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## CHANGING LANDSCAPES AND HUMAN SETTLEMENT: THE TARAWERA AREA BEFORE AND AFTER THE ERUPTION, JUNE 1886

Neville A. Ritchie  
Department of Conservation,  
Hamilton

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### INTRODUCTION

In June 1886, the eruption of Mt Tarawera caused cataclysmic changes to the landscape around Lake Tarawera and drastically altered the established pattern of human settlement. Several Maori villages were obliterated and about 150 people died, of whom only seven were Europeans.

Tarawera is part of the Rotorua thermal region. The topography is a legacy of eleven major episodes of volcanic and hydro-thermal activity during the past 20,000 years. These resulted in the formation of two calderas, Rotorua and Haroharo, which have been partially infilled and subdivided by rhyolitic flows resulting in the present landscape - ten lakes separated by low forested ridges (Scobie 1986: 2-6). The lakes form two distinct drainage systems. This story principally involves the six smaller lakes, Tarawera, Rotomahana, Rotokakahi (Green Lake), Tikitapu (Blue Lake), Okareka, and Okataina, centred around Mount Tarawera, which make up the southern drainage. The northernmost lakes (Rotorua, Rotoiti, Rotoehu, and Rotoma), were little affected by the 1886 eruption, and consequently they are largely outside the scope of this paper. The Kaharoa eruption, the last prior to the one in 1886, occurred about 700 years ago, over 100 years before the arrival of the first Polynesian settlers. This accounts for the fact that there is no mention in recorded traditional histories of any major volcanic activity. Nevertheless, the submergence of several Maori settlements around Lakes Okataina and Rotoma during the past 200-300 years is testimony to the powerful and unpredictable natural forces which are active in the region and occasionally threaten human occupation (Moore 1963; Quigg 1966; Healy 1975: 77, 95; Burrows and Greenland 1979: 339).

### THE FIRST SETTLERS: TE ARAWA SUB-TRIBES

The Bay of Plenty-Rotorua region is predominantly settled by descendants of the Te Arawa canoe (under the command of Tamatekapua). According to Maori tradition the canoe made a landfall on the northeast coast of the North Island about 1350 AD. The occupants explored the coast of the Bay of Plenty from East Cape to Coromandel, and finally tied their craft to a rock in the estuary of the Kaituna River at Maketu. These people settled the coastal margin of the Bay. Initially there appears to have been little incentive to settle further inland and go beyond the abundant sea, estuarine, and coastal forest resources (Stafford

1967: 20-23).

However, some members of the original Arawa crew undertook journeys of exploration. Tia set out across the Mamuku Ranges and reached the Waikato, giving his name to places like Atiamuri and Aratiatia, and then went on to Taupo - a district still called Taupo-nui-a-Tia. Ngatororangi travelled east along the coast and followed the course of the Tarawera River until he reached the lake. He climbed Mt Tarawera, then journeyed south to the Taupo region, to Tokaanu and the Rangipo desert and climbed Mt Tongariro. Kohumatamome, a son of Tamatekapua, explored the Rotorua Lakes district and is credited with naming many of the features in the area, names that have been retained to this day (ibid.).

#### PERMANENT INLAND SETTLEMENT (Fig. 1)

About a century after the arrival of the Arawa canoe (i.e. 1450 AD), a powerful chief, Rangitihi, established a pa some miles inland on the banks of the Kaituna River. Friction within the family finally led his youngest son Tuhourangi to leave the ancestral home. He and his people settled near the Ohau Channel (the outlet of Lake Rotorua). His descendants formed the Ngati Tuhourangi who eventually established themselves around Lakes Tarawera, Rotakakihi, and Okareka (the area which was later to bear the brunt of the 1886 eruption: Stafford 1967: 82-90).

Another subtribe, the Ngati Rangitihi, settled the eastern end of Lake Tarawera. Tapahoro, near the Tarawera outlet, was their main settlement, but after 1700 AD they frequently battled with the Tuhourangi proper over possession of Te Ariki, a conglomerate of six pa, seven smaller settlements, and at least 80 cultivations centred round the head of Te Ariki Bay (Waaka 1981: 1-10).

Over time the Ngati Tarawhai subtribe, centred around Lake Okataina, established themselves as tohunga-whakaaio - master carvers of the area. They produced carvings for many of the surrounding tribes (Schuster 1974). Whakaue founded a subtribe which still occupies the thermal land around Ohinemutu (Stafford 1967: 82-90). Another group, the Ngati Pikiiao occupied the Rotoiti area (ibid.: 100-106). While they made incursions into the Tarawera district, they never became permanent settlers in the area.

Maori settlement in the Rotorua Lakes district was principally centred around lakeside villages and island pa. Prior to the arrival of the first Europeans in the early 1840s the main subsistence activities were kumara and gourd cultivations, the gathering of aruhe (fernroot) and forest foods, birding, and exploitation of freshwater resources - notably eels, koura, kakahi, and ducks (Hiroa 1921). The often distant cultivations and gathering locations were named and are recorded in Maori Land Court records, but as few maps exist and/or the landscape has been drastically changed, the exact locations of most of the food gathering areas have been lost (Waaka 1981). In addition to the immediate resources, occasional expeditions were mounted to the coast to obtain kaimoana.

Maori traditions document numerous outbreaks of intra and intertribal combat (attacks and utu raids) involving groups in the Rotorua Lakes area (Stafford 1967: 56-203). While most of these events are irrelevant to this discourse, at least three involved attacks on the lakeside communities around



Fig. 1. Pre-eruption Maori sites: Tarawera area.

Tarawera during the pre-European era (specifically the settlements of Moura and Te Arika on Tarawera, and Motutawa Island in Lake Rotokakahi (ibid.).

The last named was the scene of a massacre engineered by Te Rauparaha. Early in the 1820s, when Te Rauparaha was in the Rotorua area to recruit support for his planned invasion of the Kapiti area, he saw an opportunity to avenge the death of some of his relatives during the Nga Puhi sacking of Te Totara pa near Thames. He persuaded the Tuhourangi to kill a party of Nga Puhi when they landed on Motutawa Island, ostensibly for a peaceful visit. A nephew of Hongi Hika was among the slain. In 1823 Hongi revenged the incident. Armed with muskets, his men dragged canoes all the way from the coast (via Hongi's track). The Arawa sought refuge on Mokoia Island in Lake Rotorua but were defeated (Stafford 1967: 175-188). There has been a 'no-European entry tapu' on Rotokakahi since about the time of the massacre mentioned above. It is also the burial site of Hinemoa, the Maori heroine of Mokoia.

As is the pattern in other areas in New Zealand, kainga and defensive or refuge pa co-existed. In the lake district the kainga were generally situated on sheltered lakeshore locations where canoes could be readily pulled up or launched quickly. The pa were established on a nearby ridge or headland. Moura on Lake Tarawera and Epiha on Lake Rotokakahi are typical examples of this combination of pa and village.

Historic records (including Maori Land Court files) indicate that there were over 40 Maori settlements and twice as many named resource-gathering areas around Lakes Tarawera, Rotomahana, Rotokakahi, Tikitapu, Okareka, and Okataina in the protohistoric period (c.1830-60: Waaka 1981). At the time of the eruption in 1886 only four were occupied - Te Arika, Moura, Waitangi and Te Wairoa, but other Maori (among the casualties) were camped at outlying locations such as cultivations at Tokinoho (Kearm 1988: 388-390).

## EUROPEAN CONTACT

Isolated from the coast, the Te Arawa had relatively late contact with Europeans. The Nga Puhi raid of 1822 brought the Arawa people in contact with European missionaries for the first time, when Arawa captives were taken back to the Bay of Islands by their captors. Some of the Arawa, impressed by the kindness and concern extended to them by the missionaries, took up the new faith and promoted it amongst their people after the opportunity came for them to return to the Rotorua district (Stafford 1967: 204).

In early 1831, Phillip Hans Tapsell, a Danish sailor, established a trading station at Maketu principally for procuring flax for on-sale to Jones and Walker of Sydney. Almost as soon as the trading station was established, members of virtually all of the Arawa subtribes in the Bay of Plenty and lakes areas began to congregate near Maketu to take advantage of the opportunity to obtain trade goods (Stafford 1967: 193). Within a few weeks of establishing himself at Maketu, Tapsell journeyed inland to Rotorua, the first European to do so. Among his party were several Arawa women who had been captured by Hongi when he took Mokoia Island in 1823. Tapsell paid a ransom for them and restored them to their families at Rotorua. As a consequence he was well received. His main object in visiting the lakes district was to encourage the local Maori to scrape flax for him

in return for trade goods. In 1834 he opened a trading post on Mokoia Island and for many years thereafter was the principal source of trade goods in the district. Rum and muskets were particularly in demand, both probably helping the Arawa withstand continuing raids (up to 1845) by Nga Puhī, and Waikato war parties (the latter led by Te Waharoa).

The first mission in the Rotorua area was established by Thomas Chapman at Koutu (near Ohinemutu) in 1835 (Stafford 1967: 204-210). The missionaries were warmly received by the Arawa, but following the sacking of the mission building by Te Waharoa in August 1836, Chapman established a new mission station on Mokoia Island, where he remained until July 1841 when he relocated to Te Ngāe on the mainland because of its greater accessibility. Through his preaching, teaching, peacemaking, and dispensing of medical care, Chapman had a considerable influence on the Arawa residents around Lake Rotorua. He was held in high regard; to the point where he was taken to see the Pink and White Terraces - the first European to lay eyes on them (ibid.: 221-225).

But it was the arrival in 1845 of the Rev. Seymour Mills Spencer, an American-born Church Mission Society missionary, which had the greatest impact on the Arawa settled around Lake Tarawera. Spencer established a mission station at Ruakareo, the site of a palisaded Maori settlement on a small peninsula which protrudes into the northwestern shore of the lake (Scobie 1988).

Spencer was born in March 1812 at Hartford, Connecticut. At the age of 26 he read a book describing Samuel Marsden's work among the Maori in the Bay of Islands, and decided that he would like to undertake similar missionary/farming work in another part of New Zealand. He and his wife Ellen first went to Britain to join the Church Missionary Society, an Anglican body which was organising missions to the Pacific. On arrival in New Zealand they spent sometime at the C.M.S. headquarters at Waimate North, where he learned to speak Maori. Eventually Spencer was posted to the Tarawera area (Stafford 1967; Scobie 1988).

Spencer wasted no time in setting up the mission station on Lake Tarawera, using Maori labourers whom he trained. He called it 'Galilee', but it gradually became known as Kariri (attributed to the local Maori having difficulty pronouncing the biblical name). Initially he erected a chapel which was burnt down when a Maori worshipper tucked his lighted pipe under the flax walls as he said prayers. Undaunted, Spencer decided to build a more solid structure. Trees were cut down and pitsawn to construct a church (named Zion after the church in which he had worshipped as a boy in Mendon, Illinois). Unlike the squat mission churches established by the British missionaries in other parts of the North Island, Spencer's effort was dominated by a tall slender steeple. The finished church was 45 ft long and 25 ft wide (13.7 by 7.6 m). The roof was supported by squared matai columns connected by elliptical Gothic arches of the same wood. When completed, Spencer banned pipes in church. Mrs Spencer established a school for Maori children and taught the Maori women how to make thread from flax to repair garments, supplementing its traditional uses for clothing and netmaking (ibid.: Grayland 1971: 9-19).

Spencer showed the Maori how to break in land and farm it, and how to improve the quality of their planted flax by weeding and cultivating between the flax bushes. He influenced many other changes. For example, he encouraged the Maori to clear and cultivate idle land nearby rather than work distant fields as they had been doing. Each Maori house had its own neat path, and Spencer

insisted that the Maoris' pigs live outside a stout fence which he had erected across the peninsula to prevent them living among the houses as they had done prior to his arrival. Although Spencer established a good rapport with the Tarawera Maori he was concerned that 'these simple innocent people' were drinking and gambling to excess. Tobacco smoking was also popular. In many Maori settlements there were gardens of tobacco plants with their distinctive large leaves and pink flowers (Bates 1969: 2; Grayland 1971: 12).

To Europeans, the Kariri mission site became recognised as an outpost of civilization from which Spencer and his wife spread education and Christianity by example and their seemingly tireless energy. Many distinguished visitors, including Sir George Grey in 1849, shared their hospitality (Scobie 1988). The Spencers enjoyed visiting the Terraces and bathing in the hot pools. They often accompanied Maori friends on picnic excursions by canoe to Lake Rotomahana, the women returning with duck feathers they had collected for stuffing mattresses. Every year, about the end of February, the Maoris would take the Spencers with them on their annual duck hunt at Lake Rotomahana. At that time thousands were caught in snares placed in the rushes in the shallows. The ducks were not allowed to be caught at other times during the year. The annual ritual provided over-wintering sustenance and kept the duck numbers within reasonable limits. The ducks were cooked in steam holes around the lake and potted in their own fat in bark vessels (*ibid.*: 16).

In 1850 Spencer began to implement an ambitious plan he had been thinking about for some time. This was to move from Kariri (where he had been established for eight years) and set up a model town for the Maoris in the valley via which the Wairoa Stream drains from Rotokakahi (Green Lake) into Lake Tarawera. The agricultural land on the small peninsula was limited and had been gradually worked out. So Te Wairoa (U16/108) was born, about 4 km west of Kariri.

Under Spencer's leadership the new settlement began to take shape. Each family was given half an acre of ground to be fenced and cultivated. Trees were felled and sawn into planks and the building of houses began. The Maoris were taught how to grow wheat and maize. A water-powered flour mill was erected beside a race which diverted water from the Wairoa Stream. A schoolhouse and church and its adjacent parsonage were built on Te Mu, a hill behind the village. (Grayland 1971; Scobie 1988: 16-20).

Over the next decade Spencer and his wife laboured among the Tuhourangi people of Tarawera, but throughout the 1860s there was growing unrest among the Central North Island Maori as first the Anglo-Maori Wars, then the war against Te Kooti developed, making mission work increasingly difficult (Stafford 1967: 226-269; Belich 1988). Most of the Tarawera Maori were virtually under arms from 1863 to 1872. Although the Arawa refrained from joining the Kingites, neighbouring tribes wanted to pass through the Tarawera district to support their cause, causing conflict. Early in 1864 Spencer's wife and children were evacuated from the area. Spencer stayed on but found the work of the mission (which extended as far south as Taupo) increasingly difficult to pursue because many of the men were away in war parties and village life was disrupted.

In 1869 the Maoris deserted Te Wairoa and moved back to the old fortified pa at Kariri as they feared attack from neighbouring tribes who had embraced Te Kooti's Hauhauism. In 1870 Spencer reluctantly abandoned the Te Wairoa mission



and removed to Maketu because there was no point in staying and his life was at risk whenever he travelled (Grayland 1971: 19).

In the late 1860s Captain Gilbert Mair established a camp for his Arawa soldiers at Kaiteriria, the site of an abandoned Maori settlement (U16/3) on the southwestern shore of Lake Rotakakahi. His men achieved a significant victory over Te Kooti's forces in early 1870, effectively driving them out of the lakes district (Cowan 1983: 393).

Spencer died in 1898 at the age of 86. He was buried at Maketu, but in 1925 his son had the remains of his parents and other members of the family exhumed and placed in a Spencer family mausoleum established on the site of the old mission station at Kariri (Scobie .1990).

## THE TOURISTS

From the early 1840s European travellers had been finding their way into the Rotorua-Tarawera region, drawn by reports of the spectacular Pink and White Terraces on the shores of Lake Rotomahana. These features were known to the Maori as Otukupuarangi and Te Taratu respectively. By 1850 the terraces had become widely renowned and were being hailed as the 'eighth wonder of the world'. They attracted tourists and artists from all parts of New Zealand and overseas. The initial trickle of visitors soon became a steady stream.

The Tuhourangi were well placed to take advantage of the situation. Te Wairoa became the starting point for visitors to the Terraces, after they had come overland by coach from Ohinemutu, the thermal village on Lake Rotorua. The first 'hotel' at Te Wairoa was Maori owned and operated and they provided guides and canoe transport for the tourists. In order to reach the Terraces it was necessary for each party to walk down to the canoe landing at Waitoharuru Inlet, where young Tuhourangi men were rostered to ferry the tourists across Lake Tarawera. Beaching at Te Ariki, the men picked their way across the narrow isthmus to Lake Rotomahana, while the women were poled up the warm Kaiwaka stream to the White Terraces. Both groups then boarded another canoe (whale boats after 1875) which proceeded to the Pink Terraces. The Tuhourangi villages at Moura (V16/18), the halfway point, and Te Ariki served as stopping places and additional attractions en route to Lake Rotomahana. A quick stop was made at Moura, 'a small Ngati Rangitihī settlement consisting of a few hūts with maize and potato enclosures' (Keam 1988: 35) to purchase fresh fruit, potatoes and koura which were later served as lunch, the food being cooked in the boiling pools at Rotomahana. Despite the fact that hundreds of tourists visited Moura there are no known photographs of the settlement taken prior to the eruption (Bates 1969; Grayland 1971; Waaka 1986; Keam 1988).

Most of the Tuhourangi still living in other villages around the lake abandoned them so that they could reap a share of the tourism windfall (many had left their original settlements earlier so as to be near the European trading posts and mission stations). The concept of payment for guiding and other services gradually evolved. In 1860, Lt. Bates recorded that a board had been erected at the entrance to Te Wairoa detailing the fees for guiding visitors to Rotomahana (Bates 1969: 4). By 1871 fees were charged for viewing the Te Wairoa Falls; viewing Hinemihi, the meeting house at Te Wairoa; for performing



haka and dances (often described as lewd by Victorian moralists); and for transportation and guiding services. Fees were also levied for taking photographs incorporating Maori at the Terraces. The fees were considered exorbitant by many of the tourists, but they had little choice but to pay up.

As a consequence the Tarawera Tuhourangi became very well off and could readily afford European trade goods. One report cited by Waaka (1986: 12) stated that the tribe had an estimated annual income of £6,000 from guiding and boat fees alone. The eyes of the carved figures on Hinemihi, the meeting house at Te Wairoa, were inlaid with gold sovereigns.

Charles Spencer, an early traveller, noted that 'The natives have ceased to cultivate or grind grain, preferring to cultivate the acquaintance of the Pakeha, and see what amount of gold they can grind out of him'. The tribe became increasingly dependent on a cash economy and European goods, and lived well on a diet of pork, bacon, beef, tea, sugar, bread and butter. Rum was liberally consumed, especially on important social occasions. Some tourists complained that drunkenness and prostitution were rife in Te Wairoa; others probably considered the so-called 'problems' were an added attraction.

Understandably the Tuhourangi considered they were on to a good thing and were determined to exclude both Europeans and other Maori tribes from outside the district from setting up in competition. Between 1850 and 1855 there was considerable hostility between the Tuhourangi and the Rangitihī (i.e. the two main tribal groups living around Lake Tarawera) over the latter's desire to secure a slice of the tourism profits.

In 1850, Alfred Warbrick, a European trader who had married the daughter of Paerau, the chief of the Ngati Rangitihī, decided in conjunction with his father-in-law to make a bid for a share of the lucrative tourist trade. At this stage the principal village of the Rangitihī tribe was Tapahoro near the Tarawera outlet. Warbrick erected a building on the shore of Lake Rotomahana near the White Terrace on land he had been granted by Paerau. The Tuhourangi chief, Rangiheuea, disputed Ngati Rangitihī's right to the land, and promptly pulled the structure down. Paerau, incensed by this action, promptly challenged Rangiheuea to a battle over the rights to Rotomahana in which the winner would take all. Ngati Rangitihī attacked Rangiheuea's pa at Te Ariki twice. On the second occasion, in 1853, Paerau was killed. Hostilities continued until 1855, during which time no one lived outside the main fighting pa (Waaka 1981: 1).

By about 1870 Europeans had taken over the provision of accommodation and provisions at Te Wairoa (possibly by offering a better standard), but the Tuhourangi held fast to the transport and guiding aspects of the tourist trade and its attendant profits.

## CHANGES IN MAORI LIFESTYLE

The contacts with the traders, missionaries and tourists brought profound changes to the lifestyle of the Tarawera Maori in the 50 years prior to the eruption. Most of their lakeside settlements were abandoned in favour of living in locations where they could take advantage of European contact - the trading posts, mission stations, and tourist spots. Gradually European dress was adopted. The flax mat gave way to the woollen blanket, and metal tools and utensils

replaced stone and wooden implements. The faster growing and higher yielding potato gradually replaced the kumara, and large areas of cereal crops were cultivated. A flour mill was erected at Te Wairoa and was a source of considerable mana to the tribe until they became so wealthy from providing tourist services that they abandoned their cultivations. The influence of the tohunga declined as more and more Maori converted to Christianity. The profits derived from tourism enabled the Tuhourangi to buy alcohol and other European items almost at will. By contemporary Maori standards, they were very well off, although all was not 'wine and roses' (Waaka 1986: 13). In 1885 a 'fever' epidemic struck the Maori in Te Wairoa. Thirteen died within a two month period, including Aporo Te Whare Kanawha, one of the two leading chiefs at Te Wairoa (Kear 1988: 52-60).

### THE ERUPTION, SEQUENCE OF EVENTS, AND EFFECTS

While the advent of traders, missionaries, and tourism rapidly changed the nature of the Tuhourangi lifestyle, the changes were minuscule compared with the profound effects of the eruption of Mt Tarawera on June 10 1886. In one dramatic night the world of the Tarawera Tuhourangi came to an end. The sequence of events was as follows:

1. In the month proceeding the eruption there was unprecedented activity at the hot springs and geysers at Rotomahana.
2. On the eve of the eruption, a sequence of stronger than usual earthquakes was felt by the inhabitants, but they were not strong enough to cause any real alarm.
3. Between midnight and 3 am on 10 June 1886 the three peaks that make up Mt Tarawera - Wahanga, Ruawahia, and Tarawera - erupted more or less simultaneously. A volcanic rift split the mountain.
4. By dawn the rift had extended 8 km to the southeast through the bed of the original Lake Rotomahana. When this happened the lake waters flowed into the underlying magma chamber and vapourised. This caused a massive hydrothermal explosion which blew the lake basin apart and ejected the mud on the lake bed skywards. The Pink and White Terraces (silica formations located on the northwestern shore of the original lake) were destroyed in the process. A short time later the mud and other detritus rained down on the villages around Lake Tarawera.
5. All who were resident in the small villages around Lake Rotomahana (c.50 Maori) met a violent death when the hydro-thermal explosion occurred. The original Lake Rotomahana, a warm, marshy lakelet, was quite small compared with the present lake of the same name which was formed when runoff gradually filled the five explosion craters and spread across the valley floor. The structure of the Waimangu valley to the south of Lake Rotomahana was also changed dramatically. Besides destroying the

Terraces, the eruption also obliterated a small cold water lake (Rotomakiriri), the nearby settlement - Waingongonga - and two small islands, Puai and Pakura, in the original Lake Rotomahana. Because of the existence of hot springs on the islands they were often inhabited by the Tuhourangi, as they were by 20 on the night of the eruption. Chief Te Rangipuawhe, who owned a house (Rangaapawa) on Te Puai, was among the casualties.

6. As noted, airborne mud and ash was deposited over all the lakeside villages and countryside in the Tarawera area; the depth of the deposition being largely dependent on the prevailing wind. The villages closest to the mountain, Moura and Te Ariki on Lake Tarawera, were buried under 20 m or more of ash and rock debris. There were no survivors. Others died at Waitangi and other locations on the western side of the lake, including 19 at Tokiniho, a cultivation area. Shallow bays at Te Ariki and elsewhere were infilled, permanently changing the contour of the lake. At Te Wairoa the loss of life was much less, but the village was rendered uninhabitable. Over 1 m of ash was deposited there. The flourishing cultivations were ruined and much of the surrounding bush destroyed or defoliated for several years. A volcanic windstorm levelled much of the Tikitapu bush near the Blue Lake. A sawyers' camp on the lakeshore was devastated. (See Plate 1 and cover illustration.)
7. Lake Tarawera rose over 12 m immediately after the eruption, attributed to the outlet being partially blocked by volcanic debris and the volume of ash and mud that had fallen in the lake. Before the level dropped again, the Maori rock drawings at Punaromia near Tarawera landing were submerged (the drawings are now enclosed in a protective structure). Lake Okataina also rose 12 m during this period (presumably further submerging the already submerged pa there). The Maori settlement at Kaiteriria (U16/3) on the southern end of Lake Rotakakahi received only a light coating of ash and mud during the eruption. A few weeks later the whares were awash when the lake level rose as a consequence of the outlet being blocked by volcanic debris. The inhabitants moved to Pakaraka (U16/34) and never returned (Kear 1988: 392). The eruption ruled out any question of further habitation at Rotokakahi.

Epiha (U16/16), one of the abandoned Rotokakahi villages, is notable for the existence there still of a carved stone pataka similar to that in the Buried Village (U16/108) but lacking the carved amo of the Te Wairoa example (Watt 1969: 534-535). An 1865 Kinder photograph (A.C.A.G. 1985: plate 39) indicates that other carved stonework below and to the sides of the Te Wairoa pataka has yet to be revealed by excavation.

## THE AFTERMATH: RESETTLEMENT

Obviously for the surviving Tuhourangi, the eruption was a disaster of epic proportions. In addition to the loss of kin, their homes, and natural food resources, their main livelihood, the tourist trade, evaporated overnight once it became known that the Terraces had been destroyed. The surviving Tuhourangi

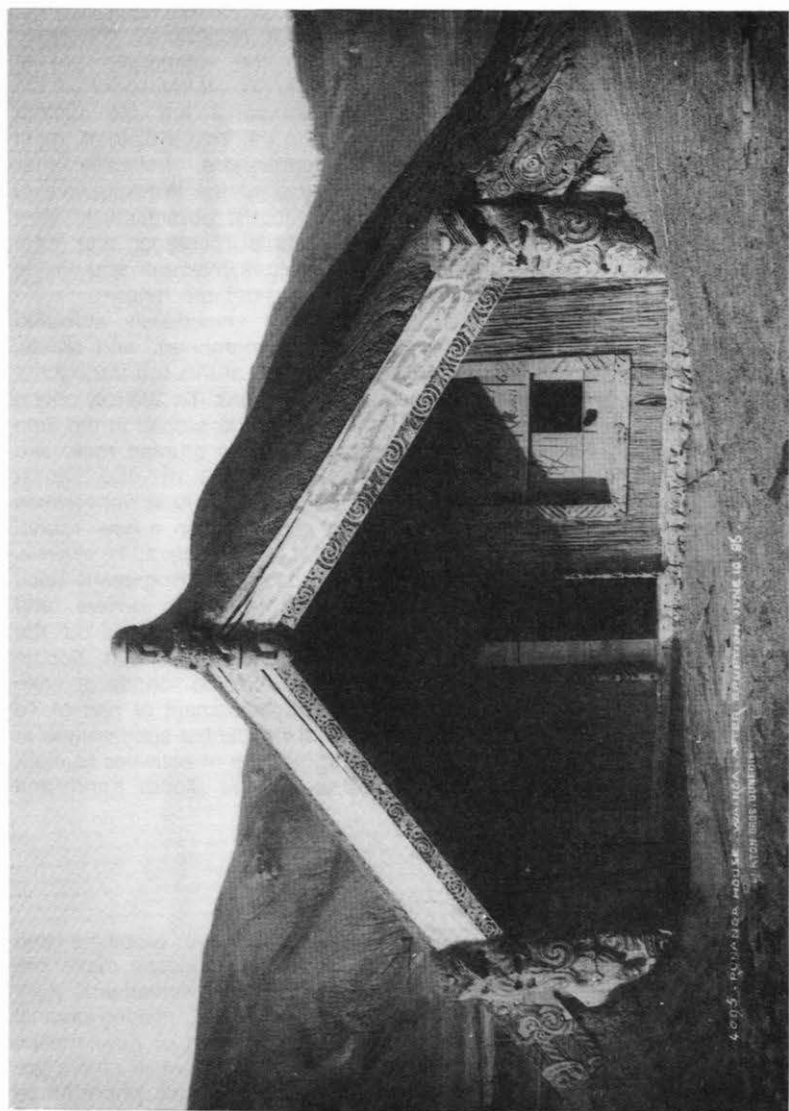


Plate 1. The meeting house 'Hinemihi' at Te Wairoa covered with ash and mud after the Tarawera eruption 10 June 1886. Burton Bros photograph, National Museum.

opted to abandon the Tarawera district and settle elsewhere. They have never returned, although the tribe still owns land in the area which they now lease.

On hearing of the Tarawera disaster, other Maori groups offered land to the now landless survivors. Offers came from places as far distant as Gisborne, Hokianga, Maketu, and the Coromandel. Their closest neighbours, the Ngati Whakaue, took them into their homes (adjacent to the submerged pa) at Ohinemutu, where they stayed for some time, but later joined members of the same tribe at Whakarewarewa. While some Tuhourangi left the district permanently (one significant group went gum digging in the Tairua district), most stayed on and made Whakarewarewa their tribal headquarters. Ironically, after losing the Pink and White Terraces they gained control of the Whakarewarewa thermal area, one of the leading and most lucrative tourist attractions in New Zealand then and now. As at Tarawera (with Sophia Hinerangi and Kate Middlemiss), Tuhourangi women (notably Maggie Papakura/Makareti and Guide Rangi) specialised in the guiding work and accrued considerable renown.

The destruction wrought by the eruption almost immediately attracted renewed visitor interest, including that of scientists, photographers, and artists. Some European entrepreneurs attempted to take advantage of this but throughout the 1890s tourism was hampered by the loss of the Rotorua-Te Wairoa coach road. In 1900 a new but shortlived hydro-thermal attraction developed in the area - the Waimangu Geyser. For four years the geyser regularly erupted rock, ash and mud amid scalding water to heights of up to 1,500 ft (457 m - the highest ever recorded), and occasionally thereafter until 1915. Its sudden appearance provided the incentive to rebuild the Te Wairoa Rd and establish a new 'round' tourist circuit (Rotorua, Waimangu, Lake Rotomahana, Lake Tarawera, Te Wairoa, Rotorua). The activities associated with the round trip brought Europeans back into the area. They served as guides, launch masters, coach drivers, and provided accommodation. Other 20th century developments are beyond the scope of this paper and are well documented elsewhere (Grayland 1971; Scobie 1990). They include the establishment of hunting and fishing lodges at Lake Okareka, the excavation, beginning in the 1930s, and development of part of Te Wairoa as the 'Buried Village', and the development of residential subdivisions at Okareka and Tarawera (ibid.). In 1986, during the programme of activities to mark the centenary of the eruption, cairns were erected at Te Ariki, Moura, Kariri, and Te Wairoa.

## ARCHAEOLOGY

Archaeologically, the Tarawera area is one of special problems and opportunities. The mud and ash deposits that clothe the landscape make site surveying difficult. Even if you know or suspect where former settlements were located, the land surface has been recontoured and revegetated, making original surface features difficult or impossible to define. The infillment of bays means that some sites are now 100m or more from present shorelines, while others are submerged. Despite these difficulties, and the fact that some sites where Maori people died during the Tarawera eruption are probably permanently off-limits to archaeologists, there are many others in addition to Te Wairoa which have considerable potential for archaeological investigation and interpretation, e.g. Kariri,

Kaiteriria, and Epiha (assuming the tangata whenua have no objection).

Te Wairoa is probably the most visited archaeological site in New Zealand and also one of the longest, albeit intermittent, excavations in the country. Over 50,000 people a year pay to visit the site. It has on occasion been promoted as New Zealand's Pompeii. The settlement's demise as the result of 'a cataclysmic event' undoubtedly adds to its visitor appeal.

From an archaeological point of view, 'suddenly buried sites' are appealing because when exposed they are virtually exactly as they were left (as the artefacts found at the Buried Village over the years testify). This advantage has to be weighed against the volume of overburden overlying the sites and the difficulty sometimes of locating features without extensive excavations. It may be necessary to remove a cubic metre or more of overburden (often containing standing structural remains which limit machine use) to expose one square metre of the original ground surface. Buried sites offer good opportunities for testing the efficacy of magnetometers, subsurface radar and other forms of remote sensing.

No area in the country offers more opportunities for underwater archaeological investigations on pre-European sites. As noted in the introduction, submerged pa sites are known to exist in Lakes Rotoma and Okataina (Moore 1963; Quigg 1966; Healy 1975; Burrows and Greenland 1979) and there are almost certainly others in the Rotorua lakes district.

To conclude, despite the technical difficulties of survey and excavation in the Tarawera region, it is a unique part of New Zealand. Compared with other areas, there is a wealth of archival, scientific, historical, and pictorial information largely stemming from the human fascination with thermal regions and the often awe-inspiring and dynamic natural features associated with them.

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