Chapter 3
Food, Fighting, and Fortifications in Pre-European New Zealand: Beyond the Ecological Model of Maori Warfare

Mark W. Allen

He toa taua he toa pahekeheke, he toa mahi kai he toa paumau

Maori proverb: *To be famous in war is soon forgotten, but fame in producing food will always remain*

Few places have been more important to the anthropology of warfare than New Zealand. Detailed accounts of pre-European and protohistoric Maori war are abundant given the late "discovery" of its islands and the long period of contact prior to its annexation into the British Empire, and these accounts provide information that is not usually available. Second, the reputation of Maori warriors and the prevalence of cannibalism have long aroused interest, both sanguinarily and scholarly. Maori warriors and soldiers continued to impress long after first European contact, perhaps most notably drawing the attention of Erwin Rommel and other members of the Afrika Korps in the North African campaign of World War II (Allen 2006; McGibbon 2000). The research of anthropologist Vayda (1960, 1976) produced a widely cited ecological explanation of traditional Maori warfare that can be thought of as a cornerstone in the anthropology of warfare. Subsequent archaeological research on Maori warfare has focused on abundant prehistoric and early historic fortified settlements in New Zealand. These have emphasized the role of economy (Allen 1994, 1996, 2006, 2008; Irwin 1985), ideology (Barber 1996; Sutton 1990), and social power (Allen 1994, 1996, 2006, 2008). This chapter seeks to further examine the economic aspects of Maori warfare and fortifications through an emic analysis of Maori food. The relationship of food and war in

M.W. Allen (✉)
Department of Geography and Anthropology, California State Polytechnic University, Pomona, 3801 W. Temple Ave., Pomona, CA 91768, USA
e-mail: mwallen@cpp.edu

A.M. VanDerwarker and G.D. Wilson (eds.), *The Archaeology of Food and Warfare*, DOI 10.1007/978-3-319-18506-4_3

New Zealand cannot be completely understood through such lenses as behavioral ecology or formal economic theory. As will be seen, some foods have prestige, while others do not, and the roles and statuses of food differed significantly in times of peace and war, as well as throughout the yearly cycle.

3.1 The Ecological Model of Maori Warfare

New Zealand is an ideal location to examine the roles of warfare and economic power in the formation of complex pre-state societies. Definitions of warfare used by anthropologists can vary tremendously. It is common for those who argue for a short chronology of war in human history to "rely on tenuous definitions that are often tautological, inconsistent, or idiosyncratic" and that often blur distinctions among war, feud, and homicide (Allen 2014, p. 20). The definition of warfare followed here is potentially lethal conflict between different communities. Some of the advantages for studying warfare in prehistoric New Zealand include one of the shortest prehistoric cultural sequences on the planet, rich ethnohistorical and oral traditions to complement the archaeological record, and a prehistoric landscape of warfare and power literally carved into hills and ridges above slopes that could marginally support sweet potato (*Ipomoea batatas*) horticulture. Its islands were settled by Polynesians around 800–1000 C.E. Faced with cool temperatures, frost, and rugged terrain, the settlers and their descendants were content for several centuries to more or less set aside a traditional Polynesian horticultural economy and turn to hunting, fishing, and gathering indigenous flora and fauna, including the giant flightless *moa* (consisting of four genera and a dozen or so species of Dinornithiformes). After a few centuries, around 1300–1500 C.E., the development of elaborate storage pit technology and the intensification of sweet potato horticulture led to considerable changes in Maori settlement patterns, economy, and sociopolitical organization (Allen 1996, 2006, 2008; Best 1975, 1976; Davidson 1984, 1987; Kirch 2000, pp. 275–283).

The most obvious change was the proliferation of earthwork and palisaded fortifications called *pa* (the Polynesian word for fence or palisade). The oldest appear to date to about 600 years ago, but most were constructed after 1500 C.E. (Schmidt 1996). They are heavily concentrated in areas suitable for horticulture (close to the ocean to avoid freezing temperatures, near gentle north-facing slopes to capture sunshine, friable soils, and with milder winter temperatures). The vast majority are located along the northern and central coasts of the North Island. Of over 6000 recorded *pa*, only around 100 are located in the colder South Island (Best 1975, 1976; Davidson 1984, 1987; Fox 1976).

The close timing of horticulture, pits, and *pa* has led to the development of a dominant ecological model proposing that limitations to horticulture in New Zealand, the difficulty of clearing temperate rain forest, and population growth resulted in fierce competition for favorable areas (Allen 1996; Davidson 1984, pp. 181–194, 1987; Kirch 2000, pp. 275–283). Warfare, so important in the rest

of Polynesia, became central to Maori society. *Pa* were key in this process as they allowed groups to defend their gardens and other coveted resources. This ecological model was primarily constructed by Vayda (1960) based on his classic analysis of Maori warfare through oral history, ethnography, and ethnohistory. In particular, he emphasized that endemic warfare made sense in New Zealand due to the relative scarcity of appropriate gardening areas and the difficulty of clearing the temperate rain forest that covered much of both major islands.

3.2 Economic Power and Warfare: The Role of Maori Fortifications

In the early 1990s, I conducted a regional analysis of a roughly 55 × 50 km study area in the mid-Hawke's Bay on the east coast of the North Island (Allen 1991, 1994, 1996). My goal was to expand the ecological model of Maori warfare by analyzing the distribution of *pa* throughout the region to understand their economic and political contexts. I visited and mapped or remapped some 130 *pa*, each one sited to take advantage of natural defenses, but augmented with palisades, ditches, banks, and terraces (Fig. 3.1). Some of these earthworks were quite elaborate and extended over several kilometers of hills and ridges. Each site is unique, a product of a group of people intent on enhancing their security from attack from enemies near or far. One of the main contributions of my research was the perspective that Maori fortifications were part of a political process and not just a static means of defense. I refer to them as the nexus of polity formation and

Fig. 3.1 Aerial view of site V22/13, a *pa* of modest size located within the Te Hika a Papauma polity of mid-Hawke's Bay. The steep slopes of the ridge are supplemented by three transverse ditches and a few additional transverse scarps, as well as several lateral scarps and terraces. The defenses would have been further protected with palisades. Enclosed within the defenses are eleven storage pits and five likely house platforms, and several more pits are located just outside of the ditches at either end of the site. North-facing slopes around the site were likely used for gardening. View to the west, photograph by the author, February 1990

the means by which *ariki* (chiefs) built and consolidated regional power, a view endorsed by Kirch (2000, p. 283) in his masterful synthesis of the archaeological history of Polynesia.

I used central place theory, rank size, and catchment analysis in combination with ethnohistory and Maori tradition to reconstruct six polities and other smaller groups that dated from around 1500 C.E. to the early nineteenth century. The two largest of these meshed well with Maori history as two different factions of the *iwi* (tribe) Ngati Kahungunu: Te Hika a Ruarahanga to the north in the area of a famed brackish lagoon called Te Whanganui o Orotu and the Tutaekuri River and dominated by the inordinately large Otatara Pa with an impressive large chiefly house site at the summit; and Te Hika a Papauma associated with a series of inland valleys and lakes to the south. These chiefdoms were separated by a buffer zone along the Ngaruroro River (see Allen 1996, p. 179, Fig. 4).

I employed data on soil types, rainfall, frosts, and vegetation to reconstruct the economic resources of these groups; I also calculated labor investments, storage volumes, and residential data to document how each polity sought to protect itself and its resources with *pa*. This work revealed that fortifications in mid-Hawke's Bay were situated tactically and strategically to control access to resources and movement corridors.

In sum, my research in Hawke's Bay documented the association of *pa* with favorable economic resources, but discounted Vayda's emphasis on the costs of clearing forest for gardens given the relatively warm and dry summers of Hawke's Bay. Analysis of site catchments and ethnohistory revealed that marine, riverine, lacustrine, and forest resources were also protected by fortifications. Horticulture only provided a portion of the pre-European economy, and in many inland areas, it was negligible. I argued that Maori leaders organized and financed the construction of *pa* through attracting followers with security and surer access to resources. While fortified communities were the nexus of polity formation, they nevertheless also served to *limit* the power of chiefs (Allen 2006, 2008). The Maori *pa* was a sophisticated and highly effective fortification that could (more often than not) resist direct attacks. Utilizing the perspective of military science, I have pointed to the inherent advantages of defense, particularly with fortifications, in pre-state-level societies, and argued that archaeologists often do not appreciate the role of fortifications wherever they are to be found. Fortifications make regional consolidation extremely difficult in pre-state societies, as should be recognized by any model of warfare and political organization (Allen 2006, 2008; Arkush 2011; Liu and Allen 1999).

As others (Marshall 2004, p. 70; Phillips and Campbell 2004, pp. 98–99) have noted, my interpretations stand rather apart from those of most New Zealand archaeologists. This is because my colleagues there have not attempted to replicate my approach over a large region where polities and boundaries can be identified through spatial analyses. While my study region in Hawke's Bay was about 2000 km^2, other studies of site distribution in New Zealand have been limited to regions ranging from only 9 to 165 km^2 (Marshall 2004, p. 79, Table 3.5). Nevertheless, Marshall (2004, p. 70) proclaims "Allen's assumption

that settlements could be equated with discrete social groups occupying fixed territories was highly problematic in the New Zealand context." If I follow her argument, since no other (small) regional study has detected polity boundaries in New Zealand through the distribution of *pa*, they did not exist, and therefore, either Hawke's Bay is unique, or I created polities out of statistics. I might suggest that a larger study area would yield similar results in other areas of New Zealand. Nor do my critics engage with the other half of my evidence: that of the Maori history of Hawke's Bay. Unfortunately, New Zealand archaeologists have a long history of their own that has all too often failed to use or even acknowledge the perspective and knowledge of Maori people in the areas where they work. Instead, my project embraced this information, and I have maintained an active research partnership that has been continuously vetted through the tribal government as well as local *kaumatua* (elders) of the various regions in Hawke's Bay since 1990 (Allen 1991). In short, the polities delineated in my research were not created by me on a computer; they existed in the past and are still there today in the form of *wharenui* (meeting houses) standing on *marae* (communal areas belonging to local groups called *hapu*).

3.3 Maori Views of Maori Foods

A productive new direction for research on the roles of economy and warfare in prehistoric New Zealand is to build on earlier studies through Maori perspectives on food. While my earlier work was heavily influenced by cultural ecology, Marxism, and social power theory, here I take a broader look at food resources and their meanings to the people of the past and present. I take advantage of rich ethnographic sources on Maori agriculture, hunting, and gathering as well as perspectives of the present-day Maori people. This is a landscape approach that looks beyond soil types and frost patterns to see the resources from the Maori point of view. My questions include the following: (1) How the Maori perspective on food can add to the ecological arguments of past studies; (2) how the status of different foods affected the political and military decisions of leaders and followers; and (3) how different types of food resources relate to the nature of fortified sites. The first step is to consider the full range of foods available to the pre-European Maori.

3.3.1 Horticultural Products

When the first canoes touched the shores of New Zealand, they were likely stocked with a wide variety of Polynesian cultigens that were well suited to coral atolls, high volcanic islands, and other types of islands in the tropics. Most of these, however, failed to be widely adapted to the wet and frosty winters of New Zealand. Likely, the mild northern third or so of the North Island served as a sort

of nursery where some plants survived the first few centuries of human colonization, though it is also possible that plants that initially failed were reintroduced later (Best 1976; Colenso 1881; Davidson 1984; Firth 1972; Fox 1974; Leach 1979, 1984; Vayda 1960; Yen 1961, 1974). As noted earlier, it was the development of new storage technology that enabled tropical cultigens such as the sweet potato and taro to become fairly common staples in favorable horticultural areas.

The most important cultigen in New Zealand was the sweet potato or *kumara* (Best 1976, pp. 99–227). Best (1976, pp. 111–116) lists well over 80 different names for varieties of *kumara,* though there is likely considerable overlap among these. In general, the tubers of the sweet potato were grown along gentle slopes in well-drained, friable soils near the coast. Soils were often improved for cultivation through the addition of sand and gravel. The tubers were usually planted in shallow mounds (*puke*), often protected by windscreens (usually wooden fences or stone walls), and covered with a layer of gravel to protect them from cold or wind and to retain sufficient moisture. Planting of tubers was restricted to men and conducted in early spring during the month of October. The work was highly ritualized and coordinated by a *tohunga* (priest, specialist). Garden plots were communal, but were subdivided by family groups. The garden was under the domain of the agricultural deity Rongo, often depicted or evoked with carved stone figurines or preserved human heads. The garden was highly *tapu* (Firth 1972, pp. 245–281). *Tapu* means simultaneously unclean and sacred, and something *tapu* is to be both avoided and respected. However, people of different statuses approach *tapu* objects or actions in very different ways. Penalties for disturbing the crop were severe, including death. Smaller groups planted their *kumara* in many small scattered patches sometimes considerable distances from habitation areas to avoid destruction by marauding war parties or *taua muru* (plundering parties comprised of local people to avenge an insult or broken *tapu*). In contrast, larger groups could maintain gardens in the open and close to their *pa* (Best 1976, pp. 132, 140).

Kumara, while fairly hardy in the ground, were extremely vulnerable after being harvested. The intensification of this plant depended on the development of intensified storage technology to protect tubers from cold and wet conditions during the winter months. Storage facilities (*rua*) were roofed pits with drains, shelves, and sufficient insulation to protect the tubers. They were stored in baskets, with next year's seed crop (compact tubers with many *whata*, or eyes, as they produce more shoots), and kept separate from the stores meant for winter consumption. Storage pits are highly visible in the archaeological record of the North Island (Fig. 3.2). The *rua*, often with raised rims along the east coast of the North Island, are quite numerous in landscapes where gardening was commonly practiced (Davidson 1984; Fox 1974).

The next most important cultigen was taro (*Colocasia antiquorum*). There were several varieties present in New Zealand, but it could only be grown in the warmest parts of the North Island. Taro requires moister soil than *kumara*, though there is no evidence that irrigation was present in New Zealand. This crop was not considered *tapu* and lacked the prestige of *kumara* as a food. Both men and women were involved in planting and harvesting taro. It was planted in small isolated

Fig. 3.2 Aerial view of raised rim *kumara* storage pits within a portion of Tiramoana Pa (W21/1), a site within a small coastal polity at Te Awanga in mid-Hawke's Bay. View to the north, *photograph* by the author, February 1990

patches and required no special storage facilities. These tubers were often simply left in the ground until eaten or were placed in piles covered with rushes (Best 1976, pp. 233–243).

Uwhi, yams (*Dioscorea* spp.), were the final Polynesian food crop, grown only in the far north and along the warmer stretches of the east coast of the North Island. This plant was not associated with *tapu*, and like taro did not depend on special storage facilities. Little is known about the use of yams in New Zealand, but it is clear that they were present prior to European contact (Best 1976, pp. 228–232).

Three other plants were transported to New Zealand by Polynesian colonists. The most important was a variety of the *ti* tree (*Cordyline terminalis*), the bottle gourd (*Lagenaria siceraria*), and the paper mulberry (*Broussonetia papyrifera*). The first was a food source and discussed below, but the other two were used for storage containers and clothing or mats, respectively.

3.3.2 Semi-Cultivated Foods

The introduced variety of *ti* produced an important food for times of war, but like taro and *uwhi* was limited to the northern part of the North Island where temperatures were warmer. It was called *ti pore* in New Zealand, and it was planted but not tended. The edible part of the tree is a large root which was beaten and steamed in an earth oven (*hangi*), forming a sugary mass that was "highly esteemed, not only for its agreeable taste, but for its nutritive and keeping qualities, especially in times of war, when it was a question of provisioning the *pa*, or carrying food on the war path… it is probable, however, that owing to the slow growth of the plant, it was most generally used as a sweetmeat" (Best 1976, pp. 257–258).

Several other varieties of the *ti* plant were indigenous to New Zealand, and the leaves and taproots of many of these were similarly used as a food which could be stored a long time, or for periods when other foods were unavailable. The most

common is *Cordyline australis*, generally known in New Zealand as the cabbage tree. It had many names, but a widely used one was *ti kouka.* Its uses and importance varied considerably across New Zealand (Roskruge 2012, pp. 55–57). In the Hawke's Bay region, it provided an important food during the winter months when other crops were unavailable, and *ti kouka* "is sweetest when the first frosts have arrived" (Robert MacDonald, personal communication, 2013). Perhaps the highest status indigenous variety of *Cordyline* was called *ti para*, and in some areas, it was planted and harvested with considerable ritual (Best 1976, pp. 258–272). In sum, the *ti* plant was sometimes an important food, particularly during times of scarcity, and it is common to see a number of them in the vicinity of archaeological sites.

3.3.3 Gathered Plants

In most of New Zealand, cultigens were not viable. This includes nearly all of the South Island and much of the inland regions of the North Island. Short frost-free periods were anathema to tubers. Consequently, the most prevalent staples for the Maori were gathered native plant resources. The most important was *aruhe*, the rhizome of bracken fern (*Pteridium esculentum*) (Shawcross 1967). The root was dried, roasted, pounded, and formed into cakes or rolls 15–25 cm long and called *komeke*. The bracken fern was found throughout Polynesia and was nearly always a food source. However, for all islands but New Zealand, it was a famine food, eaten only when all else had failed. While relatively nutritious, the root required substantial preparation and produced a tough, fibrous meal that wore teeth extremely quickly (Houghton 1980). An apt Maori proverb states that *ko ora karikari arhue, ka mate takiri kaka* (a fern root digger has plenty of food, but a parrot-snarer will go hungry). Perhaps the need to resort to fern root as a staple best illustrates the marginal nature of the New Zealand climate and biogeography for the cultivation of Polynesian tubers. It further heightens the value of the areas which were cultivable.

Yet in war, *aruhe* was the preferred food of warriors on the march, even for the elite. One could count the number of *ariki* (chiefs) in a *taua* (war expedition) by the numbers of chewed and discarded remnants of specially prepared *komeke* (Best 2001, pp. 63–64). If at all possible, slaves were brought along on *taua* to carry *komeke*, as it would pollute the *mana* (spiritual power and prestige) of warriors, both commoners and chiefs. However, if this was not possible and the party had to carry its own supplies, *komeke* were carried in the left hand as that side of the body is *noa* (profane, ordinary), while the right side has *mana* (Best 2001, p. 64).

Other gathered plants were numerous. These included a variety of berries such as those from the *karaka* (*Corynocarpus laevigatus*), *tawa* (*Beilschmiedia tawa*), and *kahikatea* (*Dacrycarpus dacrydioides*) trees. These trees are fairly common in the vicinity of archaeological sites. Other gathered plants are described in Roskruge (2012).

3.3.4 Terrestrial Animals

New Zealand was animal poor, with the exception of birds that underwent adaptive radiation to fill a number of niches normally reserved for mammals or marsupials. The most obvious source of food among them was the variety of giant flightless *moas*, but they were extinct within a few centuries of human colonization (Anderson 1989; Davidson 1984). Dozens of other birds were similarly extinct or extirpated due to losses from hunting, raiding nests for eggs, and especially habitat destruction.

By late prehistory and the early contact period, many species of birds were understandably considered a prestigious and/or highly desirable food. Preferred species included the muttonbird (*Puffinus griseus*), pigeon (*Hemiphaga novaeseelandiae*), and the *tui* (*Prosthemadera novaeseelandiae*), but there are dozens of others (see Davidson 1984, pp. 134–137). Birds were usually caught with snares, and they were mainly hunted by specialists armed with both effective traps and considerable magical assistance (Firth 1972, pp. 145–169). Firth (1972), in his classic work *Economics of the New Zealand Maori*, completed a thorough analysis of fowling. He noted:

> [t]he bulk of the birds from the snaring are set aside for preserving. .. the pigeons or *kaka* parrots, or whatever they may be, are then roasted before a fire, and packed in calabashes, boiling fat being poured in over them to fill up the gourds and so seal them up in air-tight fashion. Birds so preserved are termed *huahua manu* and are esteemed a great delicacy at a feast. Very often they will form the center piece of the occasion. The calabash is provided with carved wooden legs, a carved mouthpiece, *tuki*, is lashed to the top, a small mat wrapped around, for decorative purposes, and the whole adorned with feathers of hawk or pigeon which are hung in bunches from legs and sides. Such a *taha huahua* – a calabash of preserved food – is very much admired, and as forming the principle item of the feast was placed before important guests or presented to the chief persons of rank present (Firth 1972, pp. 164–165).

Their status as a prestige food is further illustrated by their manner of storing. The calabashes were kept in highly decorated elevated storage structures called *pataka*. These structures consisted of wooden structures decorated with carvings placed on top of pillars to protect stored birds and dried fish from *kiore* (rats) (Phillipps 1952, p. 95). *Kiore* (*Rattus exulans*) arrived in New Zealand as stowaways on the colonizers' oceangoing canoes. They, too, were eaten, but as a low prestige food. The Polynesian dog (*Canis familiaris*), or *kuri*, was the sole purposefully transported mammal to survive Polynesian voyaging to New Zealand. Neither pigs (*Sus scrofa*) nor chickens (*Gallus gallus*) evidently made it through the beachhead bottleneck (Keegan and Diamond 1987), though they are fairly common throughout Polynesia (Kirch 2000). To be sure, the appearance of a two-meter-high *moa* at the first landings might have led to a serious devaluation of any chickens that managed to survive an ocean crossing. Dogs were useful for hunting, security, refuse control, and as a source of fur cloaks, but nevertheless were also eaten.

A final source of animal protein that was obtained on land came in the form of sea mammals, mostly seals (Davidson 1984, pp. 131–133). This was most common along the coast of the South Island where habitats were favorable.

3.3.5 Freshwater Foods

Several freshwater resources served as important foods, particularly for inland regions far from the ocean. These included species of fish, but more importantly eels (*Anguilla* spp.) called *tuna.* Freshwater mussels, *kakahi* (*Hydrilla menziesii*), were edible, but not regarded as a high-quality food compared to ocean shellfish (Davidson 1984, pp. 141–145; Firth 1972, pp. 68, 72, 171–172, 181).

3.3.6 Kaimoana (Seafood)

Most protein was derived from the ocean in the form of fish and shellfish. Dried and smoked fish could be kept in the elevated *pataka* along with dried fern roots and birds for periods up to months. A wide variety of fish were taken with nets, lures, and hooks, both from the shore and from canoes. Fishing territories were well known and demarcated, using coastal headlands and other landmarks (Barber 2003). The brackish Inner Harbour of Hawke's Bay (Te Whanganui o Orotu) was famed for flounder (*Rhombosolea plebeia*), one of the major reasons it was invaded by elements of the Ngati Kahungunu *iwi* (or tribe) around 500 years ago (Allen 1996; Liu and Allen 1999). Upon hearing about the harbor and its abundant food, the chief Tawhao declared, "the harbour shall be my garden" and the chief Taraia, hearing about the abundant *kahawai* (a fish, *Arripis trutta*) in the Ngarururo River claimed it "shall be my drinking cup" (Prentice 1976, p. 40). Nearly all archaeological habitation sites within a few kilometers of the coast have shell middens. But it is also clear that there was tremendous variation in the abundance and diversity of shellfish along the coast. Such spots are still well known and well used today.

Sharks (*mango*) were pursued from canoes, usually during expeditions organized by chiefs, attendant with considerable *tapu* (Firth 1972, pp. 227–230). Shark fishing was a metaphor of war against sea monsters called *taniwha.* Chiefs dutifully pursued these real *taniwha* just as the mythical *raison d'être* of European knights was to slay dragons.

Less elusive and far less dangerous, *karengo*/*parengo* or seaweed [(*Porphyra columbina*) (Roskruge 2012, p. 45)] was collected off rocks at low tide (though I took a nasty fall in pursuit of some in July 2010). There is an important site for this at the southern end of Ocean Beach in Hawke's Bay, where it is gathered by Maori people in late August or September, for it appears only during the coldest part of the winter after substantial rainfall. It was thus an important food during the time of greatest food scarcity.

3.4 Maori Food, Maori War

With the menu set but for one important course, the next step is to more fully consider how foods fit into Maori warfare, as a motive for attack, a need to protect or control resources, and in the practice or conduct of war.

3.4.1 Kaitangata (Cannibalism)

The last source of food prior to European contact provides the starkest link between food and war in prehistoric and early historic New Zealand. *Kaitangata* (people as food or eating people) was a major source of nourishment for *taua* when in neutral or enemy territory (Best 2001; Vayda 1960). It was also the reward for a successful rout or sack of a community. War parties travelled light and fast, and other than fern root bundles to last a few days, they had little or no commissariat. The ideal outcome was to sack a community and then to devour captured stored foods and then to cook and eat the slain. If this was not achieved, a secondary goal was to at least kill one or a few people outside of their defenses for sustenance. War parties quite literally lived on their enemy. Successful warriors might gorge on human flesh for days at the scene of their victory, enjoying "*Te Ika a Tu*" (the fish of Tu, the war deity), the victims in battle or sacking of a *pa*.

A key function of *kaitangata* was to insult the enemy and to destroy their *mana*. For example, the ultimate insult was to convert men to cooked food and then to use their bones to construct utilitarian tools used for gathering yet more food. Their heads might be smoked and preserved and then displayed next to the victors' ovens to continue to humiliate them by associating them with the female realm of food preparation. Any human flesh taken back to home communities was carried by a few prisoners (likely related to the flesh they were forced to tote) kept alive long enough to accomplish that *tapu* task.

As noted by Best (2001, p. 65), "it [*kaitangata*] was a source of pure unadulterated joy to the old-time Maori; to be able to say to an enemy, 'I ate your father' or 'your ancestor,' although the occurrence may have occurred ten generations before his time." I saw this very thing in 1990 when I accompanied a member of the *iwi* (tribe), Ngati Kahungunu, to visit another community two hours south. When he met one of the local fellows, one of the two pointed out that his ancestor had eaten one of the other's ancestors. They laughed about it, but there was most certainly an uncomfortable atmosphere.

Kai oraora were chants composed by those eager to kill and eat their enemies in the future. An excellent example is an excerpt from one composed by the Tuhoe (an *iwi* on the East Cape of the North Island) *ariki* (chiefs) Taru and Te Nau against their enemies, the Ngati Ruapani (Best 2001, pp. 91–92):

Whakataha koe, E Te Ariki! ki tahaki
Kia haere iho aku niho i runga i tō tipuaki
Ka pakeke tō kutu, te riha, i aku niho

I te apunga i ngā roro o Whakapiko
Taku kai – e
Kai kutu au, kai roro au
Kai takatakanga hou ōu e Horu
Te titohia iho ki te tukituki
U rere ana te wharawhara
Aside with thee, O Te Ariki!
That my teeth may gnaw thy skull,
That the parasites may be crushed,
When glutting on the brains of Whakapiko
O! My food!
A parasite, a brain eater am I!
An eater of thee, O Horu!
When stricken and smashed
Then fly the fragments!

Kaitangata was most certainly not a staple. It was relatively rare, with incidents remembered for centuries (and as my anecdote from 1990 illustrates, still counting). But without question, human flesh was the highest status food of all and usually reserved for elites and warriors after a successful raid or attack.

3.4.2 Kai Tapu (Food Prohibitions) and War

It has already been noted that a primary concern for chiefs and others of status was maintenance of their *mana* by avoiding *tapu* prohibitions. Firth (1972, p. 181) states that "cooked food and all things connected therewith were the very antithesis of *tapu*." Men did not cook food in underground ovens, collect firewood, nor carry cooked foods on their backs, as demonstrated by the manner in which roots were carried by war parties.

Tapu could also be used as a political and economic tool. Chiefs could place resources under *tapu* through planting carved wooden posts (*rahui*) in their vicinity to declare them off-limits to their followers or members of other groups (Firth 1972, p. 258). As the survey of food items undertaken earlier revealed, many important economic resources were at *all* times considered highly *tapu* and thus were approached only by authorized specialists or with chiefly or priestly (*tohunga*) oversight. These included *kumara* gardens, fishing grounds, eeling weirs, fowling, and shark fishing. Violation of *tapu* restrictions was a frequent cause of war as it was not just theft. Such resources could be damaged or contaminated irreparably by encroachment or trespass. Even an insult to a *tapu* resource was just as bad as actually taking it through force or theft. Food was not easy to come by in New Zealand, and the most desirable of foods were the most difficult to secure. As a consequence, threats of any kind to food functioned as a hair trigger to violent response, required by an ideology of *utu*, or revenge. As I have noted elsewhere:

> [W]hile all Polynesian societies have similar cultural concepts to maintain *mana* against insult, affront, or attack, the Maori ideology of *utu* is unique. This deeply embedded value system evolved in New Zealand under conditions of endemic warfare. It served as an incentive to maintain a strong deterrent that tolerated no transgression whatsoever. A failure to retaliate to any kind of threat or attack was an invitation to more attacks, perhaps even direct assaults aimed at destroying or removing a group. Fierce and assured counterstrikes were the best means to maintain land and to protect a polity. This was in effect a policy of mutually assured revenge (Allen 2006, p. 208).

Recently, Barber (2012) has examined the role of *kumara tapu* in the first documented encounter between Europeans and Maori. He points to archaeological data which reveal a few *pa* sites, concentrations of *kumara* pits, and improved garden soils in the immediate vicinity of the shoreline when Abel Tasman and his two Dutch ships entered Golden Bay in the northwest corner of the South Island in December 1642 (Fig. 3.3). This would have been in the middle of the *tapu* period for gardens. This encounter ended violently as a number of war canoes cut off a small boat going back and forth between the two ships as Tasman was trying to establish friendly relations. Three Dutch crewmen were killed, with one body being hauled back to shore for (with little doubt) *kaitangata*. Barber argues that

Fig. 3.3 View of Anatakapau Bay, Mutton Cove, and Separation Point in Abel Tasman National Park. Separation Point was one of the *pa* sites that defended the gardens, fishing areas, and shellfish resources of Golden Bay. Likely, its inhabitants were involved in the response to Abel Tasman's ships. The violent encounter between the local Maori people and the Dutch took place in Golden Bay a few kilometers northwest of Separation Point. View to the north, *photograph* by the author, August 2014

this violent response was likely because of the threat to the *tapu* of the gardens. He notes that harvesting ceremonies were required to lift *kumara tapu* and that these often invoked the mythological struggle between the deities Rongo (agriculture) and Tu (war) and thus argues, "the harvest officiator acting as Tū digs up selected crops, effectively killing and devouring Rongo" (Barber 2012, p. 804).

Barber further argues that the Tasman encounter escalated from defiant challenge to violence because of this perceived threat to the *tapu* of the gardens. He points to the next recorded encounter in the north of the South Island, that of James Cook in Queen Charlotte Sound in January 1770, which "resolved into social interaction following a standard show of defiance" (Barber 2012, p. 806), with the critical difference being that this latter encounter occurred in a region without horticulture. Barber's interpretation is that the Maori response to the Tasman visit was unusually violent because of special circumstances:

> [It was] an outcome of Māori identifying a Dutch threat to highly regulated production. Māori warnings and hostility may also have channeled expressions of concern and fear around the intrusion into, and potential ritual violation of, the *tapu* and gardens in the care of Rongo. The Dutch had come in effect, as Tū rather than as Rongo, where in the middle to later part of the myth cycle, the *kūmara* was threatened and eventually taken by force in the depredations of the war god and his allies (and representatives) (Barber 2012, p. 807).

I would agree that this was likely perceived by the *tangata whenua* (people of the land) of Golden Bay as a direct threat to their gardens and the *tapu* on them. However, we have nearly exactly the same scenario in Hawke's Bay in October 1769 when Cook arrived in *Endeavour* (for details see Allen 1994, pp. 160–168). *Endeavour* was also challenged by a large number of well-coordinated war canoes. Unlike the Dutch, who may have misread the situation through not understanding the dire nature of the threats (while it is not obvious how this could happen, it is possible), Cook had aboard the Tahitian chief Tupaia, and he provided rough translation which left no illusions as to the intentions of the defensive force. They were in effect saying: Come down out of that large canoe and fight like men, we will smash your skulls with our war clubs and then eat you! Cook wisely deferred to drop down a smaller boat. In one encounter off the coast of Mid-Hawke's Bay, he fired warning shots with cannon to stifle an imminent attack by a number of coordinated canoes. After this remarkable display of smoke and sound, a more peaceful group was persuaded to approach, and trade was conducted. However, the following day, Tupaia's young servant or son was seized by another group engaged in trade and forced into one of their canoes. Cook, obviously ready for this sort of event, ordered his men to open fire on the fleeing canoe and killed or wounded several of the Maori, and in the traditional historical view at least, the young Tahitian was able to jump out and was rescued. The perspective (passed on orally since the incident) of the local *tangata whenua* is that rather than abduction, the men in the canoe were the ones trying to rescue the boy from the clutches of such strange-looking people. Many local Maori people are not pleased that the prominent headland where the incident occurred is known as Cape Kidnappers, rather than by its important Maori name of Te Matau au Maui

(the Fish Hook of Maui), where the deity himself hooked and pulled up the North Island from the sea.

Similar tense and sometimes violent encounters took place along the coasts of New Zealand at different times of the year (not just at harvest time) during the early contact period. The difference that matters is not whether there was or was not harvest *tapu* underway at the moment. It is that Cook was more experienced and judicious in Polynesian encounters than Tasman or others, such as the French officer Marion du Fresne slain in the Bay of Islands in 1772. He knew better than to lower small boats into the kill zone of far swifter and more numerous war canoes paddled by obviously hostile and coordinated forces. Of course, a few years later, he seems to have lost his situational awareness and was himself killed in Hawai'i.

Barber (1996) has also argued that *pa* fortifications are best seen as monuments that symbolized group identity rather than as pragmatic forms of defense. The argument that the Tasman encounter in Golden Bay encounter was unusually hostile and not the normal response of Maori to unexpected visitors is in this same vein—it downplays the seriousness and ferocity of Maori warfare. Defiance toward enemies was not scaled down when garden *tapu* were not in effect. Vigilance and *utu* were constant and ever-present. It did not matter which season the Dutch showed up in Golden Bay, they likely would have received the same response (even if opposed by a smaller force) and the same outcome if Tasman had dropped down small boats in harm's way. As the character Chef learned during a curtailed mango expedition in the film *Apocalypse Now*, never get out of the boat.

3.4.3 The Seasonal Cycle of Food and War

Firth's analysis of Maori economics outlines the annual cycle of work (Firth 1972, pp. 70–89). This had a tremendous bearing on the conduct of war. The planting of the *kumara* crop in October signaled the start of the war season. The cultivation season started with the first appearance of the star called Rehua (Sirius) in the night sky, also called Rehua Kai Tangata, or Rehua the Eater of Men (Best 2001, p. 151). It was thus both the sign of planting and upcoming war. When the tubers were securely planted under proper direction, men were freed up from gardening labor and tending the crop then fell to women and children for the spring and summer. The onset of harvest in April often meant the end of the war season as men returned to economic activity.

Another reason this was the time of war was the relative abundance of food in the spring and summer (November through March). It was the time of greatest surplus and variety of available resources, making it easier for war parties to find food while on the move and at the same time enabling communities to sustain themselves during the absence of young men.

3.5 Food and Fortifications in Prehistoric New Zealand

The association of fortifications and economic resources has long been obvious, from the first observations of European visitors. *Pa*, in addition to their role in protecting people from attack, housed food stores and functioned to secure gardens and other resources (Allen 1996, 2006, 2008; Best 1975, 1976; Davidson 1984, 1987; Fox 1976; Vayda 1960).

The analysis of polities and their *pa* and resources completed in Hawke's Bay offers a clear illustration that the most favorable resources produced the largest and most integrated political formations in the region (Allen 1994, 1996). The largest polity was Te Hika a Ruarahanga, associated with prime garden lands with long growing seasons, the unique brackish lagoon Te Whanganui o Orotu, excellent access to rivers, and proximity to the ocean. This polity illustrates the ability of a fairly complex chiefdom to rely on population size as a major deterrent to attack. It had a concentration of large fortified communities able to ostentatiously display stored foods. *Kumara* pits are common, both within and outside of *pa*, and highly decorated raised storage buildings such as *pataka* for storing dried fish and fern roots were also likely constructed on the numerous terraces within the polity. Particularly noteworthy, this polity had a number of fortified food stores for *kumara* along the Tutaekuri River located some distance from the fortified habitation sites. They were capable of defending these with small garrisons and the threat of immediate reinforcement. These were the property of the chiefs of Te Hika a Ruarahanga, making them part of the political economy of this chiefdom. The chiefdom clearly had inordinate access to the highest status foods in the region and was also able to display these resources with little fear of losing them.

The next largest polity, located across a "no-man's land" of about 15 km, was Te Hika a Papauma. Though it was of similar population size to the Ruarahanga polity, it was not as integrated. Rather than having central places, it was comprised of confederations of closely allied clusters of similarly sized *pa.* While nearly all of the constituent fortifications have a number of internal storage pits visible, there are only three or four relatively small dedicated fortified food storage sites in Papauma. Furthermore, these are located in the middle of the polity rather than on the margins as are those along the Tutaekuri River. They are well behind the border of the polity, modest in scale, and clearly not ostentatiously displayed.

The next scale of communities in the region includes a number of small coastal polities characterized by a dozen or so fortifications each. These small polities lack evidence of marked integration. Their *pa* include storage pits, but there are no specialized fortified food stores as seen in the two larger polities. The primary resource base of these polities and *pa* is clearly *kaimoana* or seafood. The beaches of these polities have high densities of shell middens, and all of the fortified sites have clear shell middens as well.

Lastly, the hinterland region of Hawke's Bay has a number of small scattered *pa* that correlate with a much less integrated group of people called the Ngati Upokoiri. These sites represent much smaller concentrations of people and nearly

all lack storage pits. The defensive strategy of the hinterland was thus extremely different than that of the larger polities in the region.

The most prestigious foods were clearly claimed and controlled by the largest polities. Only the largest could afford the luxury of essentially bragging about their abundance by displaying stored resources and gardens, even far from their population centers, as described by Best (1976, p. 140). These resources included both the high-status *kumara* (ocean resources) and the unique brackish lagoon with its famed flounder and shellfish. The next largest polity enjoyed productive garden lands, but lacked coastal access. Their stores were not displayed and clearly were not monopolized by chiefly leaders to the same extent. The coastal polities secured for themselves access to desirable marine resources, but were vulnerable to incursion from larger and more integrated groups. Finally, as noted by Best (1976, p. 132), the people of the hinterland avoided demonstration of food surplus and relied on scattered and isolated gardens or other resources. Their main access to prestigious foods would have been birds from the extant forest areas inland and away from the cultivable areas of Hawke's Bay.

3.6 Conclusion

In pre-European New Zealand, food and war were inseparable. Cannibalism was the ultimate linkage of war and food, but nearly every type of food had a major role in either the aims or conduct of war, if not both. Wars were fought over economic resources, but dictated by the availability of food and the time of year. Different types of food were not equal, and those with a high degree of *tapu* necessitated a posture of defense so extreme that even a spoken insult to a garden or shellfish bed demanded punishment by force if at all possible. Large polities, such as Te Hika a Ruarahanga in Hawke's Bay, could dangle and boast of highly prestigious resources such as Te Whanganui o Orotu or prominent food storage facilities in front of other groups with little fear, but in most cases, it was important for a community to conceal vulnerable food resources to discourage insult, trespass, or attack. In all ways then, the realms of Maori food, such as that of Rongo the agricultural deity, meshed with and were interwoven with those of Tu the god of war or Rehua the Eater of Men. It is hoped that this exercise in combining ecological and economic perspectives with emic views of Maori foods provides a more nuanced understanding of Maori warfare than can ecology or economics, alone or combined.

Acknowledgments The greatest privilege of my professional career has been the close relationship that I have enjoyed with the *tangata whenua* (the people of the land) of Heretaunga and the surrounding regions since early in 1990. My dissertation research there was possible only through the permission, support, and *aroha* of Te Runanganui o te Ngati Kahungunu (now Ngāti Kahungunu Iwi Incorporated) and the many *kaumatua* and other knowledgeable persons who have taught me over the decades. For this particular paper, I am particularly indebted to Robert MacDonald and Rose Mohi for sharing with me their knowledge of Maori food and showing

me so much of Ocean Beach and Waimarama. I am also very grateful to the tribal chair of Ngāti Kahungunu Iwi Incorporated, Ngahiwi Tomoana, for supporting my research since the 1990s and for hosting my Cal Poly Pomona contingent for a memorable *hangi* at his home in July 2011. *Kia ora* to my Heretaunga *whanau*!

I thank Amber VanDerwarker and Greg Wilson for inviting me to be a participant in both the Archaeology of Food and Warfare Conference in Santa Barbara in February 2013 and in this published volume. I would also like to express my appreciation for the presentations by the other participants in the meeting. Learning about their research and conversations with them were truly inspirational. The paper was improved by the comments of the anonymous reviewers, though I was unable to accommodate several good suggestions due to limitations of space. All errors and omissions are solely the fault of the author.

References

Allen, M. W. (1991). New Zealand archaeology and an active Maori involvement. *Anthropology UCLA, 18*, 70–82.

Allen, M. W. (1994). *Warfare and economic power in simple chiefdoms: The development of fortified villages and polities in mid-Hawke's Bay, New Zealand*. Unpublished PhD. dissertation, Department of Anthropology, UCLA, University Microfilms, Ann Arbor.

Allen, M. W. (1996). Pathways to economic power in Maori chiefdoms: Ecology and warfare in prehistoric Hawke's Bay. *Research in Economic Anthropology, 17*, 171–225.

Allen, M. W. (2006). Transformations in Maori warfare: Toa, pa, and pu. In E. N. Arkush & M. W. Allen (Eds.), *The archaeology of warfare: Prehistories of raiding and conquest* (pp. 184–213). Gainesville: University Press of Florida.

Allen, M. W. (2008). Hillforts and the cycling of Maori chiefdoms: Do good fences make good neighbors? In J. A. Railey & R. M. Reycraft (Eds.), Global perspectives on the collapse of complex systems (pp. 65–81). Albuquerque: Maxwell Museum of Anthropology (Anthropological Papers No. 8).

Allen, M. W. (2014). Hunter-gatherer conflict: The last bastion of the pacified past? In M. W. Allen & T. L. Jones (Eds.), *Violence and warfare among hunter-gatherers* (pp. 15–25). Walnut Creek, CA: Left Coast Press Inc.

Anderson, A. J. (1989). *Prodigious birds: Moas and moa-hunting in prehistoric New Zealand*. Cambridge: Cambridge University Press.

Arkush, E. N. (2011). *Hillforts of the ancient Andes: Colla warfare, society, and landscape*. Gainesville: University Press of Florida.

Barber, I. G. (1996). Loss, change, and monumental landscaping: Towards a new interpretation of the "classic" Maori emergence. *Current Anthropology, 37*(5), 868–880.

Barber, I. G. (2003). Sea, land and fish: Spatial relationships and the archaeology of South Island Maori fishing. *World Archaeology, 35*(3), 434–448.

Barber, I. G. (2012). Gardens of Rongo: Applying cross-field anthropology to explain contact violence in New Zealand. *Current Anthropology, 53*(6), 799–808.

Best, E. (1975). *The pa Maori: New Zealand dominion museum bulletin* (Vol. 6). Wellington: A. R. Shearer, Government Printer (First published in 1927).

Best, E. (1976). *Maori agriculture: New Zealand dominion museum bulletin* (Vol. 9). Wellington: A. R. Shearer, Government Printer (First published in 1925).

Best, E. (2001). Notes on the art of war as conducted by the Māori of New Zealand, with accounts of various customs, rites, superstitions, &c, pertaining to war, as practiced and believed in by the ancient Māori. In J. Evans (Ed.). Auckland: Reed.

Colenso, W. (1881). Contributions towards a better knowledge of the Maori race: Part IV. *Transactions and Proceedings of the Royal Society of New Zealand, 14*, 33–48.

Davidson, J. (1984). *The prehistory of New Zealand*. Auckland: Longman Paul.

Davidson, J. (1987). The paa Maori revisited. *Journal of the Polynesian Society, 96*(1), 7–26.
Firth, R. (1972). *Economics of the New Zealand Maori*. Wellington: A. R. Shearer, Government Printer (First published in 1929).
Fox, A. (1974). Prehistoric Maori storage pits: Problems in interpretation. *Journal of the Polynesian Society, 83*(2), 141–154.
Fox, A. (1976). *Prehistoric fortifications in the North Island of New Zealand* (Vol. 6). New Zealand Archaeological Association Monograph.
Houghton, P. (1980). *The first New Zealanders*. Auckland: Hodder and Stoughton.
Irwin, G. (1985). *Land, pa, and polity* (Vol. 15). New Zealand Archaeological Association Monograph.
Keegan, W. F., & Diamond, J. M. (1987). Colonization of Islands by humans: A biogeographical perspective. In M. B. Schiffer (Ed.), *Advances in archaeological method and theory* (Vol. 10, pp. 49–92). New York: Academic Press.
Kirch, P. V. (2000). *On the road of the winds: An archaeological history of the Pacific Islands before European contact*. Berkeley: University of California.
Leach, H. M. (1979). The significance of early horticulture in Palliser Bay for New Zealand prehistory. In B. F. Leach & H. Leach (Eds.), *Prehistoric man in Palliser Bay* (Vol. 21, pp. 241–249). Wellington: National Museum of New Zealand, Bulletin.
Leach, H. M. (1984). *1000 years of gardening in New Zealand*. Wellington: Reed.
Liu, J. H., & Allen, M. W. (1999). The evolution of political complexity in Maori Hawke's Bay: Archaeological history and its challenge to psychological theory. *Group Dynamics Theory Research and Practice, 3*(1), 64–80.
Marshall, Y. (2004). Social organization. In L. Furey & S. Holdaway (Eds.), *Change through time: 50 years of New Zealand archaeology* (Vol. 26, pp. 55–84). New Zealand Archaeological Association Monograph.
McGibbon, I. (Ed.). (2000). *The Oxford companion to New Zealand military history*. Auckland: Oxford University Press.
Phillips, C., & Campbell, M. (2004). From settlement patterns to interdisciplinary landscapes in New Zealand. In L. Furey & S. Holdaway (Eds.), *Change through time: 50 years of New Zealand archaeology* (Vol. 26, pp. 85–104). New Zealand Archaeological Association Monograph.
Phillipps, W. J. (1952). *Maori houses and food stores* (Vol. 8). Wellington: Dominion Museum Monograph.
Prentice, W. T. (1976). The Maori history of Hawke's Bay. In J.Wilson (Ed.), *The history of Hawke's Bay* (pp. 19–109). Christchurch: Capper Press (Reprint, Originally published (1939), Wellington, A. H and A. W. Reed).
Roskruge, N. (2012). *Tahua-roa; korare, Maori green vegetables: Their history and tips on their use*. Palmerston North: Institute of Natural Resources, Massey University.
Schmidt, M. (1996). The commencement of pa construction in New Zealand prehistory. *Journal of the Polynesian Society, 105*(4), 441–451.
Shawcross, K. (1967). Fern-root, and the total scheme of 18th century Maori food production. *Journal of the Polynesian Society, 76*(3), 330–352.
Sutton, D. G. (1990). Organisation and ontology: The origins and operation of the northern Maori chiefdom, New Zealand. *Man, 25*, 190–207.
Vayda, A. P. (1960). *Maori warfare: Polynesian society monographs* (Vol. 2). Auckland: A.H. and A.W. Reed.
Vayda, A. P. (1976). *War in ecological perspective*. New York: Plenum Press.
Yen, D. E. (1961). The adaptation of the kumara by the New Zealand Maori. *Journal of the Polynesian Society, 70*(3), 338–348.
Yen, D. E. (1974). The sweet potato and Oceania: An essay in ethnobotany. In *Bishop Museum bulletin* (Vol. 236). Honolulu: Bishop Museum Press.