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INVESTIGATION OF MĀORI OVENS ON THE OLD LYTTTELTON WATERFRONT (M36/229)

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Introduction

The Canterbury earthquakes of 2011 caused widespread damage in the historic Lyttelton town centre. One of the many casualties was the former Lyttelton post office building (NZHPT Register No.1817), located at 7 Norwich Quay (Figure 1). Constructed in 1875, the building as well as the parcel of land on which it was constructed was deemed archaeological and an emergency archaeological authority was obtained by the Canterbury Earthquake Recovery Agency (CERA) prior to the building and its foundations being removed. During the removal of the foundations in August 2011 archaeological deposits associated with pre-contact Māori occupation were encountered.

Historical background

The first occupants of the Lyttelton area included Waitaha and, from about the 16th century, Ngāti Māmoe (Anderson 1998:22-23). The area around Lyttelton was the location of a Ngāti Māmoe village known as Ohinehou, and the wider harbour was referred to as Whangaraupō, or harbour of raupō (Burgess 2009:7). By the 18th century Ngāi Tahu had displaced Ngāti Māmoe at Lyttelton, and their principal settlement was located at Rapaki (Anderson 1998:38).

Lyttelton harbour was renowned for its seasonal shark fishing, and the settlement at Ohinehou was a mahinga kai, or resource gathering area, for the pioki or gummy shark, which was dried and traded (Rewi Couch, pers. comm. 2011). By the time the first Europeans arrived in the area the settlement at Ohinehou appears to have been abandoned. Visiting French whalers describe settlements at Whangaraupo as “a cluster of huts and some whata on

which were stores of dried fish, sacks of kumara and cakes of roasted fernroot” (Anderson 1998:151).

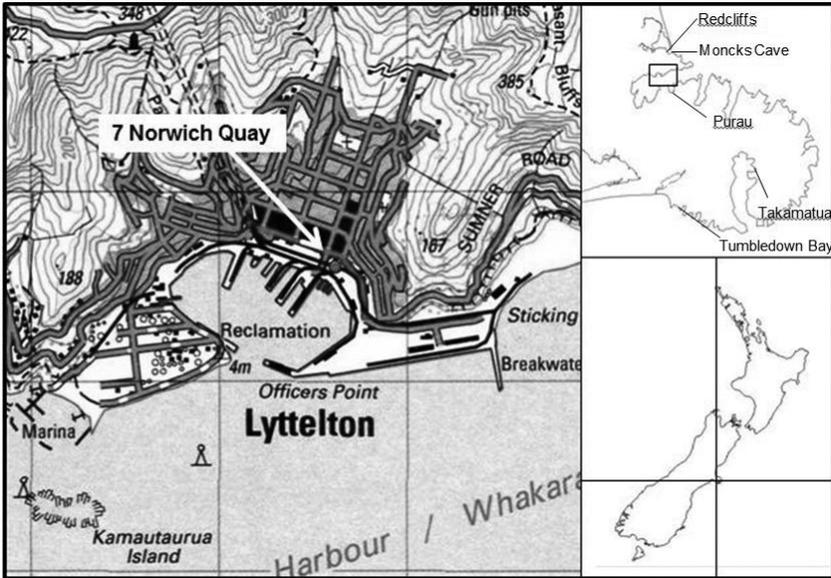


Figure 1. Location of 7 Norwich Quay. Inset shows location of other early Māori archaeological sites around Banks Peninsula.

In December 1848, New Zealand Company principal agent William Fox and the Canterbury Association’s Captain Joseph Thomas arrived in Lyttelton harbour on board the cutter *Fly*. Survey of the land around the harbour commenced shortly after, and by August 1849 the Crown purchase of the Port Cooper Block was concluded. Lyttelton was gazetted as a port of entry on 30 August 1849, and by January 1850 a jetty 150 feet in length and 15 feet wide had been erected on the foreshore (Figure 2). By 1851 Lyttelton was able to boast “wide streets, neat houses, shops and stores, sea wall and jetty...” (Scotter 1968:20-26).

In his history of Lyttelton harbour, Scotter describes the waterfront area in the 1850s:

...the esplanade behind the sea wall was divided into ‘wharves’ by the merchants who rented sections of it from the association, but discharging goods on to the wall involved beaching boats or lighters below it except possibly at full tide. An ‘extensive wharf and warehouses adjoining the jetty’ which a merchant, John Willoughby, advertised

consisted apparently of 50 feet of sea wall together with the esplanade behind it, for which he paid rent of £25 a year. Longden and Le Cren asked permission to erect a small building on the ‘wharf’ they rented, while complaining that other firms were allowed to land and store timber at the ‘wharf’ at the other end of the beach without any charge being made for their doing so, which is hardly fair to those who pay a large rent for their portion of the sea wall. The damage to the wall in June 1851 could not have been a serious hindrance; its repair was undertaken a year later.

(Scotter 1968:31).



Figure 2. The Lyttelton waterfront in 1862, showing small reclamation around the base of the jetty. Reproduced from Pierre 1964:95.

In 1865 four contracts were let for the construction of harbour improvements. These involved: reconstructing 150ft of the end of the government jetty; continuing the jetty on the screw pile principle; building an embankment faced with a wooden sea wall 700 feet long from the reclamation at the tunnel mouth to the old jetty; and erecting a short jetty at the west end of this wall (Scotter 1968:74).

The decision to position the railway yards at the water’s edge in front of the township necessitated the reclamation of new land subsequently referred to as the ‘station-ground’ (Pierre 1964:95). A new seawall running parallel to Norwich Quay some 100 metres further out into the harbour was constructed

to contain the reclamation. The first stage of the reclamation used spoil from the excavation of the railway tunnel that opened in 1867 and was positioned at the west end of Lyttelton (Figure 3). By 1868 the Lyttelton jetty had been completely enclosed within the reclamation.



Figure 3. The Lyttelton waterfront in 1868, showing construction of the sea-wall enclosing the original jetty and foreshore. Reproduced from Pierre 1964:96.

Lyttelton's first post office and customs house had been established in an old building on Norwich Quay in 1849. This was subsequently replaced by a dedicated post office in 1851, located in the former market reserve at the eastern end of Norwich Quay. In 1875 a new post office was built on the corner of Oxford Terrace and Norwich Quay (i.e. 7 Norwich Quay), which operated until 1976 when services were relocated to the corner of Canterbury and London Streets.

Archaeological investigations

The initial earthworks to remove the post office foundations necessitated excavation along the southern side of the building footprint. The foundations laid in 1875 were an early application of the use of Portland cement and the builders may have over-estimated the amount required to support the building, pouring

foundations 1 m wide and 1.2 m deep. Two Māori ovens were encountered at the west end of the trench.

Archaeological investigations focused on an area immediately south of the building footprint. Overlying fill was removed from a 3 m wide strip, exposing a number of features of both pre-contact and historic origin, including a stone alignment interpreted as the remains of an early seawall (Figures 4 and 5). Remnants of additional features were recorded on both sides of another foundation running perpendicular to Norwich Quay.

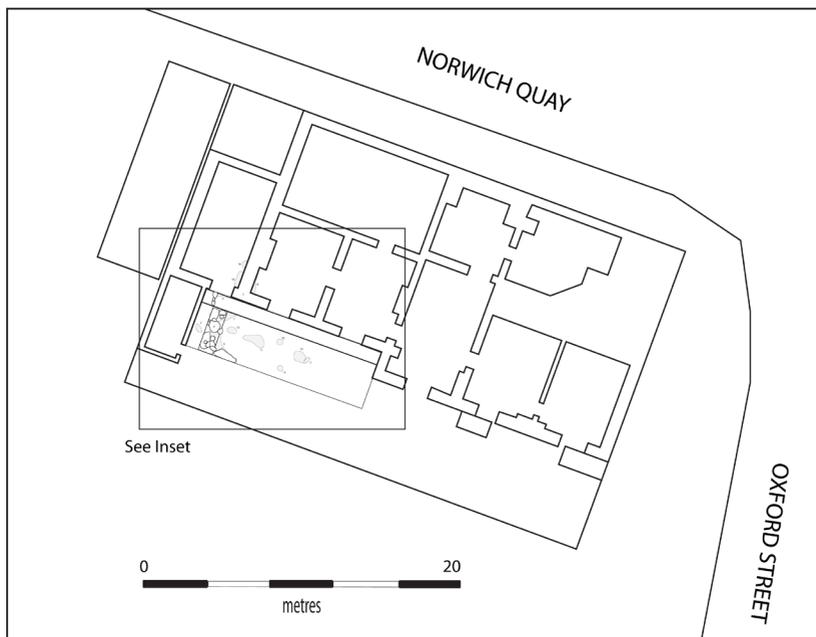


Figure 4. Site plan, 7 Norwich Quay.

The ovens exposed during the initial works were evident in the southern profile of the trench, and partially visible on the northern side of the trench as a stain left on the concrete foundation (Figure 6). These were recorded as separate features, but it is possible they formerly comprised a single deposit. The original dimensions of the northern oven feature was 1.5 m in length and up to 600 mm thick, tapering away on the eastern end (Figure 7). This feature contained the largest sample of shell, including catseye, pāua, bluff oyster, blue mussel, silver pāua, turret shell, green lipped mussel and speckled whelk. Fish species included shark/ray and red cod, and bird species included New Zealand wood pigeon and species that were not able to be identified using the

University of Otago reference collection. Rat and dog bone was also present in the sample.

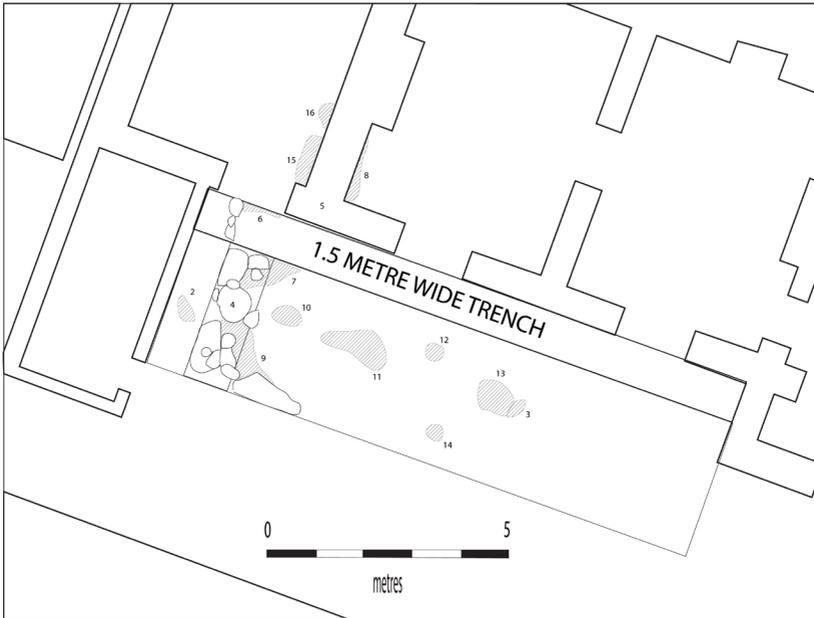


Figure 5. Detail of Figure 4.



Figure 6. Oven feature profile visible as staining against the 1875 foundations.

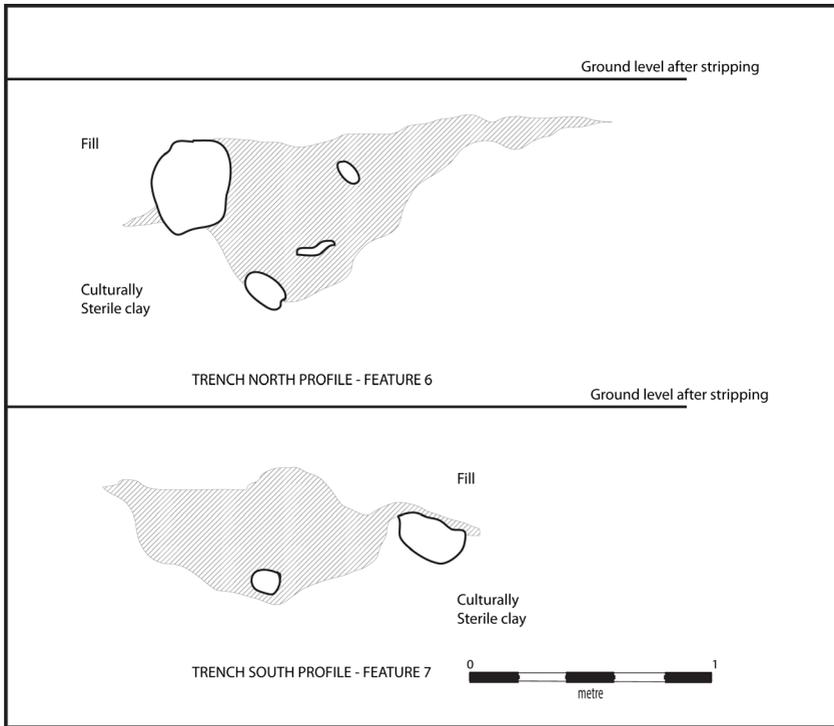


Figure 7. Profile of the oven features as exposed on north and south sides of trench.

The oven feature on the southern side of the trench was the most intact deposit. It was 1.2 m in length and up to 500 mm thick, tapering away on the eastern end (Figure 7). This feature contained a reasonable quantity of shellfish fragments including remains of bluff oyster, catseye, pāua, blue mussel, turret shell, mud snail and pipi. Bird bone recovered from this feature included little shag, spotted shag, tūī, New Zealand wood pigeon, blue penguin, moa bone and parakeet. Fish bone included kahawai, red cod and ling. As with the oven feature on the north side of the trench, rat and dog bone were also present in this deposit. A sample of cockle shell selected for radiocarbon dating was taken from this feature and returned a calibrated date of AD1465-1660 at 95 per cent confidence (Table 1 and Figure 8). Catseye were the most common shellfish species but these were deliberately excluded as a candidate for radiocarbon dating because it could not be discounted that some may have found their way into the site as naturally occurring populations that colonised the seawall, rather than shellfish gathered for food.

Table 1. Radiocarbon dating results.

Lab no.	Material	$\delta^{13}C\text{‰}$	CRA yr BP	Cal AD 68%	Cal AD 95%
Wk-33632	Shell	1.3±0.2	748±25 BP	1500-1617 AD	1465-1660 AD

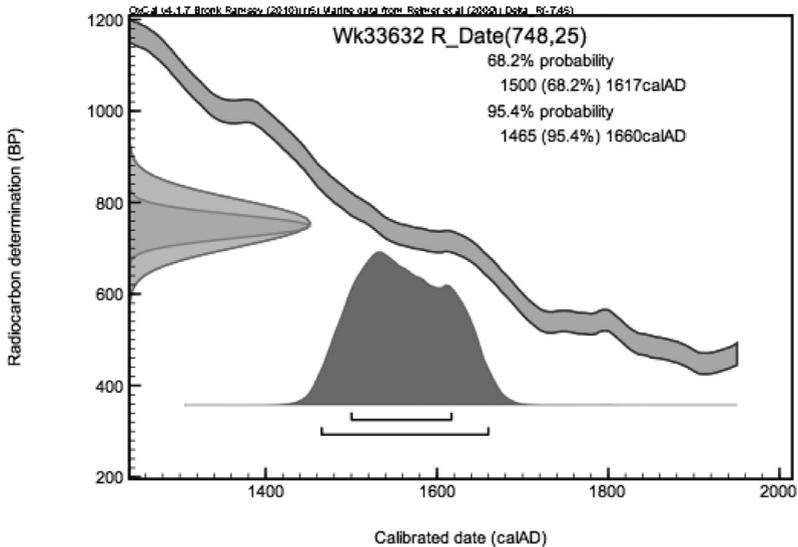


Figure 8. Results of radiocarbon dating.

Both oven features were truncated by a roughly north-south alignment of medium sized rounded boulders which in turn had been cut by the trench excavated for the foundations of the 1875 post office (Figure 8). This feature is believed to be remains of the 1849 seawall which enclosed a small reclamation around the original jetty. The remains of the wall comprised medium to small sized rounded boulders and truncated the oven features. To reduce the overall cost only part of this feature was exposed, and the wall to the south of the area cleared for excavation was left in situ. Remnants of a seawall were also found during the archaeological monitoring of the section at 11 Norwich Quay to the west carried out by Opus International Consultants. This may have been the seawall constructed in 1865 (N. Cable, pers. comm.).



Figure 8. Oven features truncated by seawall which is in turn truncated by concrete foundation.

The seawall also truncated a third feature likely to have been oven-rake out and contained crushed shell as well as fish and bird bone. Shellfish species identified in this feature included bluff oyster, mud snail, catseye, turret shell, blue mussel, green lipped mussel, pipi, white rock shell, cockle, pāua and venus shell. Bird species included blue penguin, New Zealand falcon, parakeet, moa, tūī, kiwi, and specimens which were not able to be identified using the University of Otago reference collection. Fish species included shark and kahawai, and rat bone was also present. A small fragment of ‘Willow’ pattern ceramic was also found in this feature, which is suggestive of post-depositional mixing of layers. This may have occurred during the construction of the seawall.

Several features were evident as shallow deposits of darkened soil and heavily fragmented or crushed shell, fish bone and bird bone, with one deposit containing a broken adze (Figure 9) as well as small amounts of kōkōwai (red ochre). These deposits were located alongside shallow deposits of historic period origin, and the presence of historic period material in two of the earlier deposits suggest that post-depositional disturbance and mixing has occurred in this area. Historic period deposits included fragments of patterned ceramic, bottle glass, metal items, animal bone and clay pipe fragments, but diagnostic

elements were inconclusive in terms of providing likely dates of deposition. The clay pipe fragments were moulded with the mark of ‘C. CROP / LONDON’ and ‘DAV...’. Charles Crop and Sons was a London-based clay pipe manufacturer who operated between 1856 and 1924 (Oswald 1975:205).

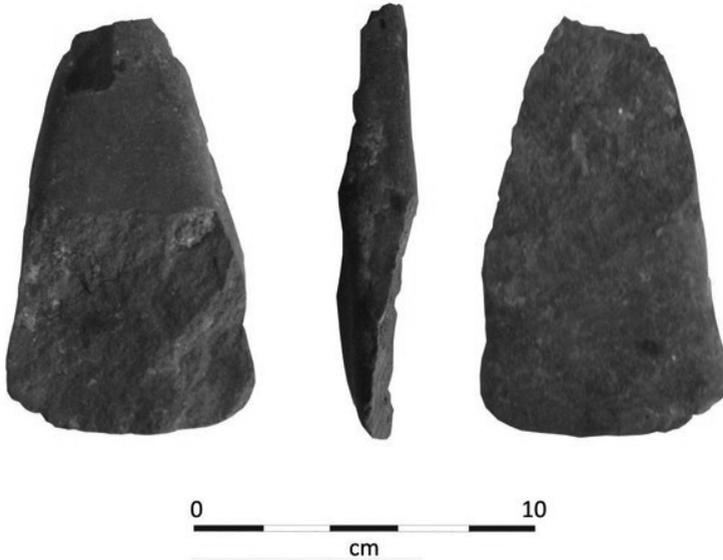


Figure 9. Greywacke adze, showing attempted reworking.

Discussion

Prior to 2011 a number of midden/oven sites had been recorded around the coast of Lyttelton harbour and Sumner, but no direct evidence of Māori occupation had been reported in the vicinity of Lyttelton township. The site of Ohinehou and other occupation areas in Lyttelton were known to Te Hapu o Ngāti Wheke, and the site at 7 Norwich Quay provided direct physical evidence of occupation in this area and a small insight into the fishing and subsistence activities that took place there.

Anderson's 1989 study of archaeological evidence associated with the exploitation of moa concluded that moa hunting began c.900BP, peaked at c.650BP, and ceased around 400BP (Anderson 1989:190-191). This earlier result was obtained using a set of data from sites which Anderson has subsequently reviewed on the basis of chronometric hygiene, and subsequently revised to 800-400BP (Anderson 2000:196). This result is broadly consistent with the chronology proposed by Schmidt's review of available radiocarbon dates for

moa bone, which concluded that the exploitation of moa ceased sometime in the mid-17th century (Schmidt 2000:322).

Challis's review of archaeological sites in the Canterbury region notes that Māori occupation sites are concentrated in the coastal zone, and are predominantly characterised by midden/oven features (Challis 1995:6). Anderson has suggested that the lack of evidence for sedentary activity in early sites reflects temporary or seasonal exploitation of moa (Anderson 1989:140). While there was no evidence for permanent structures associated with the Māori occupation in the area investigated at Norwich Quay, the area where archaeological deposits survived was very small. It is therefore not possible to say with any certainty whether the site reflects a temporary or more permanent occupation.

Other sites around Banks Peninsula containing moa bone or Archaic period deposits have been reported at Purau (Lyttelton harbour), Takamatua (Akaroa harbour), Tumbledown Bay, Redcliffs, and Moncks Cave (Duff 1977:355-357).

The species present in the midden were predominantly native, with the Māori introductions of dog and rat also present. The shellfish species are generally from a rocky muddy shore environment (which is common around Lyttelton harbour), and fish species were generally inshore pelagic species and demersals. Similar species of faunal remains were found in each of the features associated with Māori occupation of the site.

Challis notes that with the exception of some statistical outliers, the majority of early Māori sites in Canterbury date to the 14th and 15th centuries (Challis 1995:8), and this is reflected in the results of Schmidt's analysis after applying a discard protocol (Schmidt 2000:322-324). The later date presently available from the Lyttelton site is comparable with the dates obtained from deposits at Tumbledown Bay (NZ-7654) on the south side of Banks Peninsula, which is cited as a *terminus post quem* for the cessation of moa hunting in the South Island (Schmidt 2000:323). Submission of further samples for carbon dating from this deposit would assist in the refinement of the currently available date range.

It should be noted that parts of the site were heavily disturbed, and only a very small area contained intact pre-contact Māori archaeological deposits. The presence of historic material in layers which appear to be of prehistoric origin indicates there is likely to have been some mixing of cultural layers, so any interpretations concerning the age of the stone adze located in this part of the site should be approached with caution.

Based on the archaeological evidence, the following sequence of occupation is proposed for the site.

The features were ascribed to five phases of occupation, spanning from the 15th to the late 19th century. The first phase of occupation was 15th century Māori occupation. The radiocarbon date from the cockle shell, and presence of moa bone in the oven features suggests this occurred as early as AD 1465-1660, during the later stages of the Archaic period. It was not possible to ascertain the duration of occupation, or to consider absolute dates for individual features in relation to each other because restricted funding only provided for one sample to be submitted for radiocarbon dating. Submission of additional samples for dating from material recovered from the site would also assist in refining the date range from the oven that was sampled for dating.

Evidence supporting a contact period phase of occupation of the site is limited, but the possibility has not been ruled out. Layers which included historic material such as pig bone and limited quantities of ceramic may relate to the period following initial contact between Māori and Pākehā, when European goods and introduced species, such as pigs, were still relatively uncommon but starting to find their way into Māori settlements. In some of the smaller features where moa bone was found in the same context as pig bone, this suggests site disturbance.

The third phase of occupation encompasses the first modifications of the foreshore and is embodied in the seawall feature. This phase lasted from the early period of European settlement in Lyttelton from 1849 until the area was buried under reclamation in 1868.

The fourth phase of occupation dates from the construction of the reclamation in 1868 to the construction of the post office on the site in 1875. Historic photographs show buildings on the site at this time. It was not possible to attribute any features to this period with any certainty, but it remains a possibility that some of the features containing 19th century rubbish may relate to this period.

The last phase of historic occupation of the site commenced with the construction of the post office, and dates from 1875 to the time of its demolition in 2011.

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