Geographer</u> , 16:2 |
| Gifford, W.H. and H.B. Williams | 1940 | <u>A Centennial History of Tauranga</u> , Ch. 35 - 38. Wellington, A.H. and A.W. Reed (reprinted 1976, Christchurch, Capper Press). |
| Smart, Colin, D. | 1962 | Preliminary Report of Fieldwork in the Nukumaruru - Waitotara Area, <u>NZAA Newsletter</u> , 5:3, pp. 180 - 181 & plate. |
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