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EXCAVATION OF A MIDDEN (U26/24) ON THE WAIRARAPA COAST

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This report briefly describes the results of the excavation of a midden (U26/24, grid reference 847397) on the Wairarapa coast. The excavation was undertaken by Tony Cairns, with the assistance of Keith Cairns, in the early 1970s.

The notes and samples from the excavation have gradually become dispersed in the 17 years since the fieldwork was completed. Some of the principal results of the excavation were, however, presented in an exhibit at the 1978 School Science Fair and in one section of an unpublished paper written about the same time. This secondary material is the basis for this report.

The primary aim of the excavation was to document the faunal content of the midden and identify the changes in the environment through time which were due to human impact. Studies of local present-day flora and fauna were a part of the original research, but are not discussed here except where directly relevant to the interpretation of the excavated faunal remains.

THE SITE

U26/24 is situated on the narrow coastal platform on the Wairarapa coast some 11 km north of Castlepoint (Fig. 1). Midden is exposed at the ground surface in an area of wind-blown sand at the north end of a gently sloping, rock-strewn, bay. Behind the coastal platform the hills rise steeply to Mt Percy (473 m).

A 3 m x 3 m square was laid out over an area next to the exposed midden material. Recording was based on units of 1 m², each identified by a letter and a number. Three occupation layers were identified and are labelled, from top to bottom, layers 1-3 (Fig. 2). The layers were overlain, and separated by, clean sand. Layers 1 and 2 were midden deposits, and samples (which contained some 5000 individual shells) were collected for detailed analysis. Samples for radiocarbon dating were also collected.

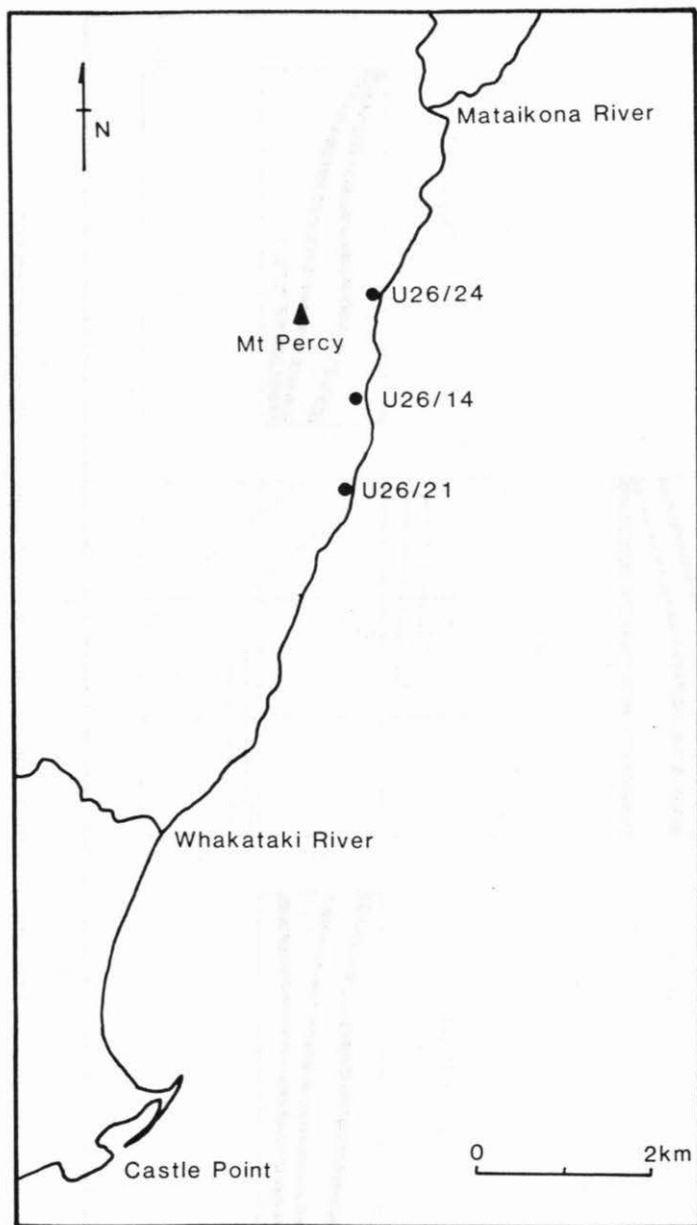


Fig. 1. The Wairarapa coast showing the location of sites mentioned in the text.

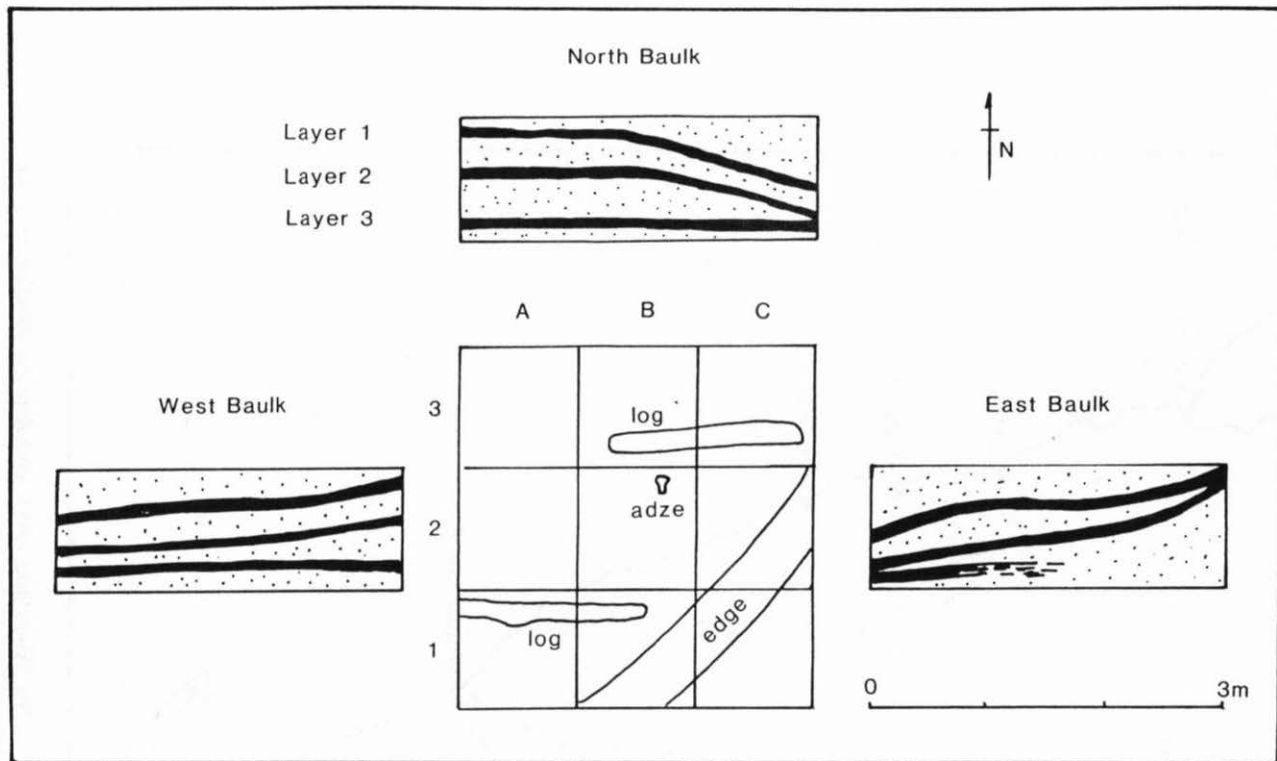


Fig. 2. Plan showing main features and extent of Layer 3. log = burnt remains of log or branch, edge = diffuse edge of Layer 3. NB: the ground surface is not shown and, while they are thought to be generally accurate, the section drawings should be treated as indicative only.

RESULTS

Stratigraphy

Layer 1: a 90 to 120 mm thick concentrated shell layer. Shells were mostly whole and, by number, Cat's eye (*Turbo smaragdus*) (79.8%) and the common spotted top shell (*Melagraphia aethiops*) (19.1%) were the most common species. Present in very small numbers were dark rock shell (*Haustrum haustrum*), spotted whelk (*Cominella maculosa*), white rock shell (*Neothais scalaris*), tuatua (*Paphies subtriangulatum*), radiate limpet (*Cellana radians*) and Cook's turban shell (*Cookia sulcata*). The layer was partially overlain by, and itself overlay, clean sand.

Layer 2: a 130 mm thick concentrated shell and charcoal layer. The layer slopes up towards the southeast corner of the excavated area where it meets Layer 1. Shells were mostly Cat's eye (*Turbo smaragdus*) (83.6%), common spotted top shell (*Melagraphia aethiops*) (8.6%), radiate limpet (*Cellana radians*) (4.9%), and dark rock shell (*Haustrum haustrum*) (2.9%). Present in very small numbers were shield shell (*Scutus breviculus*), common pua (*Haliotis iris*), pink pua (*Haliotis australis*), Cook's turban shell (*Cookia sulcata*), white rock shell (*Neothais scalaria*), spotted whelk (*Cominella maculosa*), pipi (*Paphies australe*), cockle (*Protothaca crassicosta*) and tuatua (*Paphies subtriangulatum*). Dog, fish and bird bone were also present in very small quantities but were not identified as to species. The layer overlay clean sand.

Layer 3: a 100 mm thick layer of charcoal and charcoal-stained sand, burnt ovenstones, and burnt branches. This layer did not extend into the southeast corner of the excavation. This layer is interpreted as being part of a cooking/rake-out area. The layer overlay clean sand.

The sand between the occupation layers could have blown in over a very short period of time, perhaps days or even hours. It need not indicate any significant time interval between the various occupations. There were no indications of soil formation: the material from all three occupations were deposited on surfaces of loose sand.

Antiquity

Four radiocarbon dates have been obtained: one each from Layers 1 and 2 and two from Layer 3. All the samples were collected from square C3. The dates are calibrated according to Stuiver and Reimer (1986) method B and, where appropriate, using a marine correction curve with $\Delta R = -31 \pm 13$ (McFadgen and Manning 1990).

1. A mixed shell sample from Layer 1 produced a conventional age of 851 ± 40 (NZ1882). This gives an age range, at 95% confidence level, of

TABLE 1. RADIOCARBON DATES FROM U26/24

Lab. no.	Conventional Age (Years BP)	Calibrated (Years AD)	$\delta^{13}\text{C}$ (ppm)	Material Dated	Provenance
NZ1882	851 \pm 40	1395-1535	1.9	Marine shells	Layer 1
NZ1883	719 \pm 40	1485-1660	1.8	Marine shells	Layer 2
NZ1884	599 \pm 58	1290-1430	-24.2	Charcoal (including totara bark)	Layer 3
NZ1885	674 \pm 59	1270-1405	-24.2	Charcoal (unidentified as to species)	Layer 3

Calibrated Age Range = 95% Confidence Interval. NB: All measurements made prior to 1988 have been recalculated by the DSIR Radiocarbon Laboratory in accordance with the recommendations of Stuiver and Polach (1977, *Radiocarbon* 19 (3): 355-363). The dates are reported here in their recalculated form.

1395-1535 AD (Table 1).

2. A mixed shell sample from Layer 2 produced a conventional age of 719 ± 40 (NZ1883). This gives an age range, at the 95% confidence level, of 1485-1660 AD. This age range overlaps with that for Layer 1, indicating the probable dates for Layers 1 and 2 both fall in the period 1485-1535 AD.
- 3-4. Two charcoal samples were collected from Layer 3. One sample consisted largely of totara bark and unidentified twig charcoal and gave a conventional age of 599 ± 58 (NZ1884). The other sample, which was on unidentified charcoal, gave a conventional age of 674 ± 59 (NZ1885). These dates give a calibrated age range, at the 95% confidence level, of 1290-1430 AD and 1270-1405 AD respectively. The samples for Layer 3 may have significant inbuilt age and the results indicate only that Layer 3 occupation occurred after 1290 AD. As Layers 1 and 2 are dated to 1485-1535 AD, however, Layer 3 occupation must have occurred before 1535 AD.

Artefacts

Most of the stone material found was of local origin (chert, limestone, pumice and sandstone). Three of the artefacts found, however, are of particular note:

- (1) A Type 1B (Duff 1977: 156-8) adze of metasomatised argillite was found in Layer 3, Square B2. The adze has a distinct 'spade-shouldered' form and is similar in size and form to an example figured by Duff (1977: Fig. 33, top) from Wairau Bar.
- (2) A bone birdspear point, elliptical in cross section, and with four barbs on one side was found in Layer 2, Square C3.
- (3) A drill point of red obsidian was found in Layer 2, Square C3.

DISCUSSION

Only a small area, which proved to have been used entirely for midden dumping and oven rake-out, was excavated. It is not known what other activities are likely to be represented in adjacent unexcavated areas.

The two midden layers, which date to around 1500 AD, are dominated by Cat's eye (*Turbo smaragdus*) and, to a much lesser extent, the common spotted top shell (*Melagraphia aethiops*). A survey of the intertidal zone was carried out in the mid 1970s and 94 shellfish species were identified. *Turbo smaragdus* and *Melagraphia aethiops* were both very well represented in the samples and

accounted for 33% and 22% respectively of all individuals counted.

Layer 1 has a very restricted range of shellfish and most of the species found are present only in very small numbers. Whether this is a sampling problem or reflects a collecting strategy concentrating on *Turbo smaragdus* and *Melagraphia aethiops* is unclear. Layer 2 has a wider range of species and there is the same concentration on *Turbo smaragdus*, but less on *Melagraphia aethiops*. Limpets (*Cellana spp.*) are abundant in the present-day environment but are uncommon in the midden.

Anderson's (1979) results at Black Rocks Point, Palliser Bay, suggest that an appropriate strategy of shellfish collection on rocky shores is always to take the biggest available individual regardless of species or any other consideration. Such a strategy results in the relative frequency of species in middens changing through time – a change which reflects the depletion of stocks of the larger shellfish. The contents of the Layer 1 and 2 middens at U26/24 do not suggest collecting from a pristine environment. It is more likely that they represent the later stages of an exploitation strategy: the large mollusc species (e.g. *Haliotis spp.*), for example, are rare.

The four dates from U26/24 suggest occupation between 1290 and 1535 AD. Two other sites in the vicinity have been dated by radiocarbon. A date has been obtained on unidentified charcoal from the basal layer of a site, U26/21, about 2 km to the south. This occupation has a conventional age of 592 ± 52 (NZ6968) (Cairns 1986). This gives a calibrated age range at 95% confidence level of 1295-1430 AD, but it is a maximum date for occupation.

About 1 km to the south is the Okau site (U26/14) which has three radiocarbon dates, all on material from one occupation (Cairns 1980; n.d.). The conventional ages are 221 ± 55 (NZ4722), 602 ± 32 (NZ4721) and 632 ± 32 (NZ4720) and are on samples of charcoal, twigs and bark, *Turbo smaragdus*, and *Melagraphia lugubris* respectively. The calibrated age ranges all suggest the occupation was dated to the 17th or 18th centuries. U26/14 is, therefore, almost certainly younger than U26/24.

Artefactual evidence from U26/24 was sparse, with formal tools limited to the metasomatised argillite 1B adze, the obsidian drillpoint and the bone birdspear point. The metasomatised argillite is from the Nelson mineral belt, while the red obsidian is probably from either Waihi or Purangi. Other stone material included items of chert, limestone, pumice and sandstone. Possible sources for most of this stone material can be identified by reference to Prickett's (1979) study of the material from the Palliser Bay Programme. Metasomatised argillite and obsidian had to be brought in from some distance, but chert, limestone, pumice and sandstone were available from Wairarapa sources.

The 1B adze is from Layer 3 and is dated by radiocarbon to between 1290 and 1535 AD: this is believed to be the first such date for a 1B adze from a North Island site.

CONCLUSIONS

The earliest occupation at U26/24, which dates to sometime between 1290 and 1535 AD, is interpreted as part of a cooking/rake-out area. Two later occupations date to between 1485 and 1535 AD. All three occupations could have occurred in a very short period of time. The faunal content of the two midden layers suggest collection of shellfish from an environment which was already far from pristine.

ACKNOWLEDGEMENTS

Some material relating to the excavation (sometimes referred to as the Taraoneone excavation or the Taraoneone Bay site) is held with the Keith Cairns Papers in the Alexander Turnbull Library (Acc. 88-70: 8/6, 16/3). Les Lockerbie collected the samples used for radiocarbon dating. Bruce McFadgen advised on calibrating the dates. Aidan Challis made detailed comments on a draft version of this paper.

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