4 The Archeological Investigations

INTRODUCTION

The name "Te Puna" was used historically in several different ways, and the places Oihi, Te Puna, and Rangihoua may be confused (Heap 1964; Lee 1983). Savage (1973) used the term "Tippoona" in 1805 to refer to the settlement on Te Pahi Island and the adjacent mainland at the northern end of Wairoa Bay leading to Papuke. Marsden (Elder 1932), in the 1815 deed of sale for land at Oihi, used the same term to refer to the bay where Rangihoua, Oihi, and Te Puna are located, known today as Rangihoua Bay (Figure 4.1).

In this general sense, other historical and archival material sometimes refers to Oihi and Rangihoua as "Te Puna". Marsden (Elder 1932, 1934) and other missionaries such as King (n.d.a,b) also use "Te Puna" to refer to the specific valley important as a cultivation area for Rangihoua Pa, where Ruatara's *wahi tapu* was located, and the eventual location of the Te Puna mission. In this work, the terms Te Puna, Oihi, and Rangihoua are used to refer to these specific locations within Rangihoua Bay.

The site of Te Puna mission station is situated within a complex archeological landscape that includes the Oihi mission station, Rangihoua pa as well as a number of smaller pa, and the whole coastal strip of Rangihoua and Wairoa Bays and Te Pahi Island. The mission station, identified on figures as archeological site number P05/24, numbered according to the New Zealand Archaeological Association's site recording system (Walton 1999), should be considered in this context, as an integral part of the wider archeological landscape (Middleton 2003). Te Puna (sometimes "Tippoona" in the historical literature) was an important anchorage in the early nineteenth century, the source of a good supply of potatoes. The Bay of Islands provides a number of safe anchorages, depending on the prevailing winds, allowing vessels to move

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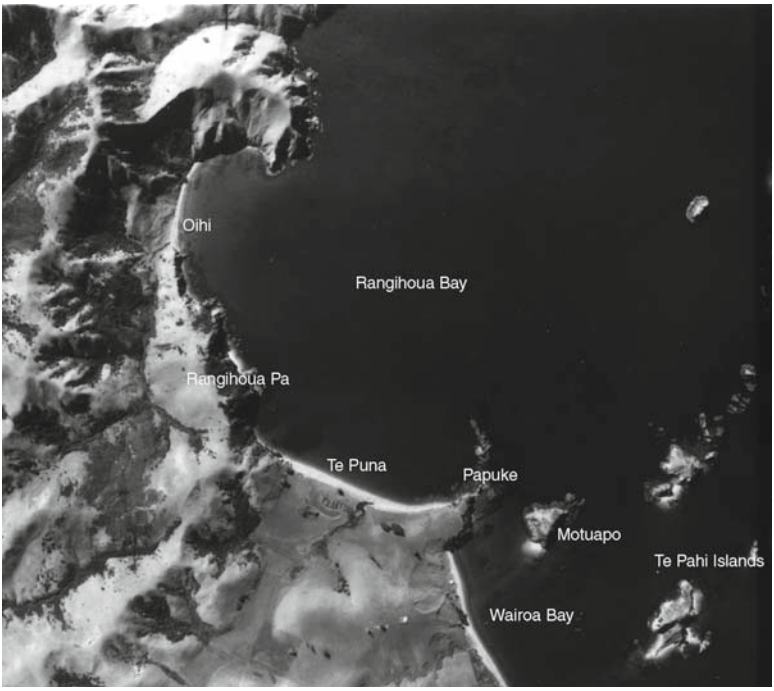

Figure 4.1. Aerial photo, Rangihoua and Wairoa Bays, 1950

from the northern bays to the southern, according to the weather. In 1810, James Finucane stated "All the navies of Europe could lie here, not only in perfect security but in absolute concealment from each other" (Whitaker 1998: 98).

Te Puna provides evidence of a landscape altered from its indigenous past by the first phases of European settlement. This can be seen in features associated with ploughing and European house sites situated within a cadastral landscape. Land deeds of the first transactions between Maori and missionaries, acting on their own behalf as well as the CMS, began the process of changing land tenure and use (Lee 1993; Mutu 1999; Wyatt 1991). Maori land tenure was traditionally based on descent from a common ancestor or *take*, transmitting the notion of the growth of roots connected to the earth (Salmond 1991b). Descent groups could be reformed or reconstituted at different levels, as *whanau*, *hapu*, and *iwi*, or as Lundsgaarde (1974) expressed it, "land rights waxed and waned as an integral part of other social and demographic processes."

By the beginning of the twentieth century this had changed and Te Puna was part of a large pastoral landholding, owned by one descendant of the Hansen family (Martin 1990). In the midst of this landscape and as part of events enacted here, "sites of memory" (Nora 1989) were created, places sacred to both Pakeha and Maori.

NEW ZEALAND IN PREHISTORY

The Polynesians who settled New Zealand arrived from a Polynesian "homeland" or "Hawaiiki" about 700 years ago (Higham and Jones 2005; Walter et al. 2006). Although the islands forming this homeland are not known, the area is in the region of the southern Cook Islands, Austral Islands and Society Islands in eastern Polynesia; these were the places "where the fundamental structures of Maori society developed" (Walter et al. 2006: 275). These early Polynesians brought with them aspects of East Polynesian culture and social structures that evolved over time within New Zealand to become Maori, distinctive from any other Polynesian culture.

The material culture of the New Zealand Maori developed from an early period identified as "archaic," distinguished by artifacts such as large quadrangular adzes and ornate personal ornaments. By the time of European contact, these forms had changed. Nephrite tools were in more common use, ornaments were also made from nephrite, and adzes were smaller and more rounded in section (Duff 1956; Golson 1959; Walter et al. 2006: 278). A change in settlement structures also took place along with the change in material culture. From about the beginning of the sixteenth century Maori began the construction of *pa*, or large fortifications on defended positions such as hilltops, headlands, and ridges. These fortifications contained features such as terraces for house structures and pits for *kumara* storage, and were enclosed by ditches and palisaded banks. While this type of monumental construction, still highly visible in the landscape today, predominates in the north of the North Island, *pa* can be found extending into the upper South Island, but are not found in southern most parts of the country.

At the time of first human settlement, New Zealand's fauna was characterized by the presence of big game, in particular the moa (*Dinornithiformes*), a large flightless bird that was present throughout both main islands, although more prevalent in the south, where the economy was based around fishing, hunting, and gathering. By the sixteenth century this bird was extinct, and numbers of seals, once plentiful around the coast, had been severely depleted from southern coasts and extirpated from northern areas (Smith 2005a). By contrast,

in the north the economy had a horticultural focus. Maori brought five cultivars from Eastern Polynesia (Leach 1984; Davidson 1984). The *kumara* or sweet potato (*Ipomoea batatas*) formed a staple of the diet for northern Maori, as did taro (*Colocasia esculenta*) and yam (*Dioscorea alata*). *Kumara* was planted in spring, harvested in autumn and stored over winter, either in roofed pits or on *whata*, platforms supported by posts. The *hue*, or gourd (*Lagenaria siceraria*), was grown for food and for storing liquid while the paper mulberry (*Broussonetia papyrifera*) was a delicate plant, used to produce small amounts of *tapa* cloth. This plant was last seen growing in the Bay of Islands at mid-nineteenth century, but is now no longer cultivated. While prolific birdlife and fish formed important sources of food, there was no animal life in pre-European New Zealand apart from the introduced *kiore* (*rattus exulans*, the Pacific rat) and the *kuri* (*Canis familiaris*, the Polynesian dog). These last two were also eaten. The *kumara* was grown as far south as the top of the South Island; beyond that, the climate was too cold for horticulture, and crops were not grown there until the European introduction of the white potato in the late eighteenth century. However, throughout the country the rhizome of the uncultivated fern or *aruhe* (*Pteridium esculentum*) was also a staple food item and other uncultivated plants formed a seasonal food source.

Anderson and Smith (in Walter et al. 2006: 280) have characterized New Zealand prehistoric settlement as a “transient village” type. This involved “residence in base settlements (varying from small hamlets to fortifications) with regular travel to exploit resources, some of which were seasonal, or for social reasons” (Walter et al. 2006: 281). Undefended villages (*kainga*) consisted of a cluster of small houses, occupied by a number of extended family members, known as a *hapu* or subtribe (Ballara 1998). War, seasonal hunting expeditions, and social events may have brought a number of *hapu* together, with a coalescence into the larger *iwi* or tribe providing access to a wide range of resources and also intensifying social life through exchange and the commonality of achieving communal tasks (Allen 1996: 670; Phillips 2000a,b). Walter et al (2006: 281) note that New Zealand's archeological record shows “marked regional and chronological consistency in sedentism and mobility” across both the northern horticultural region as well as the south. They argue that the “transient village concept” applies to the northern horticultural zone as well as the south and persists throughout the whole prehistoric sequence. This settlement model is comparative with, and probably derives from, that found in early East Polynesian villages, where a range of resources was exploited from a home base. This was the type of settlement that New Zealand's first European visitors described.

ARCHEOLOGICAL SITES: ARCHAIC THROUGH TO LATE PREHISTORY

Sites surrounding Te Puna mission point to a rich archeological landscape, and indicate occupation in the area dating up to about 600 years ago (Best 2003b). Figure 4.2 and Table 4.1 demonstrate this archeological context. While this indicates the density of archeological sites surrounding the mission station itself, a similar number of recorded sites, not indicated, (both prehistoric and historic) continue along the coastline both to the east and west, and along the Mangonui Inlet.

Te Puna is situated in a valley below the steep slopes leading from Rangihoua Pa which lies to the east of the mission (Figures 4.1, 4.3, and 4.4). To the west, a gentle slope leads up to the ridge and promontory separating Rangihoua Bay from Wairoa Bay. Papuke pa (P05/25) is located on the point of this ridge. A stream runs through the valley into the center of Rangihoua Bay, running from a broad swamp at the north of the valley and also draining a much smaller swamp lying in a depression in front (south) of the site of the mission house, close to the beach. The curved ridge behind this swamp, where both the mission houses were once situated, is a Pleistocene beach ridge, c. 120,000

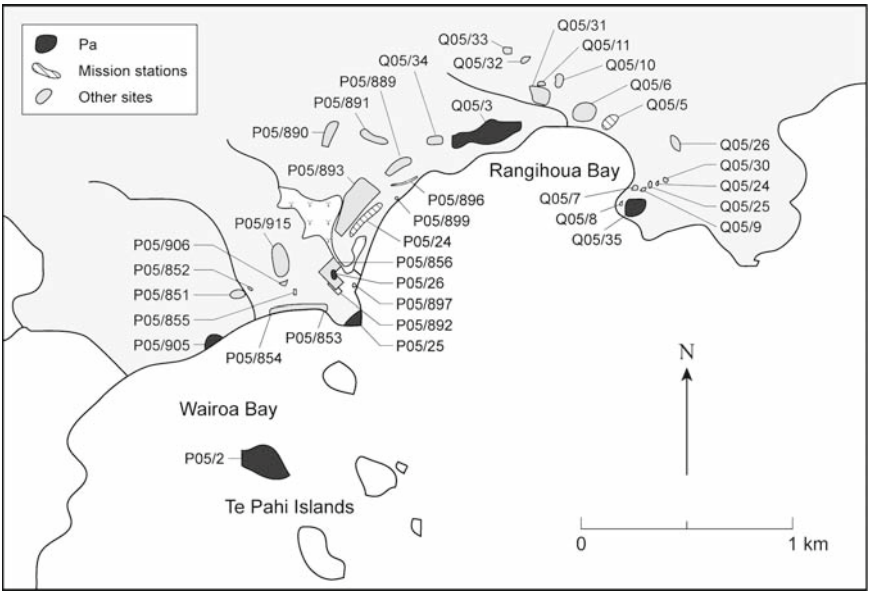

Figure 4.2. Rangihoua Bay and Wairoa Bay archeological sites

Table 4.1. Site record numbers, name, and description

S.R. No.	Name	Description
P05/2	Te Pahi Island	Pa associated with the chief Te Pahi
P05/24	Te Puna	Site of the mission station
P05/25	Papuke	Headland pa between Rangihoua and Wairoa Bays
P05/26		First recorded as "ridge pa," now difficult to identify
P05/851		Horticultural features (prehistoric)
P05/852		Horticultural features (prehistoric)
P05/853		Midden and hangi continuous in shoreline to 854
P05/854		Midden and hangi continuous in shoreline to 853
P05/855		Grave of John Tollis Hansen and Maria Ann Hansen
P05/856		Agricultural features – ploughing "lands"
P05/889		Terraces on the eastern ridge above the mission
P05/890		Terraces down a spur, 300 μ back from P05/889
P05/891		Terraces on ridge between P05/889 and P05/890
P05/892		Site of T. Hansen house and Norfolk Pine planted by T. Hansen
P05/893		Agricultural features – ploughing "lands"
P05/896		Historic pathway from Te Puna to Oihi
P05/897		Hangi exposed in eroding bank
P05/898		Horticultural features (prehistoric)
P05/899		Two sawpits on the shoreline, likely to date from the building of the Te Puna mission house
P05/905		Pa to the west of Wairoa stream
P05/906		Terrace on spur below P05/915
P05/915		Home of Hannah King Letheridge; waahi tapu associated with death of Ruatara
Q05/3	Rangihoua	Hilltop Pa
Q05/5	Oihi	Recorded as drains (prehistoric) and terraces (historic)
Q05/6		Horticultural features (Prehistoric?)
Q05/7		Terraces and pits
Q05/8		Terraces
Q05/9		Headland terrace
Q05/10		Ridge terraces
Q05/11		Terraced knoll
Q05/24		Pit
Q05/25		Terrace
Q05/26		Ridge terraces
Q05/30		Terraces and pits
Q05/32		Terraced knoll
Q05/33		Terrace
Q05/34	Rangihoua	Terraces outside the main earthworks, location of Earle's 1827 painting (Figure 4.X)
Q05/35		Headland pa

Figure 4.3. Rangihoua pa (Q05/3, foreground) and Oihi Mission Station (Q05/5, upper left), 2004. Horticultural features run down the slopes (Photo Kevin Jones, Department of Conservation, Wellington, New Zealand)

years in age, dating to the Last Interglacial (Horrocks et al. 2007). The smaller swamp contains a number of drains, presumably features associated with prehistoric gardening.

Analysis of pollen remains and diatoms (fossilized algae) in two continuous sediment cores taken from each of these swamps revealed aspects of the early environment in the valley and changes leading up to human presence approximately 500 years ago (Horrocks et al. 2007). Human presence is indicated in the small swamp core at a depth of 108 cm, by a consistent presence of charcoal, and possibly earlier

Figure 4.4. View over Te Puna looking west to Wairoa Bay, with Te Pahi Island at upper left, Papuke at extreme left, 2002

at a depth of 148 cm, with pollen and spores from "disturbance indicators." These "disturbance indicators" consist of vegetation such as bracken fern (*Pteridium*), or *aruhe*, the root of which formed a staple of the Maori diet (Colenso 1880; Davis n.d; Leach 2001, 2003), *tutu* (*Coriaria*) and tussock (*Poaceae*). Appearing at the same level were "agricultural microartifacts," starch grains and xylem cells of the introduced Polynesian plants *taro* (*Colocasia esculenta*), *kumara* (*Ipomoea batatas*), and phytoliths of paper mulberry (*Broussonetia papyrifera*). The other Polynesian introduced food staples, the yam and gourd (Leach 1984; Hargreaves 1963), are not indicated. A date prior to 500 B.P. could be given to this human disturbance as a radiocarbon date of 492 ± 42 B.P. was obtained from material at a depth of 90 cm in the same core. The upper 69 cm of the core consists of coarse gravel, with modern soil in the top section. Horrocks notes that this gravel, from Pleistocene dunes is most likely to have been redeposited in the swamp through human activity, giving better drainage to agricultural soils.

This explanation is consistent with the drains still evident in the swamp and the horticultural microartifacts. Horrocks has noted, in particular *taro*, which was grown on the flat and sometimes in wetland conditions (Barber 1989; Colenso 1880; Leach 1984). Modified soils with added gravel, along with sand and charcoal, are a common feature

of Maori gardening (Colenso 1880; Hargreaves 1963; Law 1968; Leach 1984). In the uppermost sections of both cores the arrival of Europeans is marked by the appearance of exotic pine (*Pinus*).

Pre-European Horticulture

Further evidence of pre-European horticulture can be found in a number of archeological features found across this landscape, areas of channels or drains running down slopes in parallel or converging lines (Table 4.1). Terminology for these features varies with the literature. They are variously described as drains, channels, boundary markers, ditches, or depressions. Barber (1989) prefers the term "ditch systems," as used in the New Zealand Archaeological Association's site recording handbook (Walton 1999). The problem with the use of any particular term is that it preempts an interpretation of function, as this is uncertain, and has been the subject of discussion for a number of decades (Barber 1989; Kennedy 1969; Leach 1984). Two series of these ditches (P05/851 and P05/852) can be found on the slopes above the Wairoa stream, dendritic in pattern at the top of the slope and converging into the swampy area beside the stream. A number of these features can be extrapolated from the 1950 aerial photo (Figure 4.1), as well as the similar ploughing "lands," discussed in a later section of this chapter (Figure 4.7). Similar features are recorded at Rangihoua (Q05/3), Oihi (Q05/5), and just to the north of Oihi (Q05/6) (Figure 4.3), also running downhill into a small swampy stream. The site of the Oihi mission, Q05/5, is recorded as a horticultural site (rather than historical) due to the large number of cultivation drains or channels that run down the slope. These features can be clearly seen, predating the European occupation, running down a slope later terraced for the construction of the missionary houses, toward the beach (Spencer 1983). Some of these systems may have continued in use into the contact period. Superimposed on these earlier features are those associated with the mission.

Hangi and Midden

Large areas of midden and *hangi* (cooking ovens) have been noted in the past along the shoreline of Rangihoua and Wairoa Bays, continuing to the further stream at the western end of Wairoa Bay, providing evidence of prehistoric occupation of the area.

Sites P05/853 and 854 mark the eastern and western extent respectively of a line of midden and *hangi* that extended nearly continuously along Wairoa Bay, from the rocky point close to Papuke (P05/25), west

to the stream mouth at P05/854. While the sites recorded are evident in the stratigraphy on the shoreline, similar subsurface archeological evidence was once likely to continue on the terrace above, along with possible structural evidence of habitation. However, much of this archeology may have been modified or destroyed by recent development (Best 2003b). Shell midden from these two sites has been radiocarbon dated, P05/853 giving a date of 712 years ±39 B.P., while shell from P05/854 was significantly later at 513 years ± 38 B.P. This evidence, along with further radiocarbon dates from Best (2003b) confirms the occupation of this terrace in prehistoric as well as into historic times. The historic occupation is likely to be associated with Te Pahi and his eponymous island located just off shore (Middleton 2003, 2005a). Similar features were noted at Rangihoua Bay during Lawn's survey in 1972, with *hangi* stones, midden and postholes recorded as part of the Te Puna mission site (P05/24). These features are no longer visible, destroyed by erosion and cattle damage. Further midden and *hangi* (P05/897) are still evident at the western end of Rangihoua Bay toward Papuke. A human patella was recovered from this area in 2002. Midden is also evident on the terraces (P05/889) above the Te Puna mission.

Sea mammal bone found in Wairoa Bay provides evidence of early occupation. Further evidence of settlement dating to the fourteenth century or earlier was found during a small excavation by Best (2003b) in November 2002. The investigation was situated on the terrace at the east end of the bay, close to Papuke. The earliest feature contained snapper remains, along with the leg of a small *moa* (*Pachyornis mappini*), a dog pelvis with cut marks, and some shellfish. Radiocarbon samples of wood (kanuka and pohutukawa) and shell (dog cockle) from this feature dated to the fourteenth century. Best (2003b: 39) notes:

> Cut marks on the dogbone are from a stone tool, and suggest that one of the flakes found in the deposit may have been used to either butcher the animal or remove the meat from the bone. Tool manufacture was also carried out, with a longbone segment scored across with a stone flake then snapped, the unsuccessful end result then discarded into a burning fire. The feature could well represent just one meal and the activities that were carried on around it, that took place some 600 years ago.

Three other radiocarbon samples (shell and short-lived wood species) from Best's features one, three, and four gave dates slightly later, overlapping and continuing through to the twentieth century.

Horrocks (in Best 2003b) examined material from Best's excavation at Wairoa Bay and found *taro* microfossils in the early deposit and *kumara* starch grains in later material. Pollen remains indicated an absence (or low values) of tall forest trees and high values of bracken fern (*Pteridium*) along with *puwha* (*Sonchus*), *tutu* (*Coriaria*), fern

(*Pteris*), and hornworts (*Anthrocerotae*), inconspicuous plants that colonize freshly exposed soils. The presence of fern and the other "disturbed-environment colonizers" indicated that anthropogenic forest clearing had already happened or was taking place at the time that the features Best investigated were formed (Horrocks in Best 2003b: 28). Pollen remains from two tall trees (rimu and matai) along with charcoal from the same feature, which included kauri, point to remnants of forest in the area at the time.

The presence of bracken fern (*Pteridium*) here and in the small swamp at Te Puna confirms the observations of missionaries living in the Bay in the early nineteenth century as well as other European visitors. Nicholas (1817 I: 190), companion of Marsden on the 1814 voyage, reported that fern, covering "the greatest part of the land" was the staple item of diet of the Maori. The botanist Cunningham (n.d.) who spent several months in the Bay of Islands in 1826 observed that all the hills were covered with fern root. While Cunningham considered that this was a "dire resort" for Maori when other crops failed, the missionary Richard Davis (n.d. November 1826) believed, as did William Colenso, that the indigenous New Zealanders were always well supplied with food, and ate fern root, which did not need to be cultivated "from choice and not necessity." Colenso (1880: 22) provides details of the proper preparation of fern root, noting that "The old Maoris thought highly of it, and always liked it, even preferring it in the summer with fresh fish." Leach (2001, 2003) reviews the differing explanations of Colenso, Cunningham, and Davis for the role of fernroot in the Maori diet, a fibrous, tough food that Europeans generally disliked. Explanations ranged from the "seasonal stop-gap," a staple food item during spring and early summer when the last season's harvest was exhausted and the next was still immature, to "rations for people under stress," such as siege provisions, and "default staple where cultivation of crops was difficult or impossible," for example in the South Island south of Banks Peninsula, where the climate did not allow the cultivation of *kumara* (Leach 2001: 34–35). Leach also notes that fernroot was a good food to carry when traveling, and was used by European explorers. It was light, easily prepared and replenished en route, and was only finally replaced for this purpose by flour. But as Colenso and Davis pointed out, this was a food also enjoyed for its own sake, outside any of the explanations or rationalizations required by Europeans.

Colenso (1880) remarks that in earlier times (that is, before the middle of the nineteenth century) paper mulberry (*Broussonetia papyrifera*), known as *aute* by the Maori, microfossils of which were found in the small swamp at Te Puna, was commonly grown, although at the time of his writing, none remained. It was common at the time

of Cook's visit, when he saw it growing in plantations in the Bay of Islands (Beaglehole 1955: 217). It was worn in the hair and through the ear as a decoration, as shown in the drawing of Te Uri o Kanae (Figure 2.6) and also used to make ornamental paper kites. Its cultivation in New Zealand only produced plants of a small size, not large enough to produce clothing as in other parts of Polynesia. In 1835 Colenso saw one small tree of *aute* growing in the Bay of Islands, at the head of the Kawakawa River, in an old plantation. This died soon after.

Late Prehistory: A Defended Coastline

Defended *pa* are the predominant archeological feature in the contemporary landscape of Rangihoua and Wairoa bays. The coastline is dominated by a number of *pa* located on the headlands, with terraces and defended terrace sites scattered between these. Fortified sites such as these are found throughout northern New Zealand, associated with warfare and the intensification of agriculture from about the sixteenth to the late eighteenth centuries (Davidson 1984; Schmidt 1996).

Rangihoua (Q05/3), located on the highest point in Rangihoua Bay, appears to be the most preeminent of these sites (Figures 2.4 and 3.1). It is the *pa* in the northern Bay of Islands most-commonly referred to in missionary and other historical literature, and occupies a larger area than any of the other *pa* in Rangihoua and Wairoa Bays. Defended by a single ditch on the western side and a series of three ditches on the east (Spencer 1983), it was further fortified in the past by palisading (Earle 1909; Marshall 1836). Numerous terraces, both within and outside the defences would have supported houses, storage structures, and activity areas. Other terraces extend outward from the main *pa* toward the east, beyond Oihi, and toward the west, including a series which lead down the spurs away from Rangihoua toward the Te Puna valley (P05/889, 890, 891). The terraces of P05/889 run down a spur from the hill named in Turton (1879; see Chap. 3) as "Rorekahu," connecting the *pa* with the valley that was important for cultivation. The terraces of P05/890 and P05/891 extend along a ridge to the north and east above the valley. The terraces on all of these sites may have been used for house structures associated with cultivation at Te Puna.

The eastern end of Rangihoua Bay is defended by site Q05/35, a headland cut off by a defensive ditch and bank, with a series of terraces on the seaward side of this. The headland at the western end of the bay, Papuke (P05/25), has similar defenses. This *pa* is cut off from the ridge behind it by a deep defensive ditch and high bank, with steep cliffs leading to the sea on the south. There are several terraces within the defenses. A ridge *pa*, P05/26, was recorded in 1972 behind Papuke, leading to the Te Puna valley. Although this appears to have largely

eroded away, one terrace is still evident, with midden exposed in the topsoil. Richard Taylor's drawing of the mission (Figure 4.12) has a *whata* (or storage platform) close to the same place.

Papuke divides Rangihoua Bay from Wairoa Bay, to the west. Just offshore at Wairoa Bay stands the heavily terraced *pa* of Te Pahi Island (P05/2), commanding the western and southern approaches to Te Puna (Figure 4.4). It stands among four islands known collectively as the "Te Pahi Islands." While other evidence is ambiguous, the archeology of this island suggests it is the likely location of Te Pahi's house, given to him by Governor King in 1806 and erected by the carpenter of the *Lady Nelson*, and attacked by whalers in 1810. The defensive earthworks and terraces of Te Pahi Island (also known as Turtle Island for its shape) can be clearly seen from the mainland and the sea and suggest that it was the most occupied of the group, fortified to withstand attack. Missionary journals (Elder 1932, 1934; Kendall n.d.b) note that the island remained uninhabited after the attack because it was highly *tapu*. Passing Te Puna from the sea, Marsden noted his implicit belief in Te Pahi's innocence in the *Boyd* affair, and sadly remarked

> I never passed Tippahee's Island without a sigh. It is now desolate, without an inhabitant, and has been ever so since his death. The ruins of his little cottage, built by the kindness of the late Governor King, still remains. (Elder 1932: 87–8)

Te Pahi Island was gazetted as a Native Reserve in 1981 "for the purpose of a place of scenic interest" (New Zealand Gazette No. 29 1981: 728).

Evidence for contemporaneous occupation of the mainland at Wairoa Bay can be found in a number of sources. To quote again from Savage (1973 [1807]: 22)

> The capital of this part of the country, which is situated partly on the main land, and partly on a small island, is called Tippoonah, and consists in the whole of about an hundred dwellings. On the main the dwellings of the natives are surrounded each by a little patch of cultivated ground; but the island is appropriated to the residence of a chieftain and his court, where no cultivation is carried on.

Savage's observations confirm Te Puna, stretching from the island to the long terrace at Wairoa Bay and over the Papuke headland, as initially the most important location in the Bay of Islands and the north for trade between Maori and European (Middleton 2003). A further map drawn by the French on a visit in 1824 names Te Pahi Island, but not Te Puna (Middleton 2005a: 165; Spencer 1983). The location of these islands close to the long (natural) terrace at Wairoa Bay, along with the 1820 map and historical reports of Te Pahi's village on the mainland, associated with the island, suggests that the historic midden at Wairoa Bay is likely to have been associated with Te Pahi's mainland village

and occupation at this time. Occupation of Wairoa Bay continued into the era of the mission. John King's (n.d.a,b) journals note regular visits to preach at Wiriwiri, a village located at the eastern end of the bay close to Papuke and sites P05/853 and P05/854, as well as Wairoa, a village toward the western end of Wairoa Bay.

A knoll further inland overlooking the Te Puna valley, Rangihoua Bay, and Wairoa Bay as well as the Bay of Islands harbor is recorded as site P05/915. This has been the location of European occupation in the nineteenth and twentieth centuries, with a farmhouse and associated buildings there. This knoll is also likely to have been intensively occupied in prehistory given its prominent outlook and position. While any surface features on the knoll itself are no longer apparent due to recent building and landscaping, a terrace can be found on the slope toward Wairoa Bay (P05/906), likely to have been associated with further terracing and habitation on the knoll above it. From a close reading of the landscape, the archival material, and historical literature, this prominence presents itself as the site of Ruatara's planned town at Te Puna and the location of the *wahi tapu* associated with his death (Elder 1932), discussed in more detail in the next section. This is confirmed by T. M. Hocken's caption to a photograph of Te Puna dated c. 1905 (Middleton 2005a: 169; the 1906 photograph in Figure 4.5 is taken from just below this knoll). Part of Hocken's caption reads

Figure 4.5. Te Puna, 1906 (Hocken Library, Dunedin, New Zealand. S04–009b)

> On the top of the slope, *Ruatara* in his love for all English proposed to lay out a town with streets etc. *a la Sydney*. He was moved here in his last illness and there died in *1815*.

These sites collectively point to a long, continual prehistoric occupation along Wairoa Bay and Rangihoua Bay, with a local population returning to the area to exploit resources and carry out seasonal horticulture in the manner Walter et al. (2006) have described.

TE PUNA 1905 AND 1906

A photograph taken in 1906 (Figure 4.5) shows the Te Puna valley at this time and demonstrates some of the historic and prehistoric features discussed above. This image can be compared with Figure 4.6, a photograph taken from a similar point in 2002.

The site of the King mission house is just beyond the trees in the center of the valley. In the 2002 photo, archeological investigations can be seen in progress on the site of the King house. In the 1906 photograph relevant features are identified by letter. Many of these features are also visible in the 2002 photograph. The hill named "Rorekahu" stands at the back of Te Puna valley. The white cottage (B) visible in both the historic images in the foreground of the mission station site was built in the late nineteenth century, but burnt down in 1933 (Skudder personal

Figure 4.6. Te Puna from a similar aspect, 2002

communication 2002). The remains of the house are still evident today, with concrete front door steps and chimney base standing just outside the old garden. The gabled roof (A) just visible through the trees to the right of the cottage may be the eastern-most of the outbuildings associated with the mission, although it is not the mission house itself. This structure had a different roofline (see Figures 4.12 and 4.13) and was likely to have been demolished before the date of this photograph (Middleton 2005a). The tree (pohutukawa or puriri) just to the left of the white cottage is still standing at the rear of the garden in the 2002 photograph. The second mission house, built by James Shepherd, is no longer standing. The exact location of this house has not been identified, although as Figures 4.12 and 4.13 show, it was further to the east on the same ridge above the small swamp. Other buildings visible in Figure 4.5 include a small shed near the flax along the shoreline (G) and another small shed or other building on the slope of the ridge leading to the small swamp (F), similar to a structure shown in one of Taylor's 1839 drawings (not illustrated; see Middleton 2005a: 197). Other archeological features connected with the mission station include two sawpits and a pathway. The sawpits (P05/899), used to cut timber for the mission houses, are located on the shoreline not far from the house site. These are two pits approximately 10 μ long dug out at right angles to the beach, over which logs were cut using pit saws. While they are now filled in, the outline of the original indentations remains. In the 1906 image, a roofed structure is visible over the sawpits (E). Sawpits were often covered over, no doubt to provide shelter for the sawyers who spent long periods of time working there. The pathway (P05/896) running from the mission station over the hill to Rangihoua and Oihi (Figure 4.6) is noted as that used in early mission days to walk between Oihi and Te Puna (Mountain pers. comm. September 2002). It can be seen in both the 1906 (C) and 2002 photographs cutting diagonally across the hill behind the mission site, below the terraces of P05/896, as well as the Old Land Claim maps (Figure 3.3). These terraces are also evident in both the historic (D) and contemporary landscape. In both the 1906 and 2002 photographs, Oihi can be seen just beyond the point in the middle distance. In the 2002 image, some of the terraces where the missionary houses were built are still evident. In the 1906 image a house (H) can be seen, still standing at Oihi, in an enlargement of the image.

AGRICULTURE: PLOUGHING

Throughout Te Puna and the slope leading to Papuke, to the west, the landscape is covered with a series of ridges and furrows similar to those noted above, associated with prehistoric/protohistoric Maori

horticulture and agriculture. However, these are lands, artifacts of the horse-drawn plough, regular in size and quite parallel. Close examination of the 1950 aerial photograph of Te Puna (Figure 4.1) reveals the extent of these still apparent at that date. Figure 4.7 shows these features, as well as the similar ditches or channels, extrapolated and mapped from the 1950 aerial photograph. A large number of these are still visible on the ground. The most evident is a discrete series to the north of the mission site (P05/893). Another series (P05/856) is evident to the west of the stream, and continues up the slope to the large Norfolk pine (P05/892), almost continuous over this hill. P05/893, situated about 50 m behind the mission house, is a series of 13 lands,

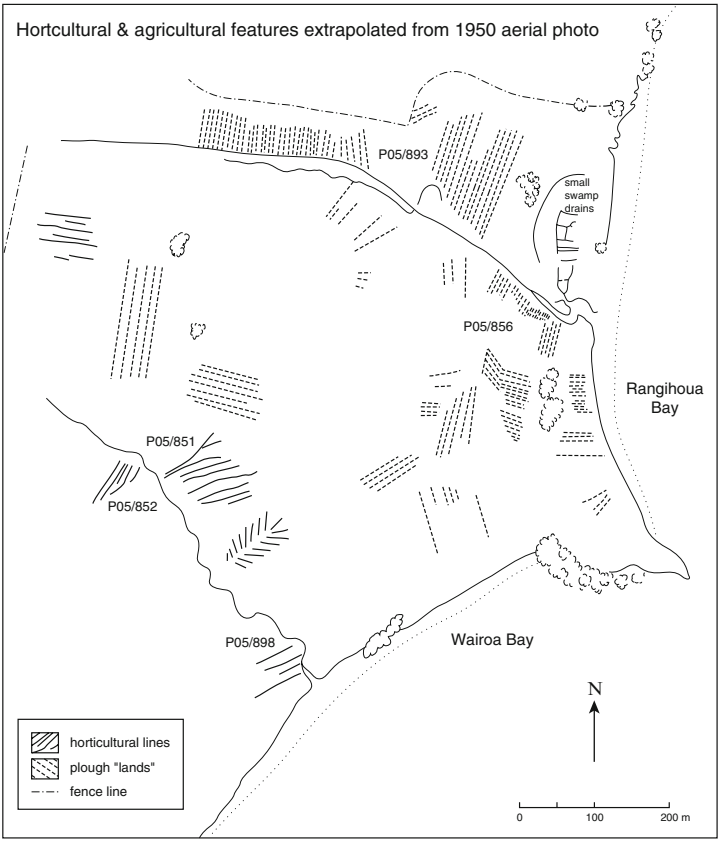

Figure 4.7. Horticultural and agricultural features extrapolated from 1950 aerial photo (Figure 4.1)

parallel depressions about 10 m apart, about 0.3 m in depth, 1–2 m wide and up to approximately 100 m in length, separated by low mounded "ridges."

Similar agricultural landscapes have been documented in Australia (Connah 1993; Twidale 1971, 1972; Twidale et al. 1971) and in Britain (Orwin and Orwin 1938), resulting from the use of implements and machines developed in the early years of the industrial revolution. In Australia lands vary in width between 2 and 18 m and are generally 50–65 m long (Twidale 1971). In some areas the lands are visible from the air, and in aerial photographs, with "many sets of furrows, some faint, some remarkably clear, and some aligned at obtuse angles to each other because of cross-ploughing," while on the ground little evidence remains (Twidale 1972: 52). Twidale (1971: 219) explains that lands resulted from the British practice of ploughing a deep central furrow by running the plough in opposite directions; "Thereafter the ploughman returned on either side of the top throwing soil toward, and filling in the double furrow, and then as the runs continued on alternate sides of the top, making a broad ridge known as a land." This was a lengthy procedure which involved working over the same strip of land a number of times in order to ensure the area beneath the initial two ridges was ploughed. "If a ploughman merely traversed in opposite directions throwing soil toward a central ridge, he simply threw soil over an unploughed strip" (Twidale et al. 1971: 498). Ploughing was always carried out across the contours of slopes, as is seen at Te Puna at P05/856 (Figure 4.7). This was safer than working along the contour of a hill, which created problems with controlling the plough and the direction the soil fell. Ploughing with the single share plough was carried out in the nineteenth century for cereal cultivation, in particular wheat. In Australia it continued to be used up until the middle of the twentieth century, and it is likely that the same could be said of New Zealand (Walton 1982).

Although the ploughing lands at Te Puna cannot be clearly identified as features dating from the missionary occupation, as ploughing could have continued on into the twentieth century, these are an artifact of methods associated with early European agriculture and settlement, and the use of the type of plough John Butler first to put to use in New Zealand soil at Kerikeri in 1820 (Barton 1927). Lands remain if the area is allowed to revert to pasture after the abandonment of cereal cultivation, while the use of later cultivation methods tends to destroy the pattern of ridges and furrows (Twidale 1972).

Connah (1993: 91) points out that lands are "remarkable archaeological evidence for the strength of a tradition and the persistence of cultural practices. The man behind the plough imprinted onto

the South Australian landscape a pattern that he had learnt in his homeland." These features remain in the landscape as artifacts of early European agriculture and pastoralism, along with the items of material culture recovered from the Te Puna mission investigation, such as scythes, reaping hooks, and spades (see Chap. 5).

The Te Puna landscape is scattered with markers from both Maori and European occupation. These are visible in features like the ploughing lands, Norfolk pines, and early house sites (Figure 4.4). Other less evident marking places, such as Ruatara's *wahi tapu*, also remain reflecting the power of the chiefly individual over the landscape.

STRUCTURAL FEATURES OF THE MISSION HOUSE

A field survey conducted in early summer 2002 identified the likely location of the mission house, marked by a depression in the ground in the area shown on Old Land Claim maps (Figure 3.3) as the mission house. Several months later a team from the University of Auckland returned to investigate the site. A 20 m base line running east–west, along the edge of the depression was laid out, intersected by a north–south line running from squares E to M (Figure 4.8). A total area of approximately 93 m2 was excavated. In the text, references to the

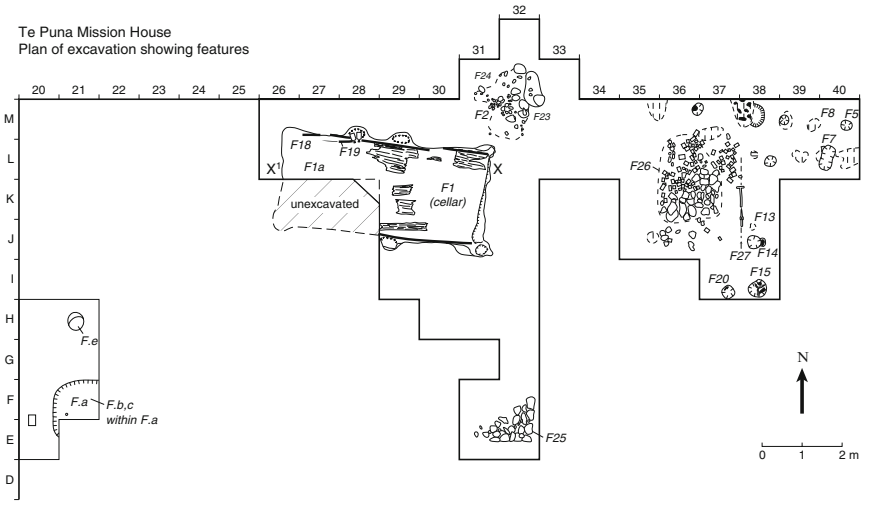

Figure 4.8. Plan of excavation showing relevant features, Te Puna Mission House investigation

orientation of the excavation and the cellar walls are made according to this baseline orientation. Magnetic north is actually located at a point between the north and the east baselines.

The largest structural feature uncovered was a cellar, designated Feature 1, approximately 3 m × 5 m × 1.5 m deep, likely to have been situated under the main body of the house (Figures 4.8 and 4.9). The southwest quarter was not excavated, but was left in situ when the cellar was back filled. Structural features in the cellar included four round postholes approximately 50 cm in diameter along the northern wall, with complete bottles recovered from the bases of these postholes. Two similar postholes were located on the opposing south wall, with two more postholes likely in the unexcavated quarter of the cellar. The timbers, likely to have consisted of whole tree trunks, had been removed from these features. Further horizontal recesses in the clay of the eastern cellar wall are likely to have been for shelf supports. A glass trade bead was found in one of these recesses.

Some 3–4 m out from the southeast corner of the cellar, a flat triangular stone feature (Feature 25; Figure 4.8) with mortar (lime cement) in situ indicated the likely location of this corner of the house itself. Out from the opposing northeast cellar corner more stones and mortar indicated a possible second corner of the building (Feature 2). Features 23 and 24, adjacent to Feature 2, shallow scoops filled with mortar and stone, may have been part of this corner structure. Attempts to

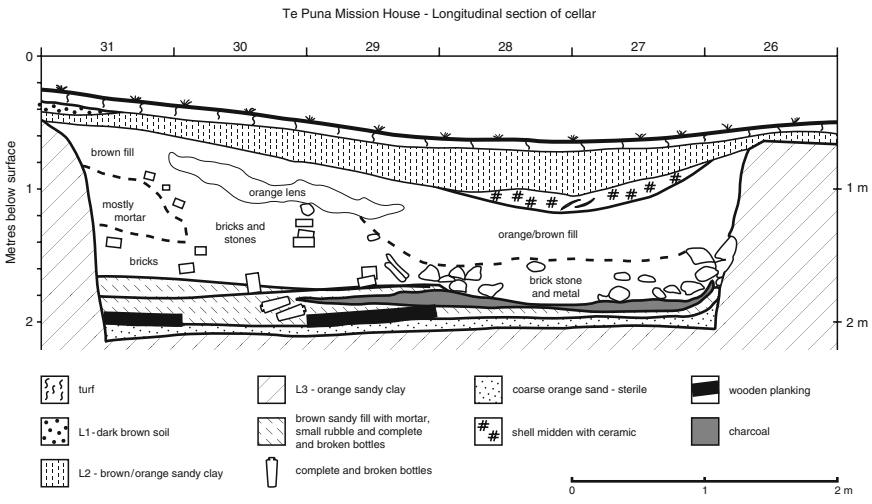

Figure 4.9. Profile of cellar, looking toward the south, Te Puna Mission House investigation (see Figure 4.8 for location of cross section)

locate similar structural features at the south and northwest corners, in order to prove that features 23 and 24 were part of a rectangular house plan, were unsuccessful due to time constraints. It is also possible some features may have been destroyed at the time of, or after, demolition. Squares E to H, 20 and 21, in the western area were excavated in an effort to locate a third corner of the house (Figure 4.8). While there was a large depression in 21 G–F (Feature A), and a series of possible postholes along with a small fire scoop (Features B–E), no definite structural features were identified.

Approximately 7 m from the east baulk of the cellar, a series of postholes pointed to the likely location of an outbuilding associated with the house (Features 5, 7, 8, 11, 14, 15; Figures 4.8 and 4.10). Just to the west of these postholes, between the postholes and toward the east wall of the house, a cobbled path, and above (or postdating, stratigraphically) part of that, a flat stone feature indicated the possible location of an entrance into the eastern lean-to of the house (Figure 4.11). In the same area, at the edge of this cobbled surface, a number of metal artifacts were found in layers one and two in a line between squares 37 and 38, from squares M to J (feature 27), indicating that they may have been left lying against a wall or wooden fence. These artifacts included a large hinge, a pickaxe, an axe, a metal bar, and pieces of a cast iron cooking pot (Figure 4.8).

The structural features consisting of a main building and lean-tos at both the east and west sides, with a further out-house to the east are in keeping with drawings of the house from the 1830s and 1840s (Figures 4.11 and 4.12).

Attempts to locate the chimney indicated in drawings (not illustrated) on the southwest wall of the western lean-to were not successful, perhaps because the chimney may have been entirely flattened at the time the house was demolished, with most of the bricks being pushed into the cellar.

According to Fergus Clunie (pers. comm. March 2002) the flat stone corner (feature 25) is consistent with early CMS building methods used at the Kerikeri Mission House. A similar feature can be seen beneath a building at the Te Papa mission station in Tauranga in Figure 5.8. Floor joists or beams were often placed directly onto these foundation features instead of onto posts. At the same time, small postholes relate to the outbuildings and lean-to on the eastern edge of the site. Some of these postholes were filled with broken metal artifacts (such as flat irons and pieces of broken goashore pots) in a method that Challis (1993) suggests was used to shore up timber posts at the Bedggood blacksmith building, associated with the Waimate mission house, at a time before concrete was available.

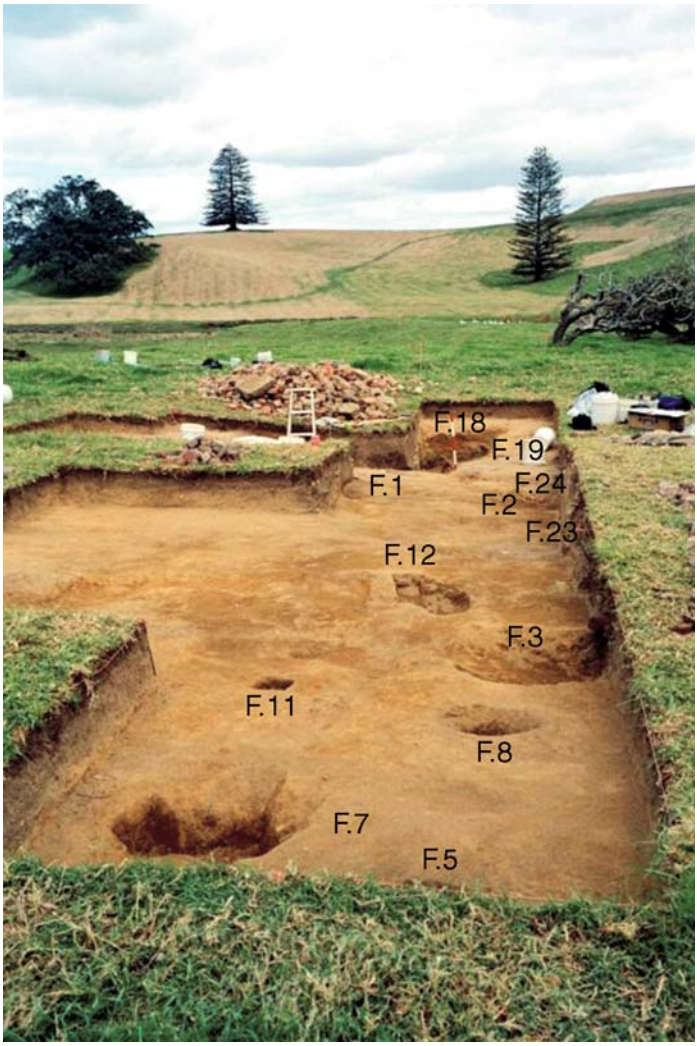

Figure 4.10. Excavation area showing relevant features, Te Puna Mission House investigation

The Cellar Fill and Floor

Figure 4.9 represents a profile of the cellar stratigraphy. This was drawn early in the investigation, prior to the excavation of the cellar fill, looking toward the south. Above the cellar fill, Feature 1a, located in L 27 and 28, consisted of shell midden and broken ceramics including

Figure 4.11. Te Puna Mission Station, looking toward the west, 1839 (Artist Richard Taylor, 1805–1873. Alexander Turnbull Library, Wellington, New Zealand. E-296-q-071–1)

Figure 4.12. Te Puna Mission Station, looking toward the east, c. 1839–1841 (Artist Richard Taylor, 1805–1873. Alexander Turnbull Library, Wellington, New Zealand. E-296-q-160–1)

an Asiatic Pheasant ashet (large serving plate). This feature in the upper layers continued into the unexcavated quarter of the cellar. Fill in the main body of the cellar indicated demolition of the remains of the house. The body of the cellar was filled with a mix of bricks, mortar, wood, stone, and artifacts of all material including metal, glass, broken ceramic material, shell, and faunal remains. Beneath this fill artifacts found in situ on the wooden floor included complete bottles, buttons, wrought nails, and iron tools, as well as fragments of broken cast iron cooking pots. The presence of charcoal and burnt material along the western edge suggested a fire, perhaps as part of the demolition process. Within the cellar along the northern baulk there was a rectangular area of pebbles (Feature 18) at about 75 cm from the surface in M27, which merged into Feature 19, a large lens of charcoal below the cellar fill in L28. Broad wooden planking was found in situ lining the floor of the cellar and at the base of the walls (Figures 4.8 and 4.9). Figure 4.10 illustrates the Layer 3 surface of the investigation with relevant features numbered.

THE MISSION HOUSE STRUCTURE

Drawings and Documentary Material

CMS missionary Richard Taylor, who arrived in New Zealand in 1839, visited Te Puna first on September 25 1839 and again in January 1841 (Taylor n.d.). He continued to visit the mission from time to time, usually when traveling north between Kaitaia or Whangaroa and the Bay of Islands, until 1843 when he was posted south to Wanganui. Taylor penciled three drawings of the mission on these visits, two of these illustrated here (Figures 4.11 and 4.12). These drawings, along with one done by Hutton (illustrated in Middleton 2005a: 199) provide the best visual record of the Kings' house. The more idealized, westernized view published in the Church Missionary Paper and Missionary Register in 1838 (Figure 3.2, "Mission Station, Te Puna"), probably drawn by William Wade, is not so useful in considering the structure of the building. Taylor (n.d. Vol. 2:153 25 September 1839) considered that the house was "situated in a romantic spot," unlike William Wade, quoted in Chap. 3, who evidently disliked the place.

Drawings by both Taylor and Hutton, looking toward the northeast, show what appears to be a vertical boarded, or board-and-baton building, roofed with wooden shingles. Two windows either side of the front door face out toward the bay, with two dormer windows in the hipped roof suggesting attic bedrooms. The lean-to shown on the western

side of the main building has the same vertical lines drawn on it, with a chimney in the south corner identifying this lean-to as the most likely location of the kitchen. A fence runs along the east, close to the house, and along the south, fencing in the garden that looks rather wild and unkempt. In Figures 4.11 and 4.12 lean-tos at both the eastern and western sides of the main building can be seen. Beyond the eastern lean-to is an outbuilding close to the house, and beyond that again another low shed or outbuilding. Taylor's 1839 drawing, Figure 4.11, looking toward the west, shows the eastern side of the house in more detail. The second mission house, built by James Shepherd, is situated further along the old beach ridge toward the west, while on the ridge in the distance the gabled roof of Thomas Hansen's house can just be seen. Taylor's second drawing, (Figure 4.12) undated but most likely drawn either on his visit in 1839 or subsequently in 1841, gives a view of the mission station from the headland, Papuke. Two figures in European clothing sit on the bank; while on the ridge back from them the *whata* (storage platform) can be seen. The second mission house has a chimney on the west and a third building is located behind the house itself. Between this house and the Kings' is the garden. This drawing shows the outline of the fencing running in front of the Kings' house to the edge of the swamp, indicating that perhaps this was an area enclosed to contain animals. While the fencing is no longer present in the 1906 photograph (Figure 4.5), the fence line running through the swamp is suggested by a line of flax running in the same direction.

Both the mission houses evidently had cellars. While Anne and John Wilson were stationed at Te Puna John Wilson tried to help one of their servants, a young woman that men from the pa had captured to take back as the third wife of a chief. Wilson noted:

> Today the girl escaped from her captor and returned to our house, where she concealed herself in an underground place. The chief and his party appeared shortly afterwards. He was a man of middle age, rather short, broad set, strong, and active. He came at once to me and furiously demanded the woman. I replied, 'You must find her,' and as I was afraid that he would enter the house, I fastened all the doors and then sat outside in the verandah, he and his men sometimes sitting near me or walking before me. Late at night they withdrew. (Wilson, John n.d.)

Comparative Structures: Other CMS Houses

The journal of Thomas Surfleet Kendall (n.d.), son of Thomas Kendall, gives some insight into missionary building methods used in the 1820s and likely to still have been in use 10 years later. Thomas Kendall junior kept his journal from 1822 to 1824, while he was building

Kendall's church at "Bethel," about 4 miles from Rangihoua, near Kaihiki in the Te Puna inlet, and at Oihi and Matauwhi Bay near Kororareka. Kendall junior appears to have been working on the family home at Oihi in 1822, although his father was soon to be dismissed from the CMS (Elder 1932, 1934; Binney 2005). The house at Oihi had "waterspouts" along the eaves and three water troughs on the roof. Kendall (n.d.) notes:

> October 16 & 17 Employed in making & finishing the kitchen window frames 11 feet by 3 1/2 feet, also putting up the same & repairing part of the front of the house.
> 19. The Rev. Thos Kendall employed from the commencement of this month in superintending 4 native sawyers, & sharpening pitsaws, and assisting me in carpenters work. Used 75 Squares of Glass.
> 21st. Employed in casing 2 windows for the study & parlour. The Rev. Thos Kendall is under the necessity of sharpening the pitsaws himself, there being no other men in the settlement willing to do it.
> November 25th During the last quarter of a year the Native sawyers under the superintendence of the Revd Thos Kendall have sawn about four thousand feet of boards. The Revd Thos Kendall's dwelling house is now in a good state of repair, having cover'd the roof with new boards in front and painted them, repair'd the passage between the house & the school house & done such things as were needful to be done.

Kendall also describes repairing the sitting room chimney (indicating that this house had more than one), making moldings for and building an "observatory," building a rabbit coop, digging drains behind the house and paving the "roads" (paths) between some of the houses with slabs of wood. Rooms in the house were lined with planed boards. It is interesting to note that in February of the following year (1823) Kendall's building activities ended abruptly and he was employed from the 8th until the 25th in making packing cases with the assistance of the carpenter of the *Asp*. On the 26th the household moved with all their belongings, in seven whaleboats to Pomare's residence at Matauwhi Bay, near Kororareka, where once again Kendall junior began his usual employment of sawing and planning boards in order to build another house for the family. This upheaval, explained by Kendall's conflict with other Oihi missionaries including King, over his adultery with the daughter of the chief Hauraki, was followed by his expulsion from the CMS at the end of 1823. These events are discussed in detail in Binney's (2005) biography of Kendall.

William Hall's (n.d.) diary for 1816–1825 is also a useful source for contextual material. Hall, joiner and carpenter, was a busy man in the early years of the Oihi settlement, constructing houses, a schoolhouse, two boats, a barn and a chapel among other smaller structures for all the settlement's inhabitants. Houses were surrounded with gated

pailing fences 8 ft. high in an effort to keep the settlement secure from *taua muru*, plundering parties, who occasionally tried to exact *utu* from missionaries for cultural offences, sometimes made unawares. His journal continually refers to the quantities of timber and plank sawn by Maori sawyers who appear to have been constantly at work at the Oihi saw pit. Timber was sourced from the "timber grounds" on the south side of the Bay of Islands, and logs rafted back to Rangihoua Bay. Sawn timber was not only used for building houses at Oihi, and later Kerikeri, but also to fill the hold of the *Active* and other ships, to be sold on return voyages to Port Jackson. Hall made furniture – tables, cupboards, boxes, as well as joinery for windows for the houses, built chimneys with bricks and stone, and mentions making a brick oven. When discussing many of the buildings, including the schoolhouse, he mentions lofts (as does Kendall, above) suggesting that this may have been a useful means of economizing on building resources by using the roof space. Hall also notes work carried out by the blacksmith at Oihi. He made "trade," metal items that were used to pay Maori for their work at the mission, such as adzes and axes (Middleton 2007d). On the arrival of a blacksmith from a ship in the Bay, Hall (n.d. September 4 1820) set up a forge and "set him to work to make nails and other Iron work, for the benefit of the Settlement."

THE INVESTIGATION: FEATURES AND ARTIFACTS RELATING TO THE STRUCTURE

Features uncovered during the archeological investigation relate clearly to a structure located over the area of the cellar and corners located in the southeast and northeast (Figure 4.8). Features to the east of this, that is postholes and the cobbled path, identify further structures beyond the main part of the house, the eastern lean-to and outbuilding. The area covered by these features suggests a house of approximately 110 m2 for the ground floor of the main building and two lean-tos, with the eastern outbuilding approximately 13 m^2. Drawings of the building point to an upper storey, or loft, as mentioned above, with attic windows. Metal items recovered from the investigation included building fixtures as well as sheet metal and fasteners such as nails, spikes, and screws. Tools found related to both building as well as agriculture. A large proportion of the fill of the cellar consisted of bricks, no doubt from the demolished chimney which can be seen in drawings of the King house, located at the western end of the building. A number of large stones also formed the fill, possibly hearthstones or used as part of the chimney structure.

Structural Artifacts

Adams (2002) argues that nails can provide the key to dating historic sites, especially where there is no documentary evidence available, and calls for regional nail chronologies such as that developed by Wells (2000), with the consideration of local and regional variations caused by factors such as importation and transportation. In Australia, Varman (1980) had earlier developed a similar chronology. This is relevant in the case of the mission house, where no documentary records exist of the date of its abandonment or demolition and the presence of both wrought and cut nails, including numbers and proportions, may indicate the period at which house maintenance ended (Middleton 2005c).

In the Bay of Islands, long-term restoration and investigation work on heritage sites such as that carried out by Best (1995, 1997, 2003a), Challis (1993, 1994) and Fergus Clunie, curator of the Kerikeri Stone Store and Mission House, has yielded some of this specific local information about nail chronology. In this region of New Zealand, the CMS imported British-manufactured wrought nails from Port Jackson until the early 1840s, when the cut nail started to become more popular. Both wrought and cut nails have been found at the Kerikeri Mission House and Stone Store, used in building contexts dating to about 1860. From the 1870s onward the wire nail became increasingly popular, while the use of cut nails such as brads continued for the nailing of floors and other areas where a tight fastener was required (Clunie pers. comm. September 2002). As noted above, Hall's journal records that wrought nails were hand-forged at Oihi, and this may have continued at many of the settlements, as it was a simple matter to set up a small forge. Quantities of iron accounted for at the CMS store suggest that it was likely that this metal was reworked at mission settlements (Challis 1993, 1994; Middleton 2007d).

Analysis of the nails recovered from the investigation and their location within the excavation areas demonstrated that wrought nails and spikes were the most commonly used in the mission house structure, with mostly wrought nails recovered from the cellar floor (Middleton 2005a–c). This is consistent with the type of nail (wrought) being used by the CMS at the time the house was built, according to CMS records kept at the Kerikeri mission house and the type of nails recovered from comparative structures such as the Kerikeri Mission House. It is also consistent with the historical research that demonstrates that this was an early nineteenth century structure.

Copper and zinc sheeting recovered is likely to have provided areas of waterproofing (possibly around the chimney and windows), spouting or a water tank, as noted above (Kendall, Thomas Surfleet n.d.). The largest

quantity of sheet copper, 1.651 kg, was found below the turf and in layers one and two in the eastern squares of the excavation (K/L/M/36–40), and around the stone southeast corner foundation feature (F. 25).

Other building fixtures recovered included seven hinges of varying sizes. The mission store issued a variety of hinges in the early 1830s: butt hinges, box hinges, and T hinges (Appendix F). The appearance of the single complete hinge suggests that this may be the T hinge, while the other hinge fragments are of the same form with the horizontal arm missing. Other metal items consist of tools relating to both building and agricultural work. The pickaxe recovered from the surface (feature 27), spades found on the cellar floor and in the fill, as well as axes were the kind of tools required to excavate the cellar and prepare wood for building. They could also be used for agriculture and are discussed further in Chap. 5.

Most of the whole bricks and fragments retrieved from the site were thin, between 10 and 11 cm wide, only 4–6 cm deep, and 21–22 cm in length, resembling the dimensions of Sydney-made bricks (Simon Best personal communication 25/06/2003; Middleton 2005a,b). One of the incomplete bricks has a clay pipe fragment in the matrix, perhaps a signature left by its maker, or merely ceramic debris dropped in. The clays used for these bricks vary from a deep red with dark flecks to an orange. Some of the dark red bricks are under-fired and very crumbly. While the bricks recovered from the Te Puna mission were used in the building itself, the variation in the size and the matrix of these bricks suggests that they may have originated from a number of different sources, including Port Jackson. Bricks were made at Oihi in 1816 by the convict laborer/brickmaker Tully Matthews (Hall n.d.). In the same year, Hall (n.d.) also notes receiving bricks from the tryworks of the *Catherine*. Other missionaries record brick laying and chimney building as an important and somewhat frustrating task carried out by men who had not always perfected these practical skills (Rogers 1961; Wilson n.d.).

Window glass is also useful for confirming dates of archeological sites (Orser et al. 1987; Roenke 1978). A total weight of 1,392 g of window glass was recovered from the Te Puna cellar and surrounding squares. A large proportion of this, 1,357 g, was very thin glass varying from 0.86 to 1.24 mm in thickness, with several fragments slightly thicker at around 1.50 mm. This is comparable with window glass from the Kerikeri Mission House, where thickness varied from 1 to 1.5 mm (Best 1995). Only 35 g (eight fragments) of modern window glass measuring around 2 mm (1.7–2.12 mm) in thickness was recovered at Te Puna. Much of the thinner glass has a patina, making it appear somewhat opalescent in color due to the deterioration of the surface. This is glass

produced by either the crown or cylinder methods, used in the 1800s to produce flat window glass (Noel Hume 1969; Lorrain 1968). As a result of these techniques, particularly the crown method, early nineteenth century window glass varies in thickness, and could only be used to form small panes, of the kind shown in drawings of the King house. Thomas Kendall, quoted above, noted that he used 75 squares of glass while he was building at Oihi.

THE ARCHIVES: GOODS RECEIVED

Archival records from the CMS store at Kerikeri are introduced in more detail in Chap. 5, where they can be referred to in the context of the majority of the artifacts recovered from the investigation. A complete list of all articles held in the CMS store at Kerikeri for the year from April 1831 to March 1832 can be found in Appendix 1, along with a record of those supplied to John King. They are referred to here outside that context in order to produce a more complete record of materials used in the mission building.

However, it is useful to examine them here in the context of the mission house structure in order produce a more detailed picture of the materials that the CMS was importing to use in its buildings, and to compare this archival source with artifacts recovered from the mission site. A more complete consideration of the relationship between goods supplied to missions from the CMS Kerikeri store, artifacts recovered from the investigation, and trading relationships can be found in "Mission Station as Trading Post" (Middleton 2007d).

Records from the CMS store (CMS n.d.f; Middleton 2005a, 2007d) note that 6,000 bricks were delivered to the Kerikeri store from Port Jackson by the schooner *Active* in 1830, with a further 1,200 arriving on the same boat in September 1831, these noted as destined for Rangihoua and the School and valued at £15–0-0. Which school is not noted; Rangihoua is likely to refer to Te Puna, where King was busy building at this time, "Rangihoua" and "Te Puna" often being used in a generic or interchangeable sense to refer to these locations in Rangihoua Bay. Wright also brought hearthstones from New South Wales, 14 in 1830 and 11 in 1831 (CMS n.d.f), which may account for the large stones in the cellar fill. While King (and Shepherd) may have used the 1,200 New South Wales bricks in construction of their chimneys, it is likely that the crumbly, under-fired dark red bricks are of local manufacture. Henry Williams, manufacturing bricks at Paihia for a new kitchen chimney in 1827, complained that his products were "so tender as scarcely to bear handling" (Rogers 1961: 78). Bricks originally

made at Oihi by Tully Matthews and William Hall in the earlier days of the mission may have been taken from there to Te Puna while King and Shepherd were building their houses. There is no mention in King's journals of bricks being made on-site at Te Puna, but the CMS store did include both bricks and brick moulds in its list of goods in 1831 (CMS n.d.e).

Other goods that may have been used in the construction of the house from Wright's August 1830 shipment are iron bark shingles, although these do not appear in the outward accounts for John King at this time, and James Shepherd made shingles from local timber at Matauri Bay (see Chap. 3). The store accounts note that Wright supplied 9,970 large iron bark (Australian) shingles at a cost of £17–8-0 and 10,000 small at £6–8-0. The store also supplied sash weights, lines and pulleys for window openings (CMS n.d.e; Appendix).

On October 4 1831 John King's (CMS n.d.f) account from the store included many goods required for building:

To King for Settlement at Rangihoua

3 dozen Pit saw files	3 Gil lamp oil
12 Plane irons	18 Hoes
15 Rugs	18 Blankets
56 lb White lead	6 Gil paint oil
2 qts Turpentine	2 Hammers
5 lb Saltpetre	2 Plasterers brushes
2 Tennon Screws	3 Hatchets
100 lb Shingle nails	200 Fish hooks
4 Woodstock locks	3 dozen gimlets
224 lb Iron	12 lb Whitening
50 yard Duck	4 Broad axes
6 pr Tce hinges	12 Saw files
6 Red shirts	3 [??] Pots
2 Bags salt 426 lb	17 lb Arrowroot

"100 lb Shingle Nails" indicates that the roof was shingled. Ingredients for white house paint consist of white lead, turpentine, paint oil, and perhaps whitening. Pit saw files relate to sharpening saws used in the sawpits, the activity Kendall junior noted his father spent so much time at. Gimlets, locks, hinges, plane irons, plasterers' brushes, axes, files, and not least, hammers, were all important requirements for house building.

In the following year, accounts for the first "quarter" (January to March) indicate that John King was still using a lot of building materials. The list includes six "felling" axes and six small axes, 9 lb of brads (nails for flooring and lining), 296 lb of nails (type unspecified), 22 gimlets, six shaving boxes (the use of these is not clear), 11 sheets of copper

(55 lb), 2 lb of copper nails, 24 panes of window glass, 10 door locks, 10 pairs of butt hinges, one gross of screws, chisels, more paint ingredients, and another 12 plane irons (CMS n.d.f; see Appendix). Some of these goods (axes, nails, copper, window glass, etc.) acquired by John King to build the mission house became part of the archeological record after the abandonment and demolition of the house, and were among the artifacts recovered during the investigation.

CONCLUSION

The use of archival material and documentary evidence including drawings and photographs alongside the archeological record reconstructs a picture of the King mission house – the materials, the structure, and the process of building it over 4 years. Locally available timbers such as kauri, kahikatea, totara, matai, and puriri predominate in the structure and it is most likely that Maori labor was used to build it. The archeological evidence also revealed the cellar, an important feature of the structure not indicated in the documentary material.

The archeological record is helpful in pointing to a likely date for the demolition of the house. Documentary sources give a date of 1828 for the commencement of building and 1832 for its completion (CMS n.d.b; King n.d.a,b). The archeological evidence for dating the building provided by the nails from the Te Puna cellar is congruent with this, indicating that the mission house was built using mostly wrought nails. This is the kind of nail issued by the Kerikeri store up until the late 1830s or early 1840s, and used at the Kerikeri Mission House and Stone Store and other mission buildings in the Bay at this time. The small number of cut nails and the larger number of either wrought or cut (unidentified) nails from the site is consistent with the occupation of the house by the King family over the 40 or so years following completion of the building. As only two of the cut nails were found on the floor of the cellar and the rest within layers one and two of the stratigraphy, wrought nails may have been mainly used for the construction of the building and the cut nails for later repairs or additions.

However, while there is archival evidence for the building of the house, no documentary evidence has yet been found for the demolition of the mission house. Following the death of Hannah King in 1851 and John King in 1854 their children remained living in the mission house on the 16 acres owned by the CMS at Te Puna, until it was sold in 1874 (LINZ n.d.; Martin 1990). The chronological evidence provided by the nails sheds some light on a likely end date for the occupation of the mission house. The use of wrought and cut nails is consistent with

construction in the 1830s and ongoing repairs and occupation up until approximately 1870, when wire nails became increasingly popular in New Zealand and in the Bay of Islands. The small number of wire nails excavated, only 14, provenanced to the upper layers of the stratigraphy indicates that the site was abandoned before wire nails were used consistently from the early 1870s onward.

The window glass points to the use of crown glass manufactured in the early nineteenth century by a different method from modern glass and confirms the dating evidence provided by the nail assemblage.

The contents of the cellar and other excavated material are consistent with the archival information relating to the house construction and the period of time it was inhabited. Built out of untreated timber, it lasted for a period of approximately 40 years before it was abandoned and eventually demolished, with its standing structure then being pushed into the cellar and some of this burnt.

The following chapter examines the interior of the mission house and domestic life in more detail, demonstrating the domestic nature of the CMS's household missions in New Zealand. This provides insight into the economy and material culture of an isolated rural household in the Bay of Islands in the first half of the nineteenth century. While this was a family household that included children from nearby Rangihoua pa, school was held there, as were regular church services. The surrounding land was worked as a small subsistence farm unit, evidently by John and Hannah King's sons, who also developed other land holdings at a distance from Te Puna itself. The mission station also functioned as a trading post, John King bartering goods in exchange for food and labor. Despite its isolation, Te Puna and its inhabitants, both Maori and Pakeha, were part of the globalizing economy of the CMS in New Zealand, Australia, and Britain, as it formed the advance guard of colonization in New Zealand.