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NEW ZEALAND ARCHAEOLOGICAL ASSOCIATION NEWSLETTER



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ARCHAEOLOGICAL INVESTIGATIONS IN
WAIOTAHU VALLEY, BAY OF PLENTY, NOVEMBER 1981

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The archaeological investigations described here were carried out to retrieve structural, environmental and possible dating evidence on sites subject to afforestation in the Waiotahi Valley, Bay of Plenty. On one location extensive tests of deposits on terraces were undertaken (N78/345, 346), but elsewhere ditch and bank sections were recorded (N78/189, 324, 339).

Geology and soils

The underlying rocks are greywacke and argillite (N.Z. Geological Survey, 1972). In most parts of the valley these have weathered to form a mantle of clay, which, in turn, is overlain by ash showers. The area lies on the 1-inch isopach for the Tarawera ashshower (1886) and within the 3-inch isopach for the Kaharoa ashshower (Healy et al., 1964). The soils formed are yellow-brown pumice hill soils of the Taupo-Whakatane series (N.Z. Soil Bureau, 1968).

Archaeological site survey

Archaeological sites in the valley are known from recording exercises by H.D.G. White of Opotiki for the site recording scheme of the New Zealand Archaeological Association. Systematic survey of the forestry block revealed further sites, with a concentration on ridges in or near the valley floor, and on the west side of the valley (Tawhio, 1980).

The sites selected for closer study were subject to afforestation. In one case, (N78/189), an exposed section was available in a fence cutting. Sites N78/189, and N78/339 are on ridges adjacent to saddles leading from the Waiotahi Valley to the Wai-mana plains to the west. N78/324, 345 and 346 are on a ridge forming the northern part of a group of low hills which block the main valley (Fig. 1). Here, surface evidence was limited to traces of pits and doubtful terraces, and some testing of sub-surface deposits was needed.

A section through the ditch on N78/339 was cut by hand. The section on N78/324 was cut with the back blade of a 4-wheel-drive tractor. Sections were cleaned with a spade and recorded on

N78/189, N78/339 and N78/324. On N78/345 and 346 three supposed terraces were scraped down with the tractor back blade. The approximate location of features appearing in plan was noted, and sections recorded.

Results

Pukehau (N78/189). Pukehau is a ridge pa with surviving lateral ditches. The section lay on the wall of a fence cutting, and faced south. The cutting has been made along the axis of the ridge and across the transverse ditch or ditches of the pa. Surface evidence of the transverse ditch is obliterated by a road but the ditch is in good condition along the north side of the ridge. The substrate of yellow-brown pumice has had at least one and possibly two ditches cut into it. The ditches are separated by about 6 m; the lower one is the less obvious. In both the upper and lower ditch, Tarawera ash lies in a fern soil on top of a fill of grey pumice. The ditches have been filled and sealed by bulldozer action. The top layers are the modern topsoil redeposited and mixed with the yellow-brown subsoil by this action.

N78/339. A section was cut by hand across the ditch and outer bank (Fig. 3a). The ditch had originally been cut down to a stiff yellow pug through a yellow-brown pumice subsoil. The fill in the ditch consisted of a grey-brown loam with lenses of Tarawera ash and a black humus.

N78/324. This section was cut with the back-blade through the southern ditch and bank (Fig. 2a). Apart from the ditch, few features were picked up in plan. There was a blackened lens about 30 cm below the surface and 1 m outside the outer lip of the ditch. A deeper and more extensive blackened lens with some ovenstones beginning at 10 cm below the surface also appeared inside the bank. Charcoal from this lens is predominantly bracken fern with minor amounts of Hebe sp. and unidentified species (Brian Molloy, Botany Division, D.S.I.R.). The width of the striped area was 2 m but, apart from the large posthole which appears in section (Fig. 2b), no postholes were detected.

The cast of the hole excavated for the palisade post was cleaned out. It contained a very brown soft fill with a fragment of the post, about 50 x 3 x 10 cm in size, in its centre. The posthole (Fig. 2c) was trapezoidal in plan. The wood of the post has been identified by Rod Wallace of the University of Waikato as puriri (Vitex lucens).

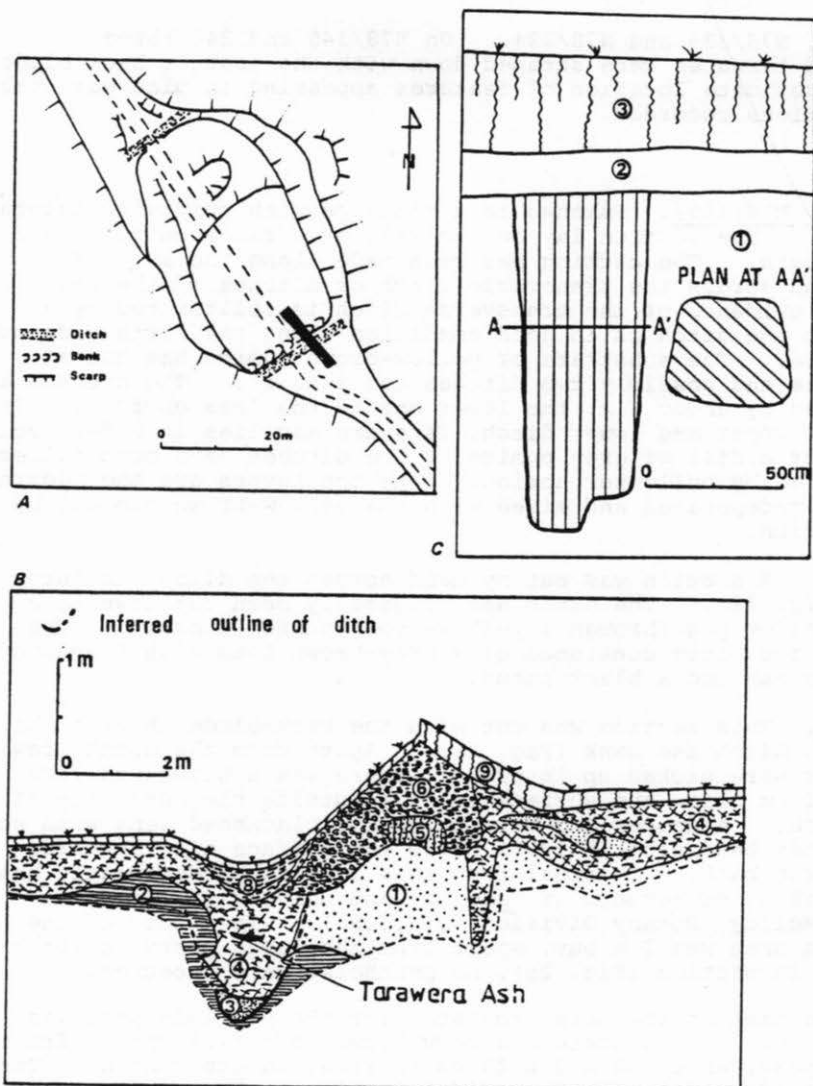


FIGURE 2. A. Plan of N78/324 with excavated area in black; B. Stratigraphy of SW section: 1. yellow-orange pumice subsoil, 2. yellow-brown clay, 3. dark grey clay loam with charcoal, 4. grey-brown loam, 5. grey brown-loam (old top soil), 6. fill from ditch, 7. charcoally loam (fern soil), 8. bulldozer fill, 9. topsoil. C. Posthole stratigraphy: 1. pumice subsoil, 2. original topsoil, 3. modern topsoil.

Principal elements of the section stratigraphy are the outline of the original ditch, bank and posthole; the fill from excavation of the ditch thrown up against the palisade; a hearth behind the palisade (noted above); and the erosion fill of the ditch following abandonment of the pa, sealed by bulldozing debris (Fig. 2b). At a point about halfway vertically through the filling of the ditch, there is a lens of Tarawera ash (1886). The dark grey fill at the base of the ditch contained charcoals predominantly of bracken fern, with minor amounts of Hebe sp.

The sequence of construction of the fortification would have been as follows; A palisade was erected, using large posts, fairly widely spaced with a light earth-retaining structure between. The ditch was then dug with fill thrown up against the palisade. On abandonment, there was further filling behind the bank, and the ditch slumped while the bank eroded.

N78/346, Terraces 1 and 2. The tractor back blade was used to strip two terraces which lay in a saddle on the ridge (Fig. 3a). Terrace 1 was the larger and had an undulating surface. A very dark soil appeared beneath the topsoil with patches of ovenstones. Beneath this was a mottled layer with the bases of hearths and ovens. An area of light-yellow clay appeared immediately below the black in the north-west part of the cut. No postholes were detected.

The section recorded was at the back of the terrace and consisted essentially of topsoil, the oven layer and oven rake-out, and a mottled zone lying between the ovens and the natural substrate (Fig.3b).

The terrace would have been used principally for cooking in ovens. In the course of oven-making, the terrace appears to have been levelled. It was probably originally a slump terrace with a fairly irregular surface.

Terrace 2 was a U-shaped depression, opening out to the saddle. Man-made stratigraphy was similar to that of Terrace 1. Oven-stones also occurred in the black layer 2, the base of which was undulating, suggesting oven or hearth scoops. A lens of Tarawera ash occurred at the base of the brown topsoil in the northern part of the excavation; this petered out toward the line of the sections described here (Fig. 3c). In the north-east of the excavation an extensive lens of pale-grey pumice sand lay under the black oven soil. This had been disturbed by the cultural activity beneath. The lens is presumed to be Kaharoa ash, which fell about 700 B.P. (Pullar, 1980:105).

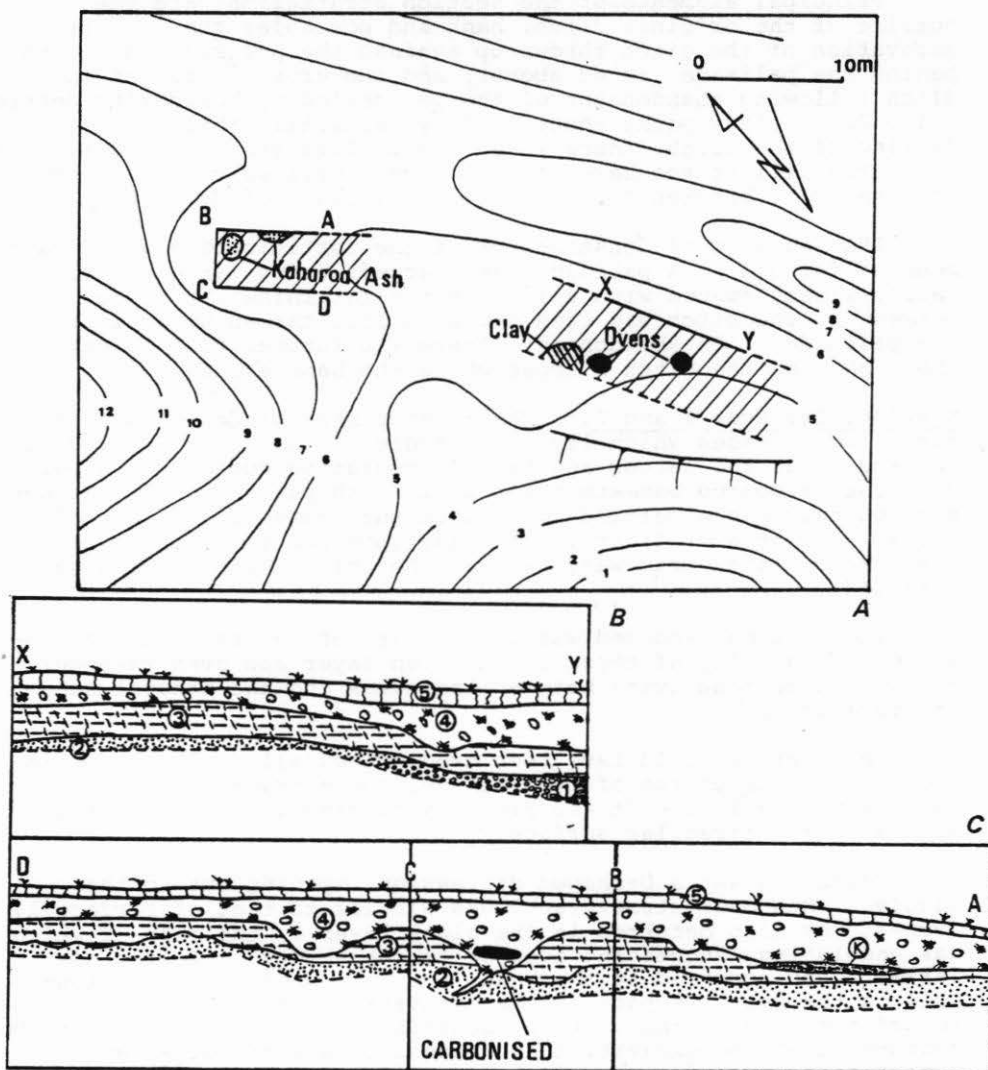


FIGURE 3. A. Plan of N78/346, Terraces 1 and 2, excavated areas hatched; B and C. Stratigraphy: 1. pale yellow-brown pumice sand, 2. pumice subsoil, 3. pumice loam, 4. black loam with charcoally and ovenstones, 5. topsoil; K=Kaharoa Ash.

A sample of charcoally fill from a tree root cast exposed in the north section has been analysed (Fig. 3c). It contains seeds of a tree fern (*Cyathodes* sp.), tutu (*Coriaria arborea*), and the sedge *Baumea* sp. (M. Bulfin, Botany Division, D.S.I.R.). Fern was dominant in the charcoals, with minor amounts of *Hebe* sp. Again, the original depression was probably natural. This filled with erosion wash, including a lens of Kaharoa ash. Human occupation in the form of oven-making occurred after the sealing by further erosion for an unknown period of the Kaharoa ash. The human occupation eventually disturbed the lens of Kaharoa ash and any natural deposits above it.

N78/345. Terrace 3 was about 15 x 6 m and lay towards the north and low on the main ridge (Fig. 4a). Soil was scraped off with the back blade, exposing an area about 9 x 5 m. Stratigraphy comprised a black loam with oven stones and some charcoal, lying on a mottled brown and black fill with fragments of cemented pumice (Fig. 4b). Some levelling of the yellow-brown pumice

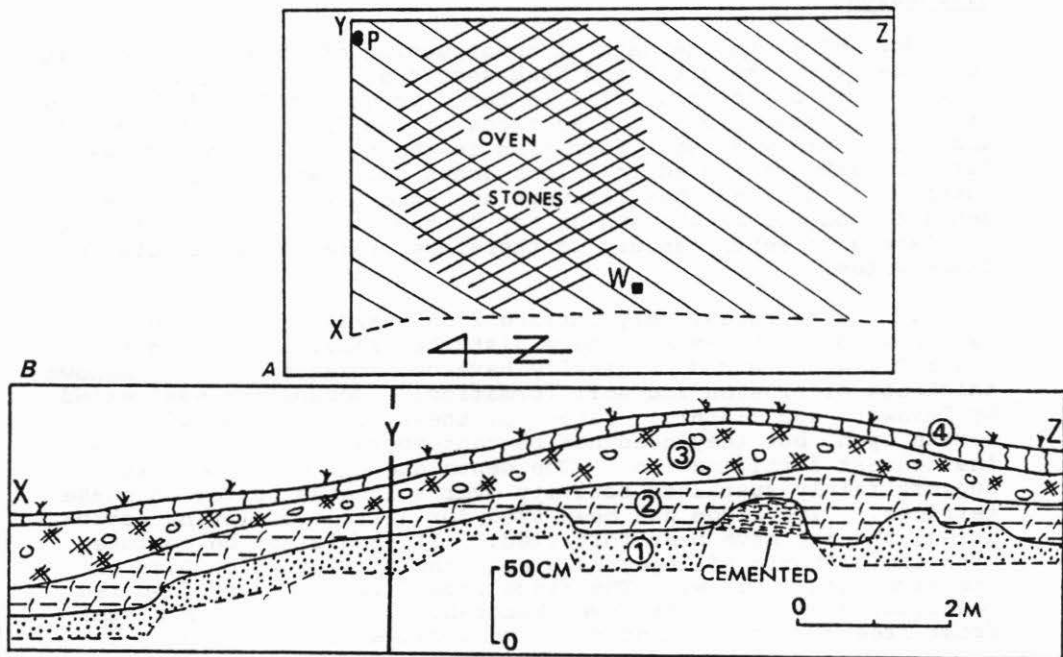


FIGURE 4. A. Plan of Terrace 3, N78/345: P=posthole, W=piece of wood; B. Stratigraphy: 1. pumice subsoil, 2. fill with charcoal, 3. black loam with ovenstones and charcoal, 4. topsoil.

soil appears to have been done, since large in situ deposits of a cemented light-yellow pumice sand occurred in the level of the pumice fill.

A posthole was found in the northern end of the cut; it was oval, about 10 x 15 cm in plan, and went down the length of an arm into the yellow-brown pumice substrate. A lump of beech wood (*Nothofagus* sp.), identified by Rod Wallace, was found towards the front of the terrace in the mottled fill. Charcoally soil lay beneath the wood, but there was no trace of a posthole.

This terrace appears to have been used for the same purpose as those on N78/346, namely, following and possibly during leveling, a number of ovens were made on it, principally on the northern side. On the northern edge of the ridge there was a posthole. Its position and shape does not suggest a house, but it may have been part of a palisade or fence enclosing the ridge.

Discussion

Some clues to the date of construction of these features can be gained from the ditch and bank sections. They all appear to show a rapid build-up of fill in the ditches, evidenced by little or no soil formation in the sections of the fill. Both N78/324 and N78/339 show no soil formation in their fill sequences, with Tarawera ash stratified in a lens about half-way up the fill. Pukehau pa (N78/189) has Tarawera ash underlying the first evidence of soil formation and on top of the fill. Construction in the late eighteenth century is therefore preferred as a date for these sites.

Of the terraces, only Terrace 2 on N78/346 has evidence of ash showers. Oven-making here disturbed Kaharoa ash (about 700 B.P.) which would originally have been overlain by an unknown thickness of erosion and soil formation. Occupation was sealed by Tarawera ash (1886). Dates for these terraces therefore remain open, but they need not be contemporaneous with N78/324, the nearest fortification. The depth and volume of deposit suggest fairly sustained activity over a longish period on these terraces. The ridge has been used for a range of living activities, and may have been fortified. It should not be confused with the historic village, Wakataua, the site of which lies on the river flats below. The ridge itself is in a very favoured position, commanding the lower Waiotahi Valley, and with a near frost-free climate evidenced by the survival of kikuyu grass.

The ground cover on the ridge top during occupation would have been fern, induced by firing, with some areas of scrub.

The existence of sedge on the ridge could have been the result of a localised poorly drained area, and need not be taken to indicate swampy ground in the vicinity. Areas of poorly drained fan and alluvial deposits on the valley floor can reasonably be assumed. A mixed hardwood and podocarp forest would have existed in the vicinity. Beech is unlikely to have existed in the immediate area; the piece found in the site is probably drift wood which came from the upper Waiotahi catchment.

Conclusions

Three pa (N78/189, 324, 339) in the Waiotahi Valley date to the eighteenth or early nineteenth century. N78/324 lay on a ridge with associated knolls and pits which probably predate the building of the pa. Fern was the predominant vegetation on ridge tops, although extensive areas of forest probably lay on slopes.

Acknowledgements

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References

- Healy, J., C.G. Vucetich 1964 Stratigraphy and Chronology of
and W.A. Pullar Late Quaternary Volcanic Ash in
Taupo, Rotorua, and Gisborne dis-
tricts. N.Z. Geological Survey
Bulletin (new series), 3. Welling-
ton, D.S.I.R.
- N.Z. Geological Survey 1972 Geological map of New Zealand,
1:1,000,000:North Island. 1st
Edition, Wellington, D.S.I.R.
- N.Z. Soil Bureau 1968 Soils of New Zealand, Part 1. N.Z.
Soil Bureau Bulletin, 26(1).
Wellington, D.S.I.R.
- Pullar, W.A. 1980 Recent Alluvial Infilling of Rangitai-
ki Plains Basin using Tephra
Markers, Kaharoa Ash and Tarawera
Ash. Proceedings of Tephra Work-
shop, Victoria University, June 1980.
Wellington, Victoria University Geo-
logy Department.

Tawhio, K. 1980 Archaeological Site Survey, Waiotahi and
Kererutahi Forests. N.Z. Historic Places
Trust, Wellington.

LETTER TO THE EDITOR

Aupouri sand dunes

Dear Sir,

You appear, in the course of editing my preliminary report on the Aupouri Sand Dunes Study (Vol. 26:174-191), to have excised portions of the captions to two of the photographs. Some readers may care to know that Plate 1 shows site N3&4/151 (albeit dimly) and Plate 3 shows site N3&4/187.

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