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**Aileen Fox, *Prehistoric Maori Fortifications in the North Island of New Zealand***

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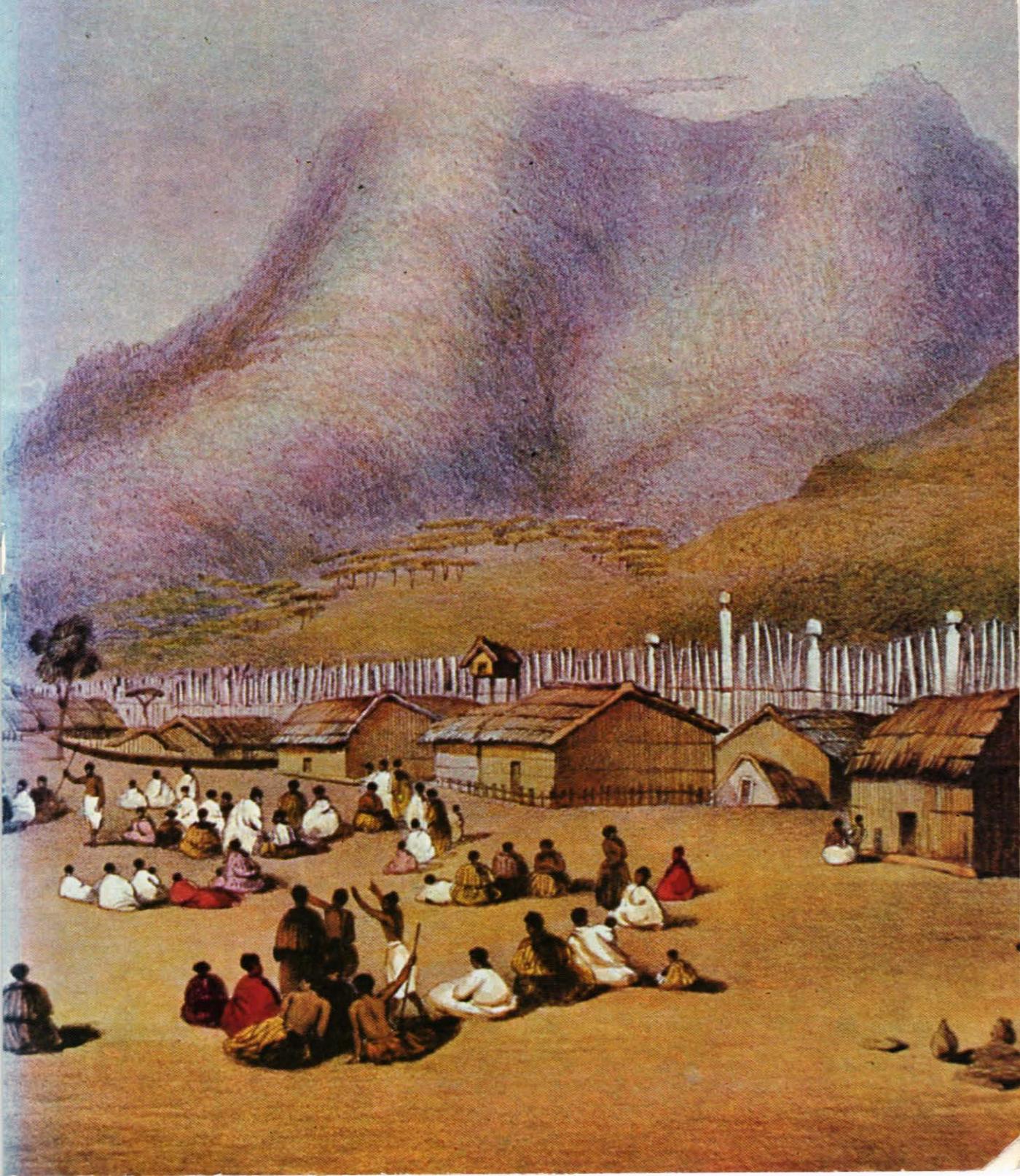


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# Prehistoric Maori Fortifications in the North Island of New Zealand

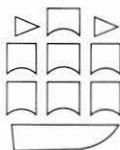
Aileen Fox



# Prehistoric Maori Fortifications

# Prehistoric Maori Fortifications In the North Island of New Zealand

Aileen Fox, M.A. (Cantab.), F.S.A.



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# Foreword

Native New Zealanders, known collectively today as Maori, had eastern Polynesians as ancestors. By the last half of the eighteenth century A.D. they had developed in the course of a 1000 year residence in New Zealand a variety of settlements, one of which, the fortified *pa*, attracted the attention and admiration of early European visitors and inhabitants. This is not surprising. Many of these newcomers were of British origin. Often they had Celts as one or more of their ancestors, and in the last half of the first millenium B.C. Celts too constructed hill forts very similar to some Maori *pa* and participated in a society which had a number of features in common with the Maori. Both indigenous groups moreover, used their fortifications in facing up to invasion by newcomers backed by a technologically more advanced civilisation, Romans on the one hand, the British military on the other. Thus despite an absence of any historical connection with the Celts, Maori fortifications have long been a fruitful source for commentary, comparison, and speculation.

Following the first hand accounts of the initial explorers and missionaries, there are the combat-based reports of the British military, and then the retrospective analyses of the Maori *pa* by well known New Zealand anthropologists such as Elsdon Best, or Sir Raymond Firth. The latter, for example, provided for the first volume of the English archaeological journal, *Antiquity*, a 1927 article on Maori hill-forts for a largely British audience. In the present book, this situation is reversed, and a noted English archaeologist, Lady Fox, provides for a largely New Zealand audience a commentary on the same subject.

As Lady Fox wrote us in her letter of inquiry, one of the reasons for wanting to come to New Zealand 'was an interest in the historic Maori

culture which seems to have much in common with the Celts of the Iron Age, one of my special subjects. I would be specially interested in seeing the Maori fortified settlements and comparing them with British hill-forts.' This book indicates how admirably she succeeded in that aim.

Aileen Fox studied at Newnham College, Cambridge, and at the British School in Rome. She married another famous British archaeologist and museum director, Sir Cyril Fox, raised a family, and in 1947 began to teach at Exeter, building up the subject of archaeology there to an honours school (with history and geography) before her retirement in 1972 as Senior Lecturer in the field. Her previous books have been on Roman Exeter, and Roman Britain and South-West England; her articles on Celtic and Iron Age archaeology. Thus, after a life-time in British archaeology, it is worth recording how her desire to study Maori fortification was accomplished. Her wish to visit New Zealand was, fortunately, known to a friend of Aileen's, the Vice-Chancellor of the University of Exeter, Dr F.J. Llewellyn, who, as he came from New Zealand, took up the matter with the University Grants Committee and with the Department of Anthropology at the University of Auckland. Having had a number of successful experiences with imported Englishmen as archaeologists, the Department agreed to import an English woman. It did request a small return, of course, and asked Aileen to teach what turned out to be very popular courses on Romano-British and Celtic archaeology not usually available to our students. Later it was suggested that as she was here and keen, she might well excavate a Maori hill-fort, and, if she took along a few of the students, they would benefit from the experience, and acquire some valuable training.

In all of this what impressed us most, or

perhaps I should say, kept most of us busy, was the Lady Fox capacity for fieldwork. Not only did she read all literature on Maori fortifications, and pick our collective brains on the topic, but she also dragged first one and then another of us off to visit the sites themselves about which we and others had written. She also began to record sites on her own which we had not seen, and finally, as I noted above, to excavate one of them at Te Awanga, in Hawkes Bay, where none of us had worked previously.

At this point it seemed to me sad that all this energy and hard won knowledge should benefit only those of us concerned with the detailed study of New Zealand prehistory. Here was someone who could communicate to a wider audience her newly won knowledge, and do it from a perspective quite different to our own. Here was someone who might put people back into these now abandoned fortifications, both Maori and Celtic, to the enjoyment and enlightenment of all. I therefore nominated Lady Fox to give the Macmillan Brown Lectures at Auckland University in June 1974, a nomination which the University readily accepted. These well attended public lectures were sufficiently successful in their purpose, to encourage the New Zealand Archaeological Association to try and bring them to an even wider audience. Not every slide that illustrated those lectures could be printed, nor could they be in colour, as so many were. Still it is my hope that those who have read this book and pondered its many illustrations, will when they next stand at the summit of One Tree Hill, or Mt Eden, or on the ramparts of some less imposing monument, now see more than is first apparent to the eye. As Aileen so often says when discussing the question of how to achieve preservation and protection of archaeological sites in this country: 'Once the public can see and understand them, sites become their own best advertisement', a heritage in which all New Zealanders can take pride whatever their origin.

Dr R.C. Green  
Professor of Prehistory  
Department of Anthropology  
University of Auckland

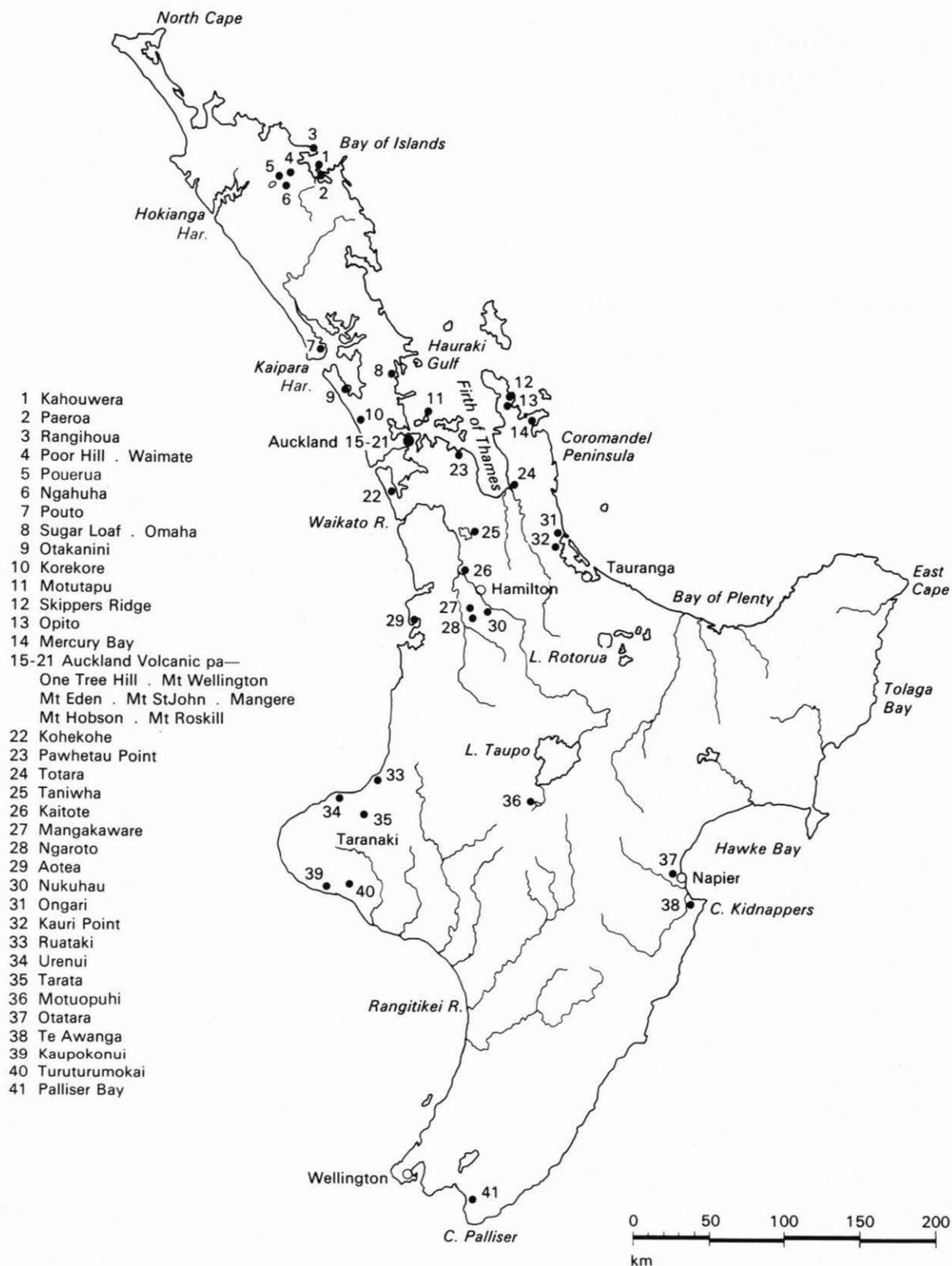
When Professor Roger Green asked whether he might nominate me to give the three Macmillan Brown lectures in Auckland in 1974, on the subject of Prehistoric Maori fortifications, I was a little non-plussed: firstly because I was not then familiar with the late Professor Brown's works and bequest, and secondly, because I had been barely a year in New Zealand, it seemed, and still seems, rather presumptuous for a British archaeologist to talk to a New Zealand audience about Maori antiquities. However Professor Green was very persuasive and when the University Council and the Macmillan Brown Trustees endorsed the nomination, I felt highly honoured. If these lectures, now in book form, prove worthwhile, I hope they may be regarded as a token payment to Auckland University and to the Anthropology Department for their hospitality and much kindness to a Visiting Lecturer in 1973–74.

The late Professor Macmillan Brown, who for many years was Chancellor of the now dismembered University of New Zealand, was a man of wide interests. As one of the Foundation Professors at Canterbury College, Christchurch in 1874, he was responsible for the teaching of English and Classics, though English literature was his main subject and abiding interest. After his early retirement from the Chair in 1895 he developed his interests in Anthropology and devoted much time to the study of the ancient peoples and civilisations of the Pacific and to comparisons that were worldwide. The results of his researches, which were carried on whilst he was Vice-Chancellor and Chancellor of the University, were embodied in a massive two-volume work *Peoples and Problems of the Pacific*, published in 1927. It is part of the terms of his bequest that the subject of the Macmillan Brown lectures, now given in each of the four Universities in

turn, should be related to one of Professor Brown's books or to some specific topic therein. The subject for the 1974 lectures, *Prehistoric Maori Fortifications*, was chosen for its connections with Professor Brown's major work: the Maori people belong to an eastern Polynesian race who came south to New Zealand across the Pacific; their numerous fortified *pa* in the North Island present problems that are still a challenge to the field archaeologist. On both counts, therefore, these lectures were concerned with 'peoples and problems of the Pacific'.

For publication, the informal and colloquial approach of the three lectures has been retained. The text of the first lecture has been expanded to form Chapters One and Two. Footnotes will be found at the end of each chapter, with an expanded Bibliography on page 66.

Aileen Fox  
Auckland 1975



1. The North Island of New Zealand, showing places mentioned in the text.

# Chapter one

## The evidence and its interpretation

### Literary and pictorial evidence

Little more than 150 years ago the fortified *pa* of prehistoric type was seen in action and recorded as a living entity by literate Europeans and was drawn at first hand by French and British artists. No study of Maori fortifications can ignore this wealth of literary and pictorial evidence: it provides, as it were, a touchstone for the archaeologist by which his findings can be assessed.

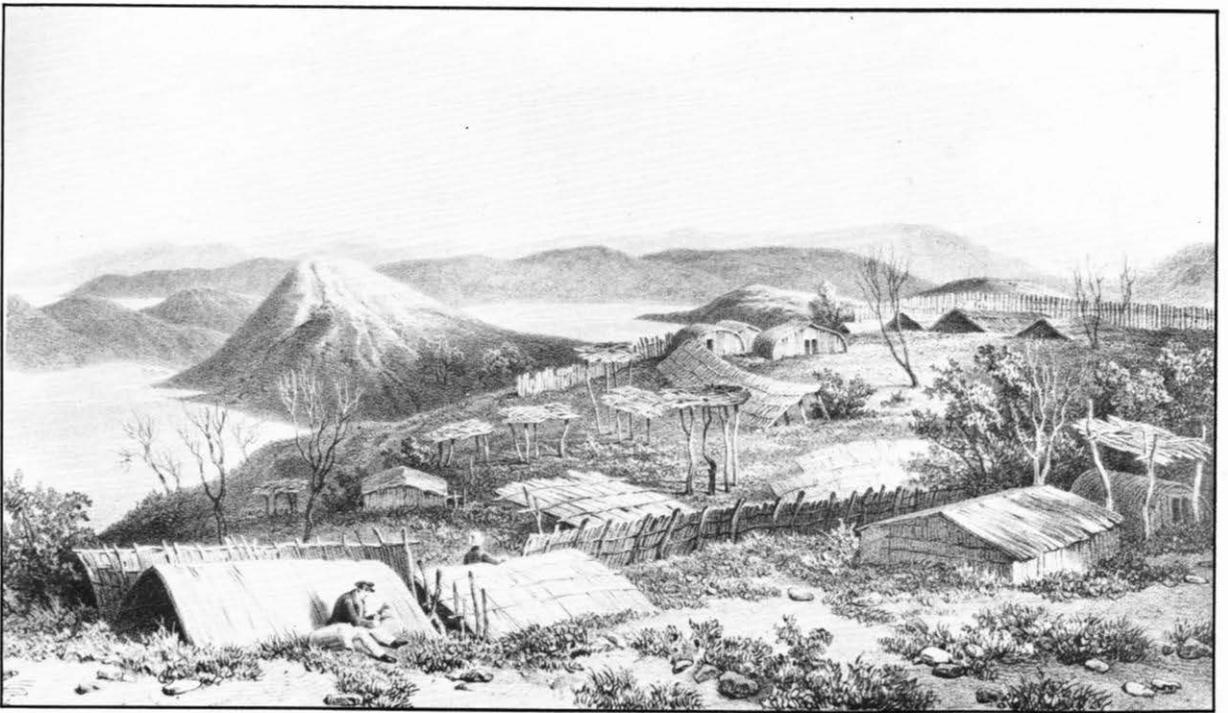
First of all there is the evidence of the great explorers. Captain James Cook was accompanied on his first voyage in 1769–70 in the *Endeavour* by Joseph Banks and by the draughtsman Sydney Parkinson; both Cook and Banks kept a journal in which they described the fortified settlements they visited, principally in Mercury Bay, the Bay of Islands, and Ship Cove in Queen Charlotte Sound. Each of their accounts of Wharetaewa *pa* at Mercury Bay contains details of the fortifications that are invaluable to the archaeologist.<sup>1</sup> The contemporary French explorers Surville (1770) and Marion du Fresne (1772) made short stays in the north in Doubtless Bay and the Bay of Islands. From the surviving members of the ill-fated du Fresne's expedition, Crozet and le Roux, there is a description of Paeroa *pa* on Moturua Island, together with a sketch plan (Fig. 40) showing the defences and outlining the position of the principal buildings in the interior.<sup>2</sup> The later French explorer Dumont d'Urville first visited New Zealand in 1824 in the *Coquille* under Duperrey but returned in command of the renamed vessel, the *Astrolabe*, in 1826–27 in order to continue charting the New Zealand coasts. His draughtsman, a skilled artist, Louis de Sainson, recorded in full detail the deserted *pa* at Kahouwera in the Bay of Islands (Fig. 2), as well as individual structures, like the house in

Tolaga Bay (Fig. 27), which are relevant to any Maori settlement studies.

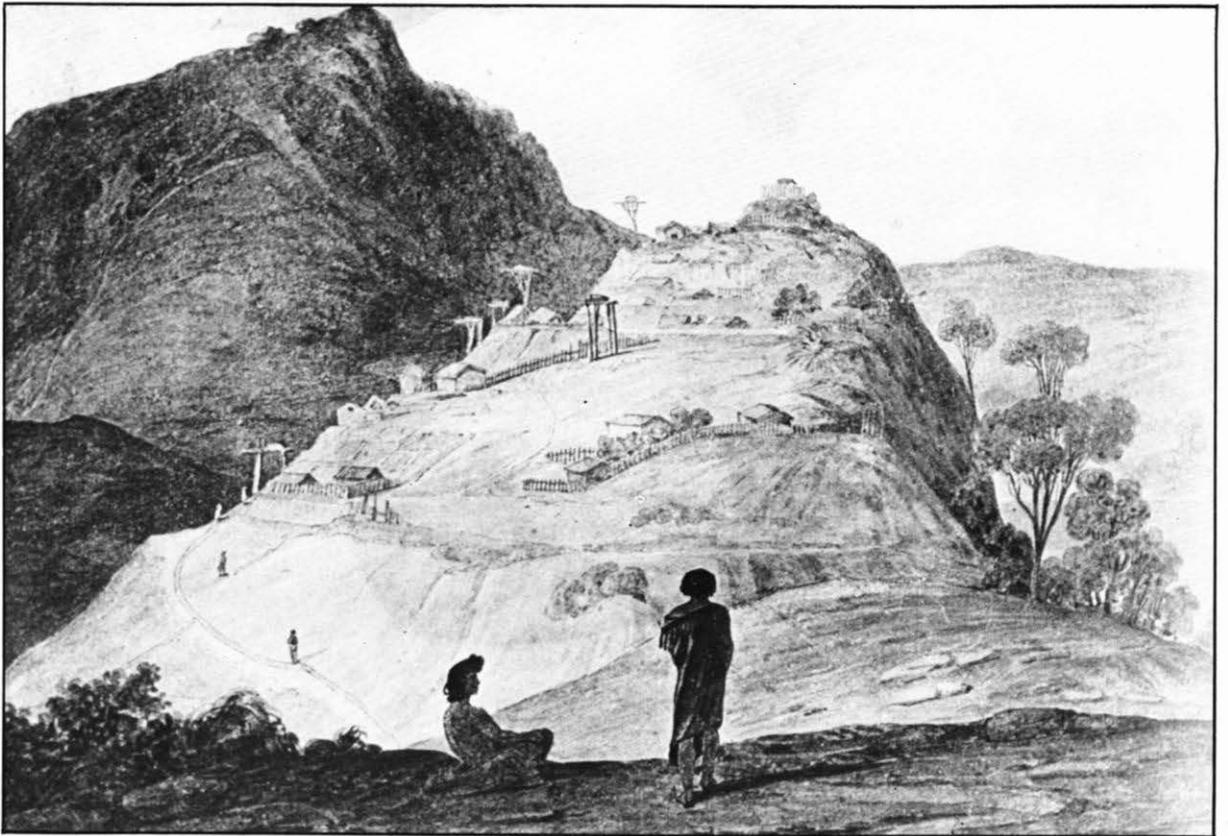
The next important source of information is the documentation provided by the early Anglican missionaries who were obliged to keep journals which were then sent home to their sponsors, the Church Missionary Society in London. Chief of these was Samuel Marsden who not only planned and established the first mission to the Bay of Islands in 1814–15, but made six other voyages from his Sydney base in New South Wales between 1816 and 1837. These involved inspection and exploration of new territory, ranging from the Bay of Islands to Thames and Kaipara.<sup>3</sup> On his first visit, he was accompanied by a lay companion, J.L. Nicholas, who also kept a journal.<sup>4</sup> There are interesting descriptions by both writers, which differ in minor details, of Chief 'Duaterra's' *pa* at Rangihoua, Kedah's *pa* at 'Wycaddee', and Hongi's *pa* near Waimate North, all in the Bay of Islands, as well as references to many others.

Maori fortifications were described in a generalised way by William Yate, a member of the Church Missionary Society from 1828–36, in his *Account of New Zealand*,<sup>5</sup> published in 1835, but by this time the great days of *pa* building were over in consequence of the use of the musket in the tribal wars. In the letters and journals of Archdeacon Henry Williams and his wife Marianne (1826–40) the *pa* is often synonymous with a settlement which is also described as a town or village, and it is not clear whether this is fortified.

There were other travellers who recorded their impressions of the *pa* in both words and pictures. Augustus Earle (1793–1838) was a considerable British artist who, in the course of his travels, visited the Hokianga and crossed to the Bay of Islands on foot in 1826–27. He drew the *pa* at Rangihoua (Fig. 3), Pakanae, and



2. The interior of the deserted *pa* at Kahouwera, Bay of Islands, drawn by Louis de Saison 1827.



3. Rangihoua *pa*, Bay of Islands, in 1827. Original watercolour by Augustus Earle.

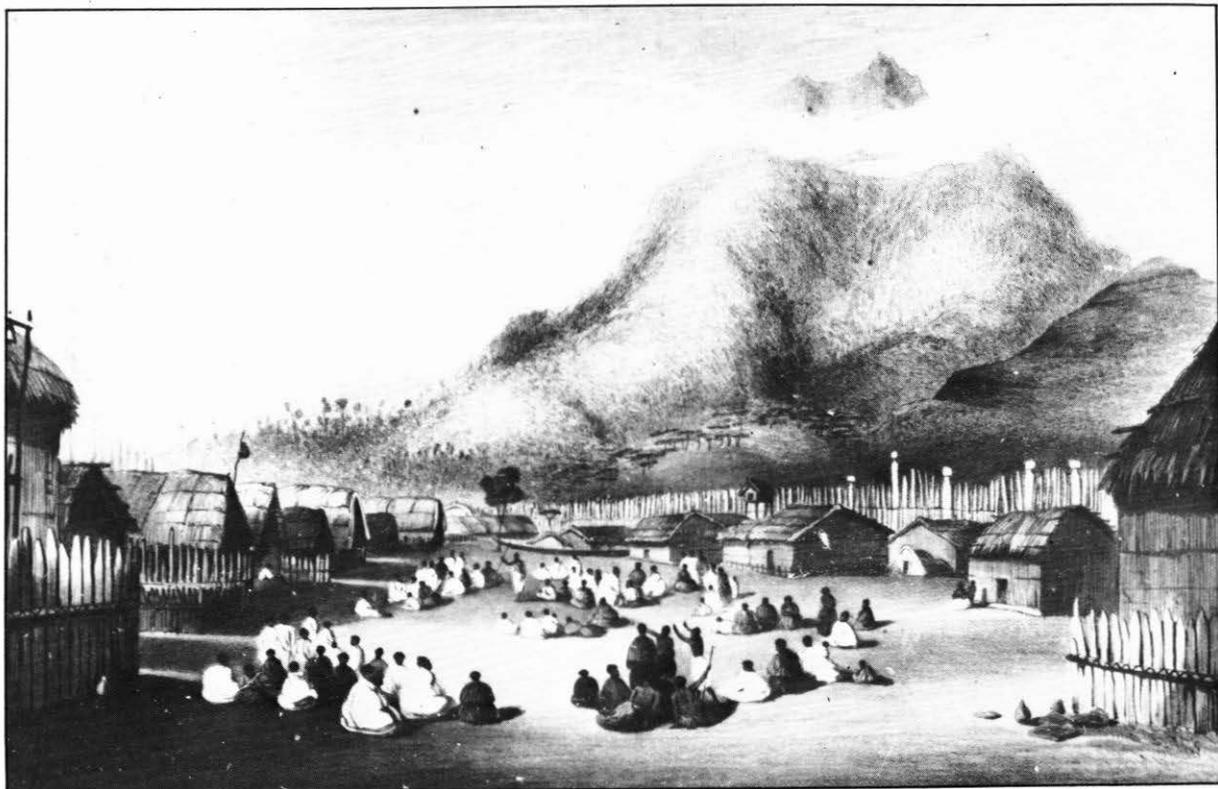
Motuiti Island,<sup>6</sup> as well as individual structures, and he described in his *Narrative of a Residence in New Zealand* the Maori way of life, as it was carried on side by side with that of the European settlers, as 'a happy mixture of savage and civilised life'. It is clear from his account that the fortified hilltop *pa* was used mainly as a refuge. For example Earle, on his return journey, found that Chief Patuone's village on the Hokianga had been deserted for one of the fortified *pa* because of a rumour of attack.<sup>7</sup> F.E. Maning, who was resident on the Hokianga, describes vividly how a *pa* was refurbished at the threat of an attack.<sup>8</sup> Another important artist and writer was G.F. Angas, an enterprising traveller who in 1843–45 penetrated the central region of the North Island where the prehistoric way of life had been little affected by contact with the Europeans. He travelled from Wellington along the west coast, up the Wanganui river and over wild country to Lake Taupo, reaching Auckland through the Waikato, and described his journey in *Savage Life and Scenes*, published in 1847. His main concern was to obtain portraits of the Maori chiefs, which form the bulk of his subsequent folio volume *The New Zealanders* (1847), but he also painted dramatic views of the *pa* at Motuopuhi, Lake Rotoaira, at Lake Taupo, and at Kaitote near Taupiri in the Waikato (Fig. 4),<sup>9</sup> as well as detailed studies of the palisades, carved houses and stores, and the burial places he saw within the *pa*. Despite the late date, his work provides much valuable information. There are, of course, many other travellers and early settlers who described the Maori way of life as they saw it in the early nineteenth century, and from these descriptions archaeological information about the fortifications can be gleaned.

Archaeologists, like historians, must be critical of the sources and realise their limitations. To begin with they are not comprehensive. The early explorers, James Cook and Joseph Banks, Surville, Marion du Fresne, and Dumont d'Urville were tied to the needs of their ships, and the fortifications they described and drew were limited to the coast and the off-shore islands. Because of the difficulties of seamanship on the west coast, the numerous *pa* in Taranaki and the Waikato went unobserved, and no European set foot on the great terraced *pa* of the Auckland isthmus until they were overgrown

by fern and scrub in the early 19th century.<sup>10</sup> The Bay of Islands and Thames, on the other hand, were frequently visited by members of the Church Missionary Society from the stations at Rangihoua, Paihia, Kerikeri and Waimate North, and encounters with Maori chiefs in their fortified centres are recorded in vivid detail in the Society's journals—by highly articulate and observant men. These are greatly to be preferred to other more generalised accounts of the country and its Maori inhabitants which tend to repeat second-hand information, or are based on a short stay or limited experience. From the precise narrative of the journals, a consistent picture emerges. There were numerous fortified settlements in all parts of the country the missionaries visited, separated by tracts of forest, but linked by paths known locally and by rivers on which travel by canoe was frequent. Each *pa* was well defended by ditch, rampart, and palisades, and the chief of the surrounding countryside could usually be found in residence. Sometimes the chief was away with his war band, when Marsden might find an 'officer in charge',<sup>11</sup> or he was living in another *pa*, leaving his wife behind, as in Te Haupa's *pa* on the Thames estuary.<sup>12</sup> There were numerous houses inside the *pa*, and both Marsden and Nicholas usually estimated the inhabitants in hundreds: on one occasion in the Kaipara region, Marsden says he counted forty people beating fern root for breakfast,<sup>13</sup> which has an air of verisimilitude. Both writers frequently describe the *pa* as a town and there is no doubt that in their minds these were the permanent centres of Maori population, although there were also open settlements, described as villages.

This picture of the populous *pa* is also apparent in contemporary artists' drawings, as in de Sainson's view of the deserted Kahouwera *pa* still full of houses, sheds, and stores in 1827 (Fig. 2). Earle's view of the *pa* on Motuiti Island in the Hokianga showed it crammed with houses and stores within a palisade,<sup>14</sup> whilst Angas drew the people assembled within the *pa* at Kaitote, Waikato, in the midst of the dwellings (Fig. 4). In the case of the artists a certain amount of romanticism must be discounted and their topographical exactitude is variable. The portraiture was idealised, for the eighteenth-century myth of the 'Noble Savage' persisted

despite the repeated proofs of cannibalism. Angas' pictures of the Maoris on the banks of the Waikato, or seated in Kaitote *pa* in their white cloaks<sup>15</sup> may look like a throng of angels but this does not affect the archaeological detail: when it comes to palisades, houses, or stores, these were drawn with a wealth of structural detail that is wholly convincing.



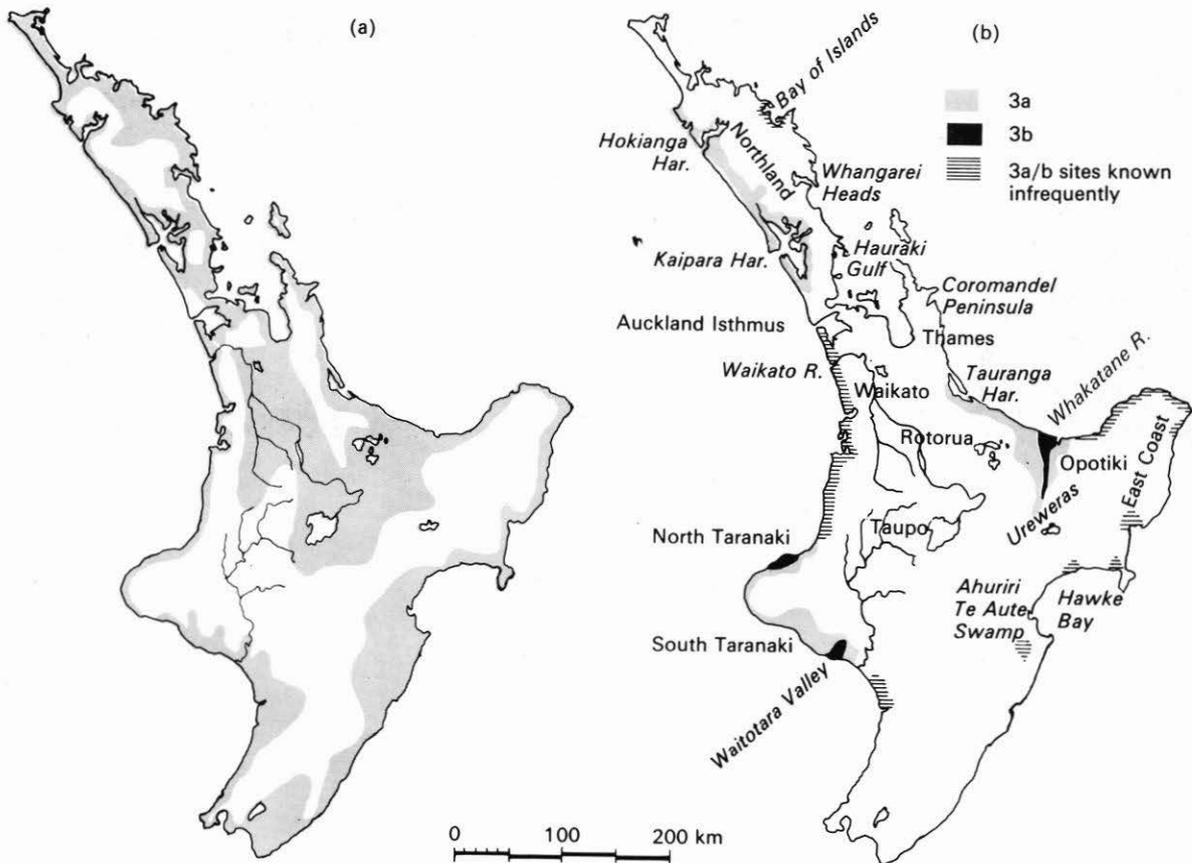
4. Kaitote *pa*, Taupiri, Waikato, drawn by G.F. Angas 1845.

## The archaeological evidence

### Field survey

I turn now to the archaeological sources, the monuments themselves, the *pa* that have survived the increasing dangers of recent 'developments', the subdivisions on the coast, the quarries for scoria on the volcanic cones, the farmer anxious to level and improve his pasture. No one knows how many there were or are, because unfortunately it is not yet the duty of the Lands and Survey Department to mark such sites on the maps; the most usual estimate for the North Island is four or five thousand, which is probably an underestimate. The general distribution (shaded in Fig. 5a) is predominantly coastal, with inland occupation in the Waikato and Lake Taupo regions.

The archaeologist has two means of approach, field survey and excavation. It is often thought that the work of an archaeologist consists solely of excavation—like Mortimer Wheeler, he or she is 'still digging'—but this is not so, particularly at this stage in New Zealand. Field survey, which consists of going out into the countryside and looking at as well as looking for monuments, and mapping and planning them, is the essential preliminary work. On the basis of such fieldwork an archaeologist studies the distribution of *pa* in a limited area, and is able to demonstrate their relationship to the environment and to the natural resources of the region. The layout and the character of the defences are studied, as well as their relation to the topography; any peculiarities which may enable a meaningful comparison to be made with other sites and areas are isolated. A plan of



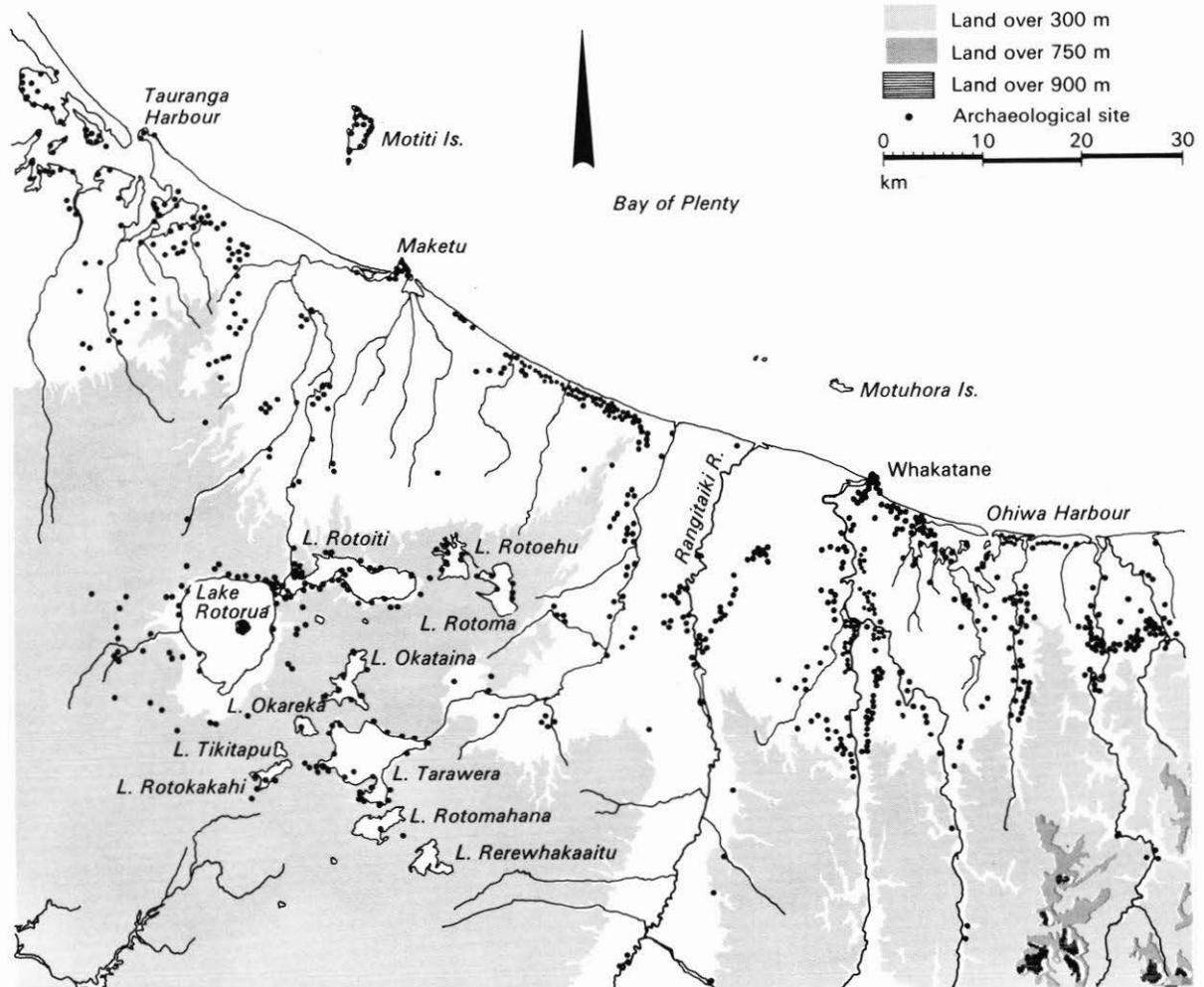
5. Distribution of *pa* in the North Island of New Zealand, (L. Groube, 1970).

- (a) Class 1, terraced; Class 2, with transverse ditch  
(b) Class 3, with lateral or ring-ditch

the *pa*'s interior (Figs. 14, 15, 37, 41) may reveal regional characteristics both in the layout and in individual structures, such as the raised-rim storage pits characteristic of the southeast coast; it enables some assessment to be made of the population, and of the relative importance of the site.

Patient and methodical field survey, such as that carried out by K.W. Moore for the New Zealand Archaeological Association's site recording scheme<sup>16</sup> in the Bay of Plenty during the last ten years, has yielded some remarkable results (Fig. 6). This was the territory of the Te Arawa and the Urewera tribes in the later prehistoric times, with a probable divide on the Rangitaiki river and the swamps. The coast was described by Cook on his first voyage as 'of

moderate height, a level flat country pretty clear of wood and full of plantations and villages. These villages are built on eminences near the sea and are fortified on the land side with a bank and ditch and palisaded all round, beside this some of them appear to have outworks.'<sup>17</sup> The outstanding feature of the distribution (Fig. 6) is the constant and close relationship between the occupation sites and the water; the sea, the harbours, the lakes, and the rivers. The remarkable coastal concentrations are slightly overweighted by the inclusion on the map of beach midden sites of all periods but there are many *pa* on the hills immediately behind the shore. Each of the inland lakes in the Rotorua area has fortifications on its margin, though their hinterland is practically blank. In



6. Distribution of recorded Maori sites in the Bay of Plenty.

the eastern half of the area, it is clear that the occupation was confined to the coastal belt and that the limited penetration of the mountain ranges was along the flanks of the valleys as in the Ruatoki area or the Waiotahi and Waioeka rivers. In general there are few *pa* above 300 metres and the majority are found below 150 metres; significantly the blank areas on the map are today areas of native bush or state forest. The explanation for the limited distribution is twofold: first the Maori population, coming in small numbers from eastern Polynesia by sea-going canoes, whether by accident or design, had only colonised the territory for a relatively short time, for about a thousand years at the time of European contact. Population pressure, although enough to make defended settlement necessary, was not sufficient to compel people to tackle the higher and more difficult wooded terrain inland, or, in other regions like the Waikato, to clear and settle all the extensive tracts of cultivable land, as Mr K. Gorbey has pointed out.<sup>18</sup> Secondly the Maori, lacking domestic animals other than a dog, relied for protein in his diet primarily on a variety of fish, together with eels and shellfish, supplemented by birds and some sea mammals. Most of these were obtainable from the coasts, especially the shallow harbours like Ohiwa and Tauranga in this area, but also from the lakes and the rivers. Recent writers such as Cassels,<sup>19</sup> the Shawcrosses and Simmons<sup>20</sup> have stressed that it is these economic factors that have determined the overall settlement pattern and this is plainly the case in the Bay of Plenty. A *pa* was built within reach of a good source of food supply.

Fern root and *kumara* (sweet potato) were the other staple items of consumption, and suitable soils for their cultivation were another important factor governing the distribution. In North Taranaki Dr A. Buist's pioneer study<sup>21</sup> of 104 *pa* demonstrated that the majority were on the coastal lowlands ('flat-land'), on the soils best suited to cultivation. Here too the riverine pattern of settlement is marked and penetration of the hill country is limited to some five kilometres from the coast and to the edge of the tableland of 250 metres.

One final problem arises from the Bay of Plenty distribution pattern, and that is density. In many areas the *pa* are very close together, often clustering within half a kilometre,

sometimes only a few hundred metres apart. Coexistence seems unlikely. For example, two small *pa* near Ruatoki South are built on eminences about half a kilometre apart and defended on one side by a steep wooded gorge: the intervening flat has surface indications of habitation—pits, terraces, and platforms—and of cultivation in the form of low banks and drainage channels defining garden plots. It seems unlikely that two *pa* of similar size and design were necessary for the population of this cultivated area, but without excavation it is impossible to say which is the earlier. In other cases it is known that a *pa* went out of use, having been declared *tapu*, when the site was used for burial of a member of the ruling class.<sup>22</sup> The large Totara *pa* on Thames became *tapu* after a battle with the Ngapuhi in 1821 and in this case a small *pa* was built to the same design on the adjacent spur. This is a good example of replacement which was probably a widespread custom. When there was a major tribal movement into an area, as traditionally the Ngati Kahungunu moved into Hawke's Bay, or the Ngati Whatua into the Auckland area, new *pa* are likely to have been constructed or old ones refortified.

Field work also enables the archaeologist to distinguish the larger and more elaborate sites that are likely to be important tribal centres (the *pa* of a *hapu*) from smaller fortifications that could be built by an extended family group (*whanau*). A recent survey of the *pa* in the area of Kawakawa Bay, Clevedon, showed one such major site on Pawhetau Point and ten smaller constructions extending over the adjoining twenty kilometres of coast, from the Wairoa estuary to Orere Point.<sup>23</sup>

### The evidence of excavation

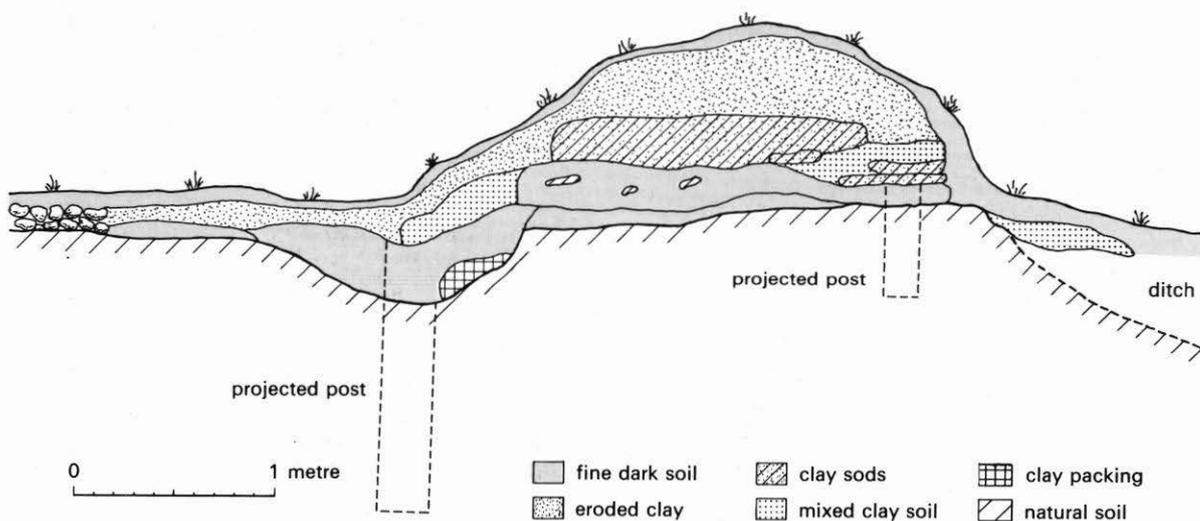
I turn now to consider excavation and to discuss its contribution to the understanding of the *pa*. Adopting a medical metaphor, if field survey can be compared to the work of a general practitioner, then excavation obviously is that of a surgeon: the difference is that the archaeologists' operations are destructive and the damage cannot be repaired. It is a sobering thought. Like matrimony, excavation is 'not to be taken in hand lightly or wantonly, but soberly, wisely and discreetly'. For the

participants and especially for the director, it is not a holiday pastime.

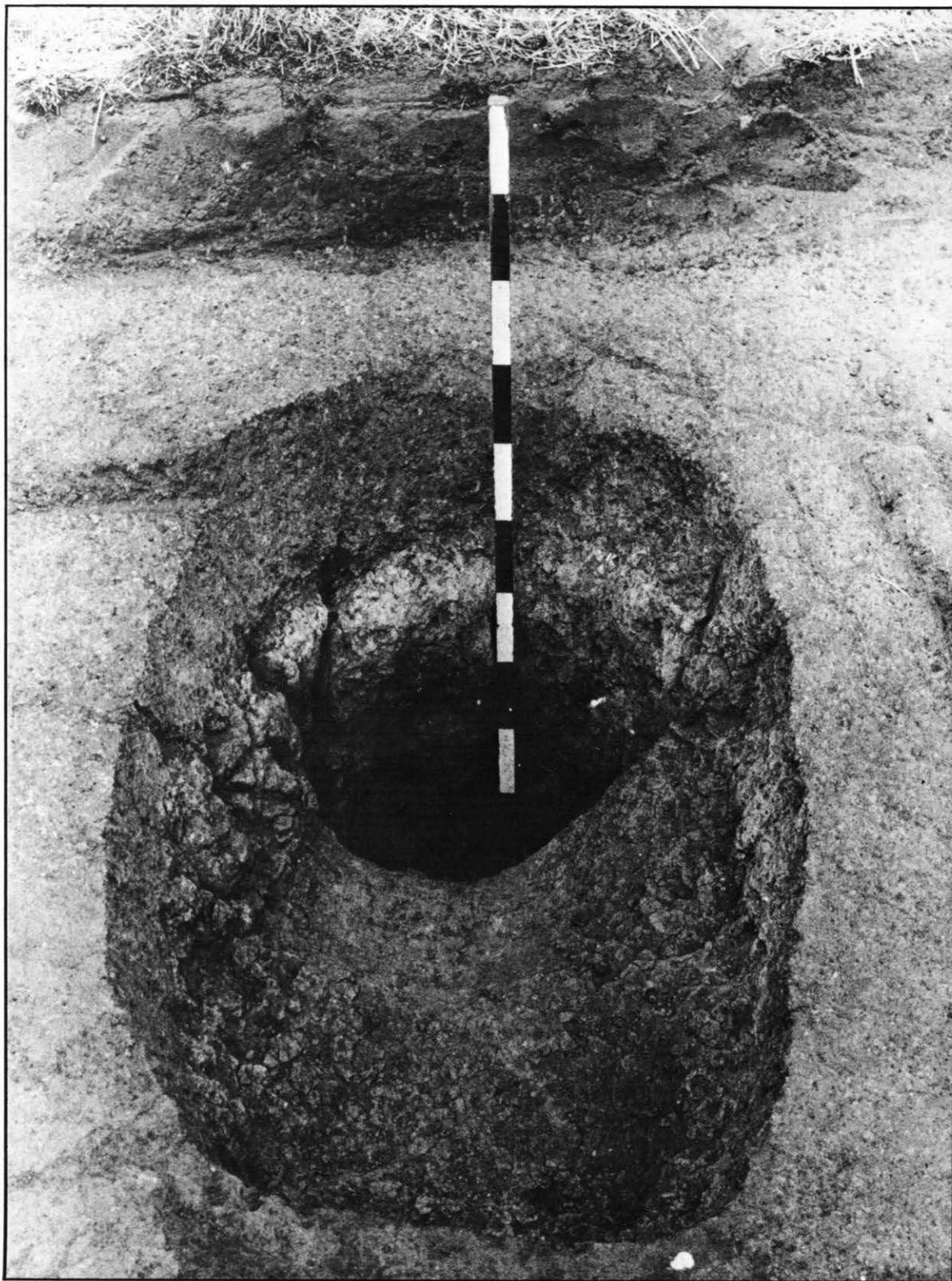
Each kind of excavation has its own objectives but in the case of the *pa*, the work is directed to finding structures rather than artefacts. The aim is to find out the history of the site by establishing a structural sequence and to date that sequence by means of artefacts found in stratified association. The other principal objective is to ascertain the activities of the inhabitants through a detailed study of the remains they left behind. Archaeological work in New Zealand is handicapped because the Maori people neither made nor used pottery, which in form and decoration is subject to frequent change and so provides a chronological index. Fortunately in recent years radiocarbon analysis of wood and bone has been of great assistance in providing dates, though subject to variations of at least 60 to 180 years ( $\pm 30-90$ ).<sup>24</sup>

Some of these excavation procedures can be illustrated with reference to *pa* defences. In appearance a bank and ditch may appear featureless, but a cutting across them at right-angles will reveal the mode of construction, showing how the turf and top soil dug from the ditch was first heaped up on the old ground surface and the soil from the deeper levels of the ditch subsequently piled on top (Fig. 7). Any artefact found underneath the bank must predate the rampart and provides a *terminus post quem* for the fortifications. Further careful

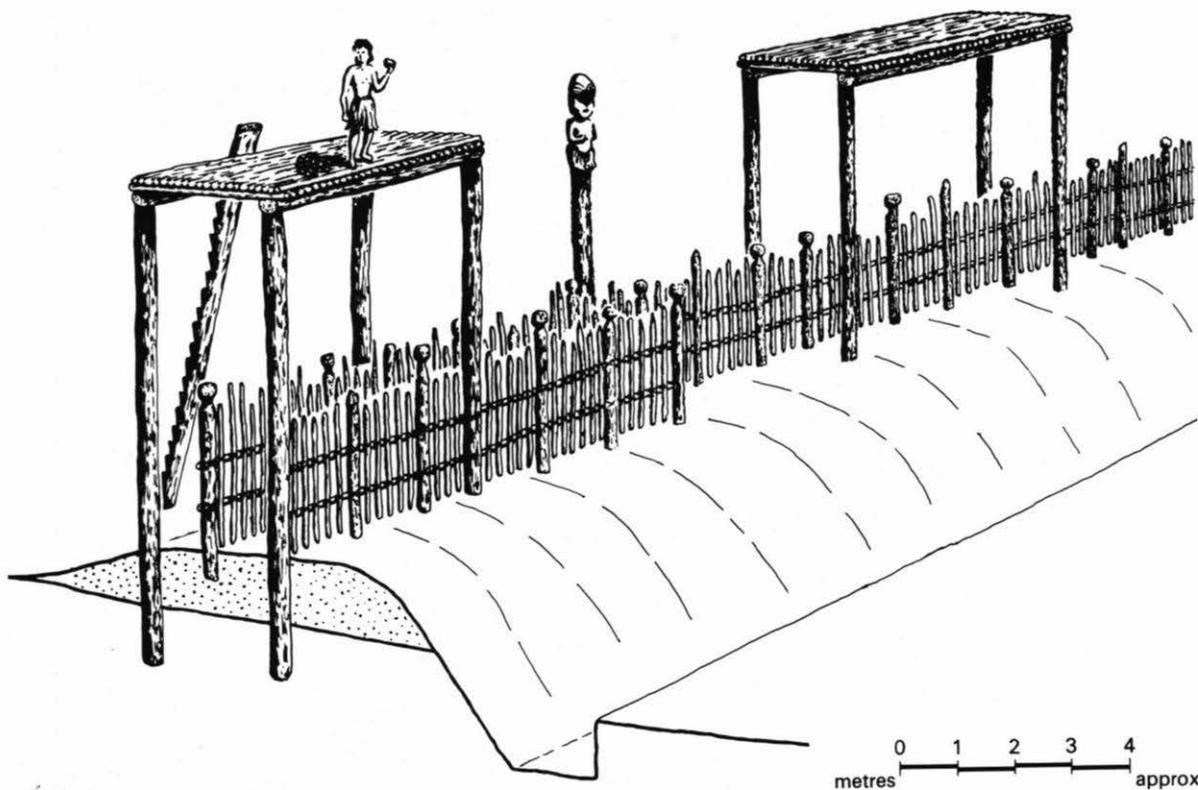
clearance beneath the edges of the rampart may uncover discoloured patches with a loose crumbly texture in the subsoil; these indicate the post holes in which the timber uprights of a palisade were erected. The Maori method as shown at Te Awanga *pa*, Hawke's Bay,<sup>25</sup> was to dig a large oval pit about a metre deep with one sloping side forming a ramp down which the post could be slid and then raised and packed in the upright position against the vertical face of the deeper end of the pit (Fig. 8). Here and at Otakanini, South Kaipara, wood from the butt of the post had survived at the bottom of the hole and provided material for radiocarbon dates. Other defensive structures of timber identified by excavation were fighting stages over the rampart. These were described by Cook and Banks at the *pa* at Mercury Bay in 1769<sup>26</sup> and also by members of the du Fresne expedition at Paeroa *pa* in the Bay of Islands in 1772 of which a sketch plan was made (Fig. 40). However until Bellwood's excavation at Otakanini in 1968-9<sup>27</sup> they were archaeologically unknown: a second example has recently been found at Te Awanga. According to the post holes found, the stage consisted of a narrow platform about two metres wide supported according to its length on four, six, or eight posts in two rows set one to one and a half metres deep in the ground, and therefore probably between three and five metres high. At Te Awanga a third row of



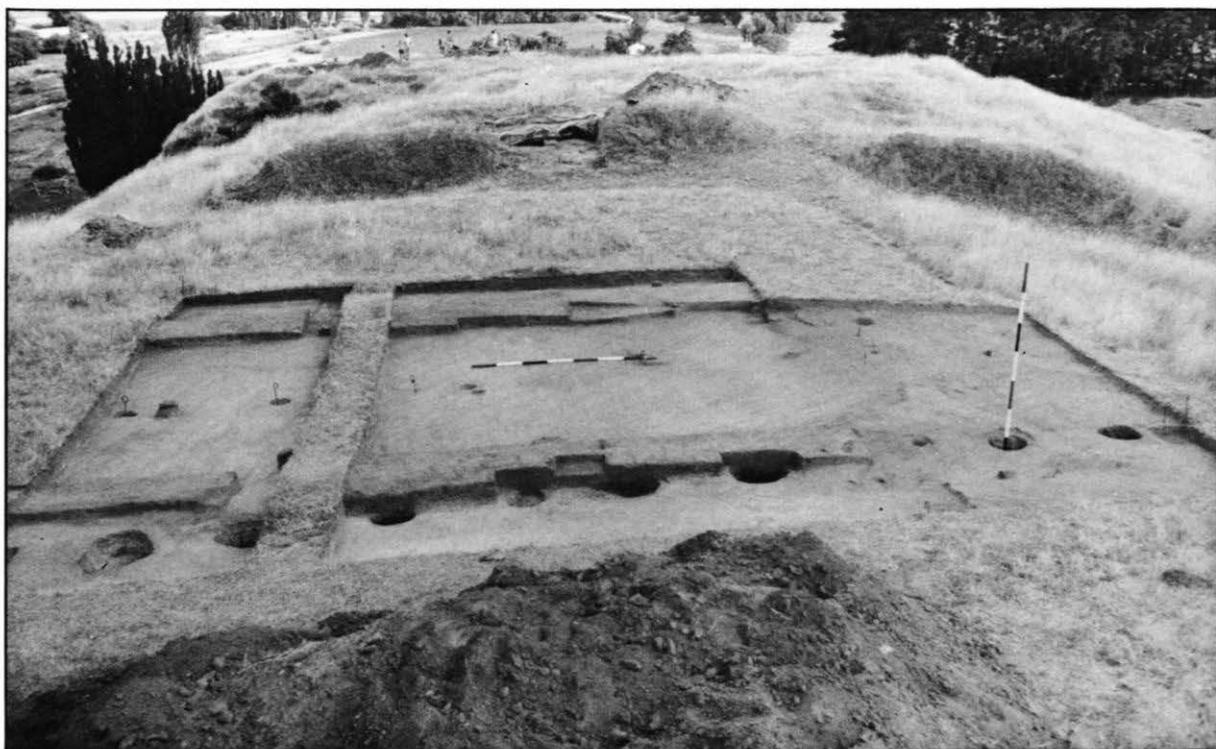
7. Tiromoana *pa*, Te Awanga, Hawke's Bay. Section through the inner rampart.



8. Tiromoana *pa*, Te Awanga, Hawke's Bay.  
Post hole for the palisade. Scale unit 20 cm.



9. Otakanini *pa*, South Kaipara. Reconstruction of the fighting stages, period 3.



10. Tiromoana *pa*, Te Awanga, Hawke's Bay. Post holes of an early palisade under a house bank.

posts in smaller holes behind the rampart probably supported a lower tier which could be used for mounting to the higher stage. At Otakanini there were two stages a short distance apart, with a single post, perhaps a carved *tiki*, between them, which had replaced a longer single stage of earlier date (Fig. 9). Archaeological investigations have thus confirmed and extended the literary and pictorial evidence.

The way in which an archaeological sequence is built up and dated is often rather involved. At Otakanini the two periods of post holes for the defences could be distinguished because the earlier examples had been backfilled and hard-packed with clean material from a newly dug ditch, whereas those of the later period were filled with the soft dark soil which accumulates when a post is allowed to rot *in situ*. The discovery of two perfect stone adzes (Type 2B) as a dedicatory offering in one of the later palisade holes, together with a radiocarbon date of A.D. 1476  $\pm$  49 from the post butt, provide fixed points culturally and chronologically for the sequence.<sup>28</sup>

A sequence can also be established when structures are found superimposed or cut into each other. At Te Awanga the post holes of an early line of palisade across the spur were found beneath a low bank of soil heaped as a windbreak round the edge of a long house: clearly the palisade predated the house (Fig. 10). No artefacts were recovered from the palisade holes but objects from the occupation layers inside the house together with wood from its post holes have provided a terminal date for this particular sequence in the early nineteenth century. It is by methods such as these that archaeologists have endeavoured to ascertain the development of fortification in New Zealand.

#### Notes

(For full references, see Bibliography, p. 66)

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2. Kelly, L.G. *Marion du Fresne at the Bay of Islands*, p. 70.

3. Marsden, S. *Letters and Journals*, edited J.R. Elder 1932.

4. Nicholas, J.L. *Narrative of a voyage to New Zealand* 1817, 2 vols. Compare accounts of Waimate *pa*, Marsden p. 97, Nicholas I, p. 335-41.

5. Yate, W. *Account of New Zealand* 1835.

6. Murray-Oliver, A. *Augustus Earle in New Zealand*, plates 2, 15, 33.

7. Earle, A. *Narrative*, p. 173.

8. Maning, F.E. *Old New Zealand*, p. 40.

9. Angas, G.F. *The New Zealanders*, plates 8, 15, 18, 32.

10. For example Marsden on Mount Wellington in 1820, *Letters and Journals* p. 314; J. Logan Campbell on Mount Hobson in 1840, *Poenamu* p. 109.

11. Marsden, S. *Letters and Journals*, p. 302. Pataua river *pa*.

12. *idem* p. 106.

13. *idem* p. 318. Kopua *pa*.

14. Murray-Oliver, A. Plate 15.

15. Angas, G.F. *The New Zealanders*, plate 15.

16. Daniels, J.R.S. *Site Recording Handbook* 1970 gives full particulars of the scheme. This is likely to be transferred to the Historic Places Trust in the near future.

17. Cook, James, *Journals I*, p. 191.

18. Gorbey, K. *Pa* distribution, M.A. Thesis, Auckland University.

19. Cassels, R. *J.P.S.* 81 (1972), p. 196.

20. Simmons, D. *J.P.S.* 78 (1969), p. 3.

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22. Marsden, S. *Letters and Journals*, p. 263.

Angas, G.F. *Savage Life and Scenes*, pp. 87-8.

23. Fox, A. *Records Auckland Institute and Museum* 1974, p. 15, fig. 1.

24. For the problems of applying radiocarbon dates to New Zealand prehistory see F.W. Shawcross, 'Archaeology with a short time scale'. *World Archaeology* 1 (1970), p. 184, and B. McCulloch, *N.Z.A.A. Newsletter* 16 (1973), p. 128.

25. Fox, A. *N.Z.A.A. Newsletter* 17 (1974), p. 163.

26. Cook, James, *Journals I*, p. 199. Banks, J. *Endeavour Journal I*, p. 433.

27. Bellwood, P.S. *P.P.S.* 37 (1971), p. 68, fig. 4.

28. *idem* p. 69.

# Chapter two

## The *pa* and its defences

### Varieties of *pa*

It was on the basis of fieldwork that the classification of *pa* in New Zealand was set out by Les Groube in 1969<sup>1</sup> following on the earlier work of Elsdon Best in the 1920s<sup>2</sup> and Jack Golson in 1957.<sup>3</sup> *Pa* had been classified previously by the type of site they occupied, a headland, ridge, swamp, or flatland; Groube instead concentrated on the character of the defences. His scheme was as follows:

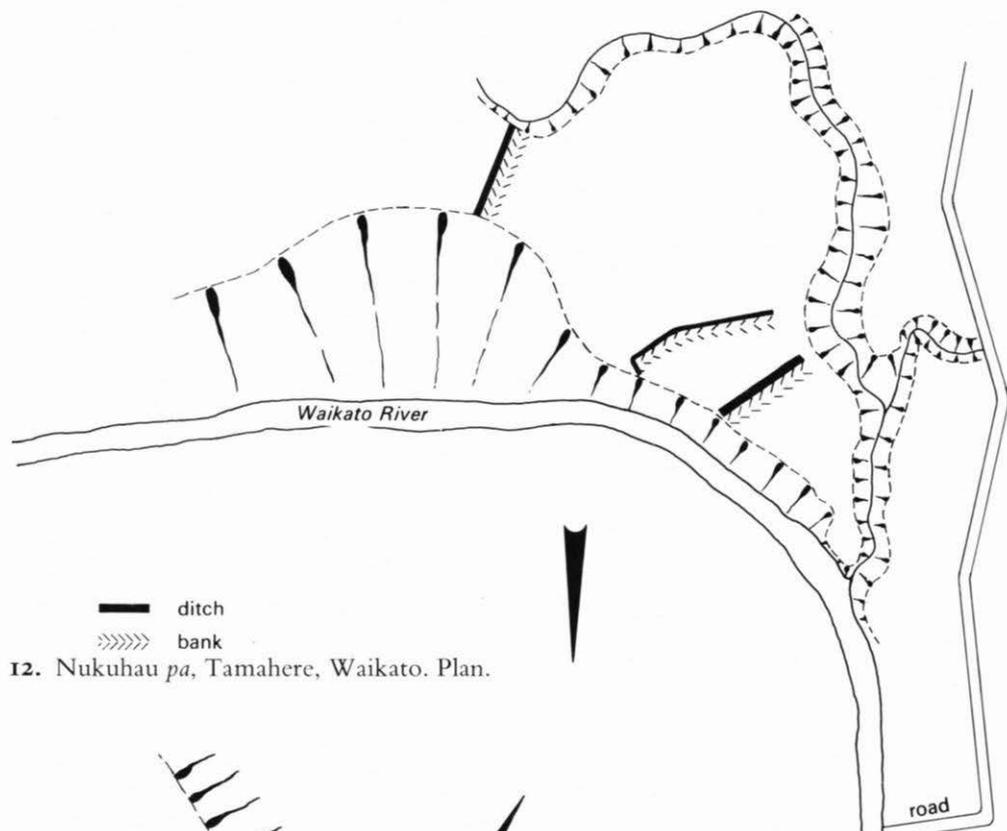
- Class I Terraced sites
- Class II Sites defended by transverse ditches and banks
- Class III Sites defended by transverse and lateral ditches and banks, including sites wholly enclosed by a 'ring-ditch'.

The scheme still remains workable, but each category requires some amplification in the light of recent observations, and the addition of another category, Class IV, for the swamp *pa*, defended only by palisades.

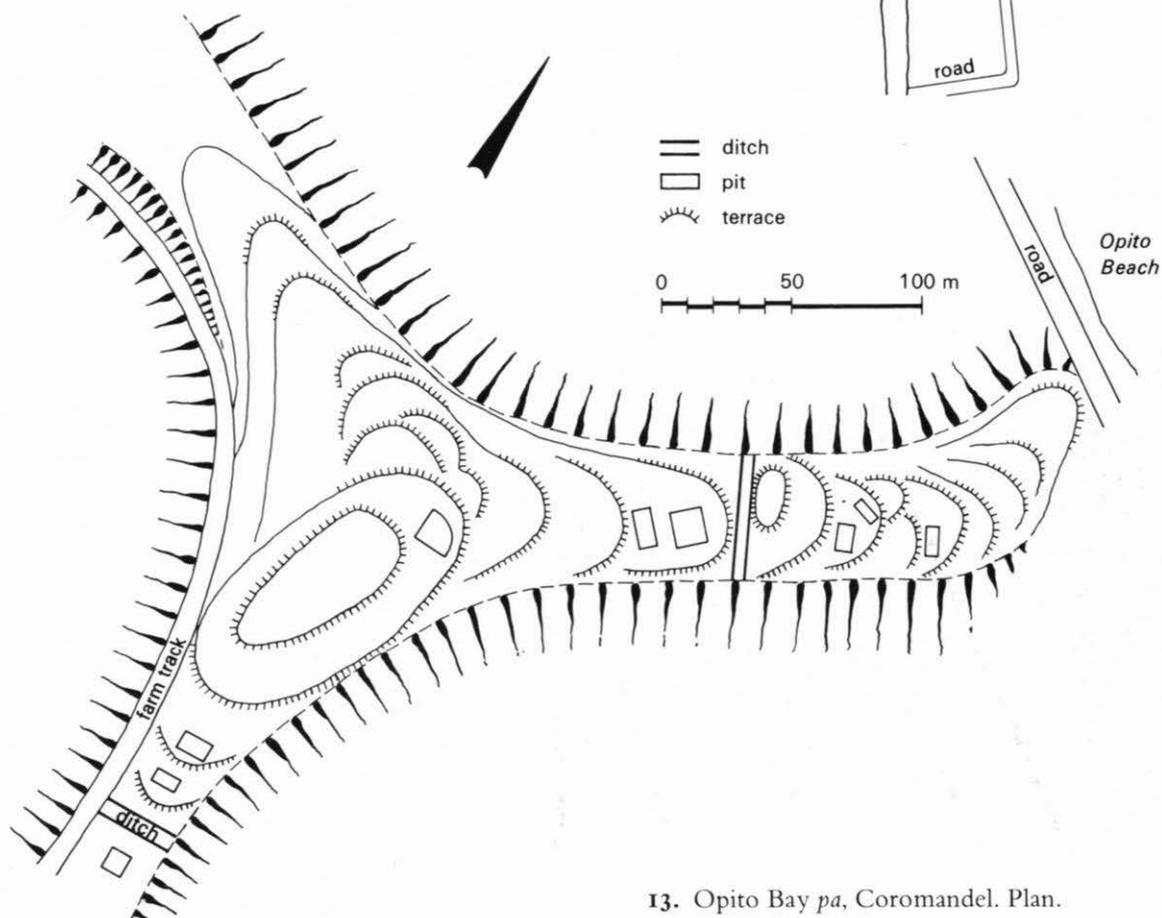
The most common type of *pa* in the North Island is Class II, characterised by transverse ditches: as Groube has shown, it is found in all districts (Fig. 5a). The sites favoured are coastal headlands (Fig. 11) or the end of an inland spur, where natural features can be relied on for lateral defences. Good examples can be seen on the rocky headland at Cooper's Beach, Mangonui, or at Nukuhau on the Waikato river above Hamilton, where one end of the defences rests on the river escarpment, the other on the gorge of a tributary stream (Fig. 12).



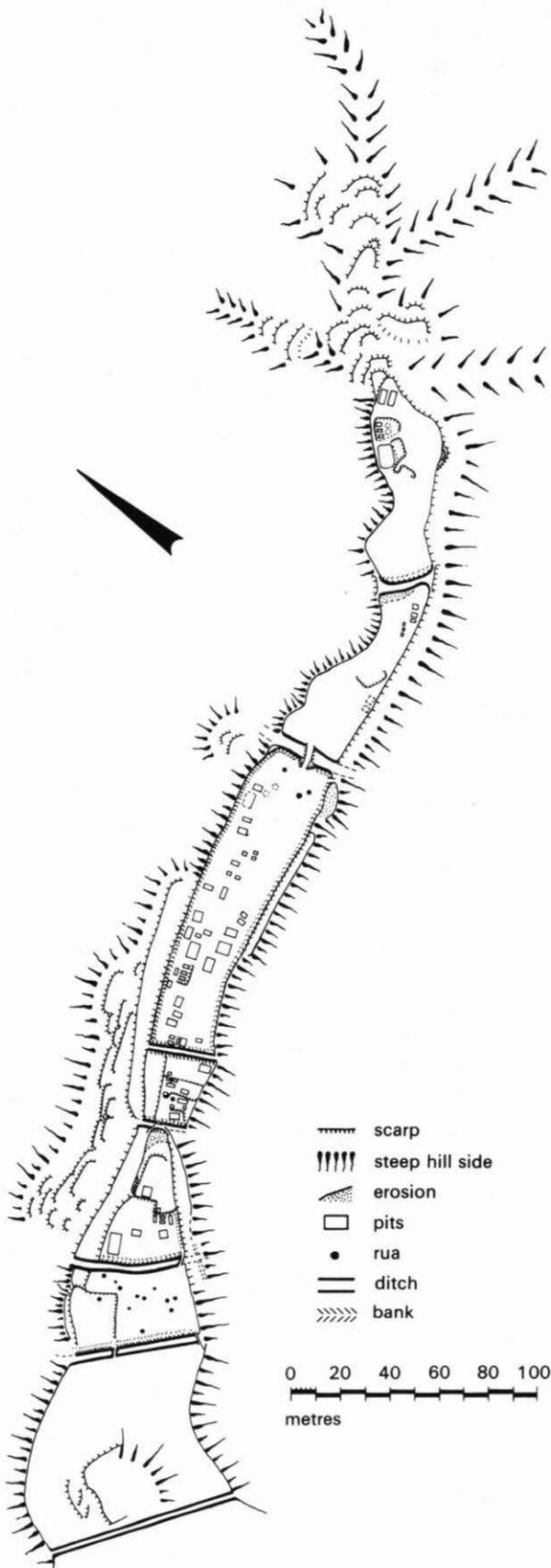
II. Pawhetau Point *pa*, Clevedon, South Auckland. View from Kawakawa Bay, showing the ditches on the skyline.



12. Nukuhau pa, Tamahere, Waikato. Plan.



13. Opito Bay pa, Coromandel. Plan.

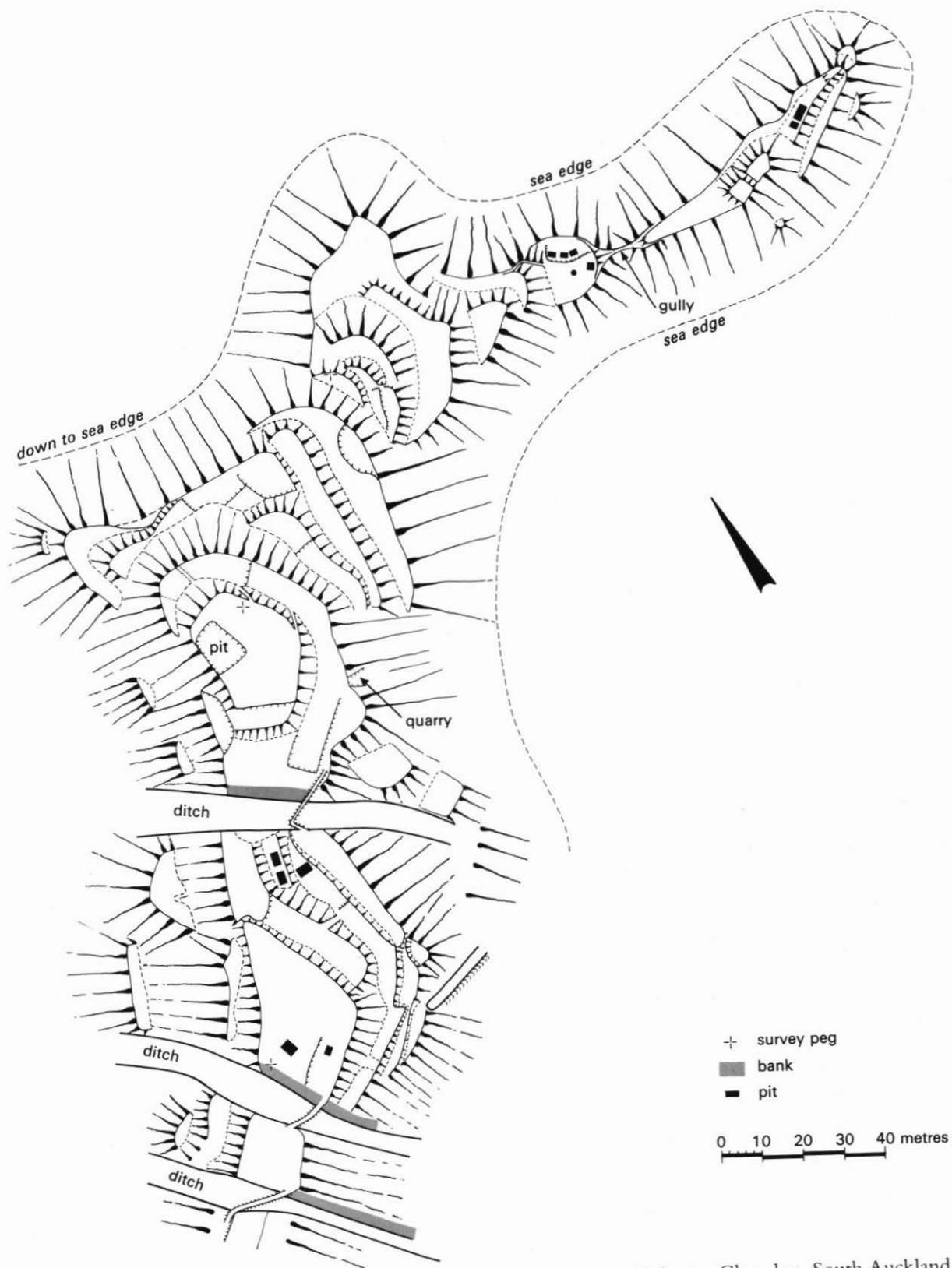


14. Pouto Point *pa*, North Kaipara. Plan.

Another typical situation is a high point on a ridge where it was often necessary to provide defence against attack from both directions along the ridge, as at Pouto Point in North Kaipara (Fig. 14), or Okoki *pa* (now the site of the Buck Memorial) in Taranaki.<sup>4</sup> Extra transverse ditches were sometimes needed to cut off subsidiary spurs branching from the main ridge as at Opito Beach, Coromandel (Fig. 13),<sup>5</sup> or near Whangaruru West in Northland. It is noticeable that when more than one line of defence was provided, often the ditches are spaced far apart, dividing the *pa* into separate enclosures, as at Pawhetau Point, Kawakawa Bay (Fig. 15):<sup>6</sup> the system provided for a succession of defensible positions, culminating in the innermost enclosure, usually an elevated platform scarped on the highest point.

The consistent alignment of the defences reflects the expected frontal mode of attack: this was confined to the level ground on the crest of the ridge or promontory where the war party (*taua*) had room for the preliminary martial display, including the war dance (*haka*), or for the single combat that often preceded a general engagement.<sup>7</sup> F.E. Maning vividly described such behaviour in front of a *pa* with three ditches and palisades on the Hokianga in the 1830s, and although the rival forces were armed with muskets and did not actually engage, the preliminaries were faithfully carried out.<sup>8</sup> It is clear that Maori warfare, like medieval combat, was governed by conventions. The risk of storming parties up the steep slopes at the sides of this type of *pa* could usually be disregarded, although at Te Awanga, Hawke's Bay, excavations have shown there was a lateral palisade<sup>9</sup> (Fig. 16).

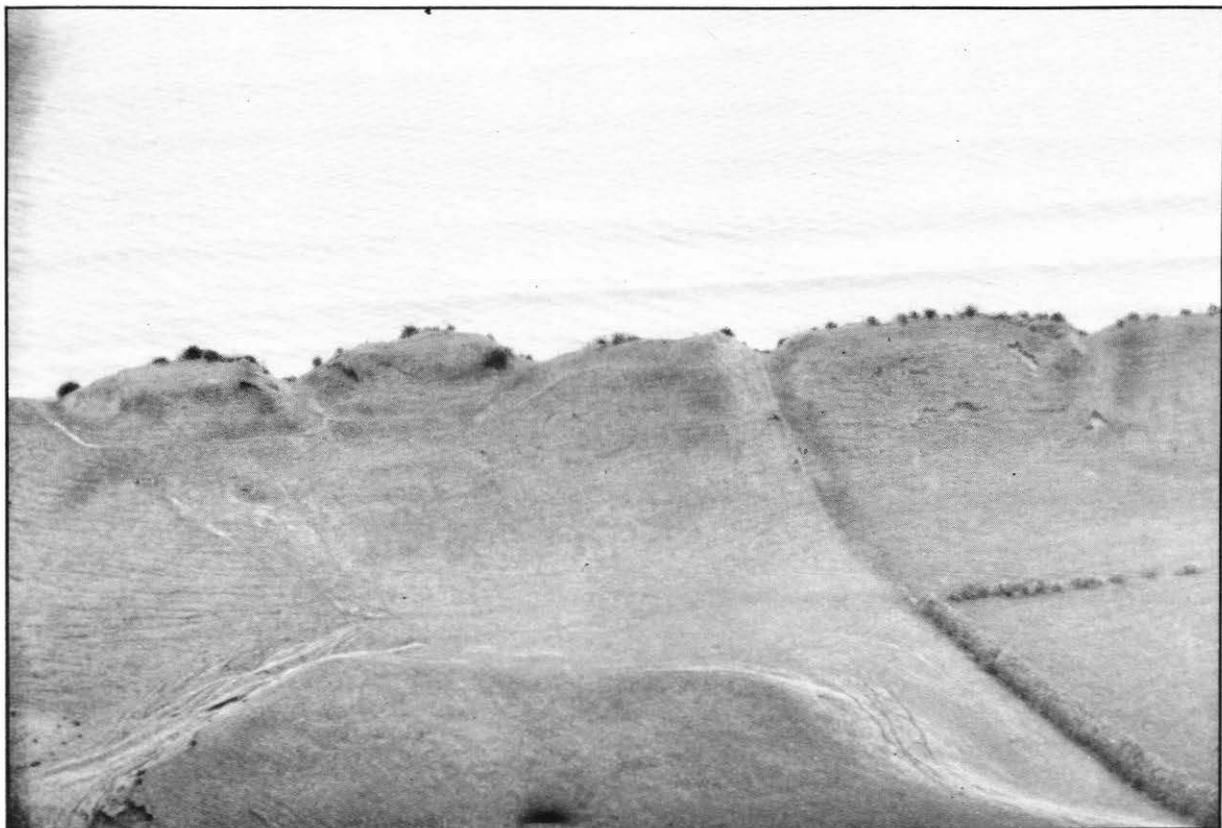
In *pa* of Class III the ditch and bank or scarp forms a continuous defended perimeter (the ring-ditch *pa*) or, more commonly, is intermitted on one side when there is a secure natural defence. The usual situation is a knoll or ridge but flat land could also be utilised where an all-round defence was provided. The shape of the *pa* tends to be sub-rectangular, often with a conspicuous summit platform, artificially levelled and scarped. The form offers better protection against an enveloping attack, but once the perimeter was breached, a general *melée* would ensue and there was no second chance for the defenders to reorganise or to



15. Pawhetau Point pa, Clevedon, South Auckland.  
Plan.



16. Tiromoana *pa*, Te Awanga, Hawke's Bay. View of the inner zone, showing rampart, holes for lateral palisade, and storage pits.

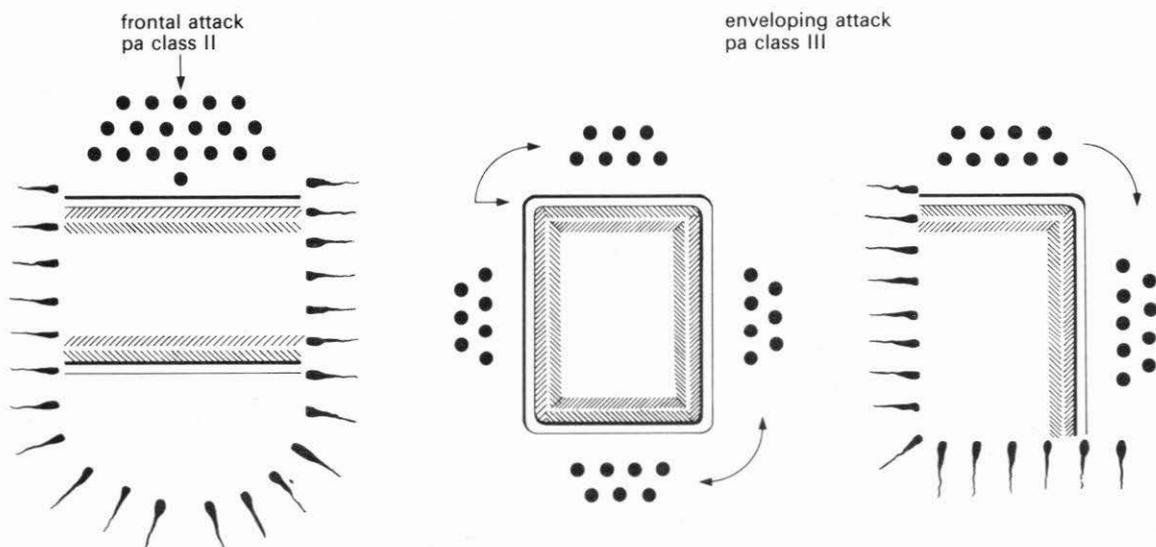


17. Ruataki *pa*, North Taranaki. Air photo showing the five enclosures with platforms.

escape. When more than one line of earthwork was constructed, these usually took the form of concentric enclosures designed for successive defence, as at the dramatic Ngahuha *pa* near Pakaraka in the Ngapuhi territory. In other examples at Ruataki *pa* and others in Taranaki,<sup>10</sup> the ditches demarcate as many as five enclosures of platform type, side by side on the cliff edge (Fig. 17): each of these would need to be attacked and subdued piecemeal. There will be more to say about the sociological implications of these layouts in the next chapter (p. 45). Alternatively in a few instances, principally in the Bay of Plenty and Taranaki, the banks and ditches are close together, making a formidable double defence (Fig. 25). The interior is usually levelled but in some examples<sup>11</sup> it is terraced; Groube considered these merited a subdivision, Class IIIB, but this seems unnecessary. For the most part interior terraces were constructed for living sites or stores, not for defence, and in some places, as at Kauri Point, it has been shown that the ditches and banks were superimposed on an open terraced settlement.<sup>12</sup>

*Pa* of Class III are limited in distribution; as Groube's map shows (Fig. 5b) they occur mainly on the west coast. They are the predominant type in Taranaki, where the earthworks are often spectacular, and in some parts of the Bay of Plenty, but in both areas Class II *pa* are found as well. The reasons for these variations have not been fully discussed. It is axiomatic that the

mode of defence is the response to the methods of attack (as for example in our time the air-raid shelter was to the bomb) so the differences in *pa* construction should be related to the tactics employed by the opposing force. In this case Class II forts were designed to resist an attack in depth on a limited front. Class III forts were designed to ward off an enveloping attack by enemy forces capable of deployment on more than one front (Fig. 18). These alternatives could have been used by the small war band or by the large *hapu* forces and are accordingly reflected in the design of both small and large *pa*. It can be deduced from the distribution that the enveloping attack was prevalent in Taranaki and perhaps was developed there under sophisticated leadership, whereas on the east coast, apart from the Bay of Plenty, frontal attack with its conventional preliminaries was maintained. The occurrence of the Class III ring-ditch *pa* along the west coast and in the Waikato does not necessarily imply a large-scale migration from Northland such as Simmons and Groube have postulated:<sup>13</sup> ideas can travel rapidly by word of mouth and a new device in *pa* building can be imitated on the information obtained from raiding or trading parties. It must also be admitted that the extension of the earthwork defences to the side of a *pa*, where there previously was a palisade, is a logical step that could have been taken independently in different tribal areas.



18. Methods of attack on different types of *pa*.

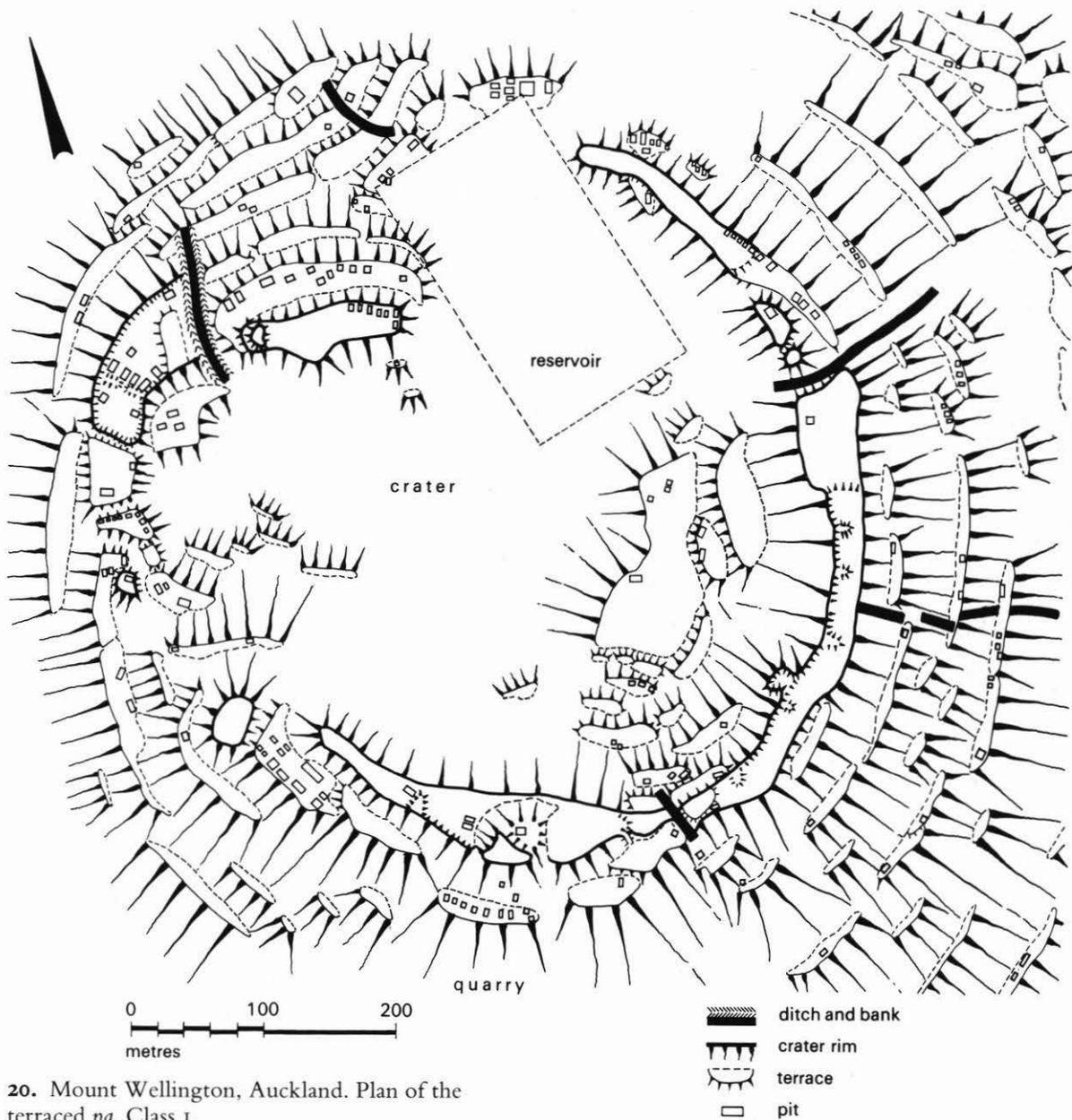


19. One Tree Hill, Auckland. Terraced *pa*, class I, on a volcanic crater.

Consideration of the Class I terraced *pa* (Fig. 19) had been deferred because of its anomalies. When is a *pa* not a *pa*? If the answer is when it has no ditches, major sites like Mount Eden in Auckland or Otatara, Hawke's Bay, and many small terraced sites will be excluded. Such sites, however, differ from open settlements by their situation, usually an isolated steep hill which has been cut back in a series of steps like the Sugar Loaf near Omaha Wharf, North Auckland. Without excavation it is difficult to know which of the terraces were intended as a stance for the defenders behind or above a palisade (Fig. 24), and which were built as flats for living places or stores. On the volcanic crater west of Ohaeawai, Bay of Islands, stone fire-places on the lower terraces indicate the former existence of habitations. Excavation on Mount Wellington, Auckland, in 1971–2 showed that there was no palisade on some of the lower terraces;<sup>14</sup> presumably the steep scarps would be a sufficient check to the attackers.

Many terraced *pa*, however, have a defended

zone. On Pouerua, the conspicuous volcanic cone near Pakaraka, Bay of Islands, the external slopes are terraced but the rim of the crater has been divided up into defensible blocks by transverse ditches.<sup>15</sup> The plan in fact is like that of a ridge *pa* of Class I, which has been curled up and compressed into the circular form of the crater. Attackers would first have to climb the terraced slopes packed with houses and store pits, then re-form on the summit and fight their way along the rim through successive lines of defence to the strong point on the highest part of the crater. In Auckland there are similar defended zones on Mount Wellington (Figs. 20, 21), Mount St John, Mount Hobson, and One Tree Hill; excavation is needed to show whether the small-scale ditches and banks on these craters are primary features or additions to palisaded scarps. At Otatara, the large *pa* near Napier, there is a ditch dug across the lower slopes of the hill in a position that offers little protection to the rows of terraces above, whilst the good defensive positions on the narrow ridge summit have no

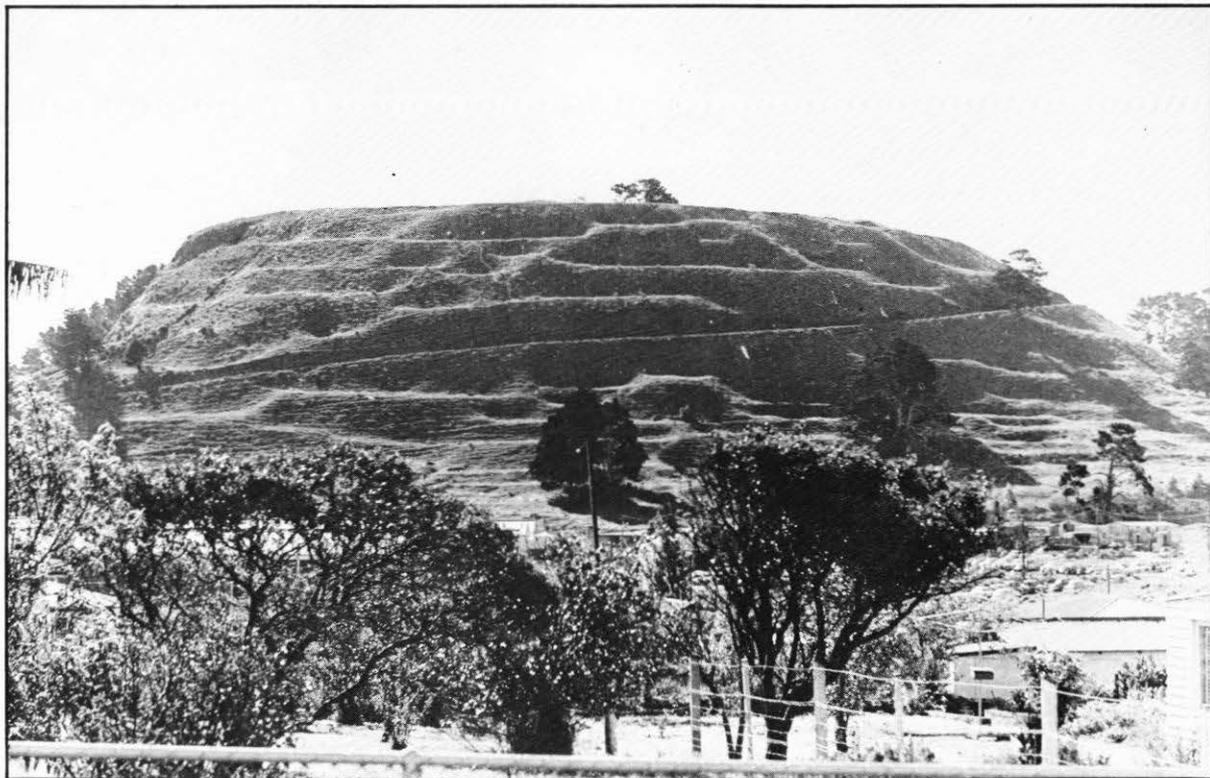


20. Mount Wellington, Auckland. Plan of the terraced *pa*, Class I.

visible barrier. Here the ditches would seem to be an afterthought, whose function was not wholly understood, providing nothing more than a challenge place on the riverside approach.

Whereas many *pa* of Class II and III took advantage of the natural defences provided by a stretch of open water or marshland for part of their perimeter, the swamp *pa* forming Class IV were more intimately related to the watery environment. They were built in or on the edges of an inland lake, by laying down an artificial foundation of timber and soil and fortifying it

on the landward side by palisades. They are what would be termed 'crannogs' or 'lake villages' in western Europe. In New Zealand they occur chiefly in the Waikato basin where there are a series of small lakes with peaty margins, some of which have now been drained by farmers, but there are other sites in the Hauraki plains, the hinterland of Hawke's Bay, and in the Horowhenua area, north of Wellington. The attraction of the lake side was the rich food resources of fish, including eels, ducks, and freshwater mussels, all close at hand.



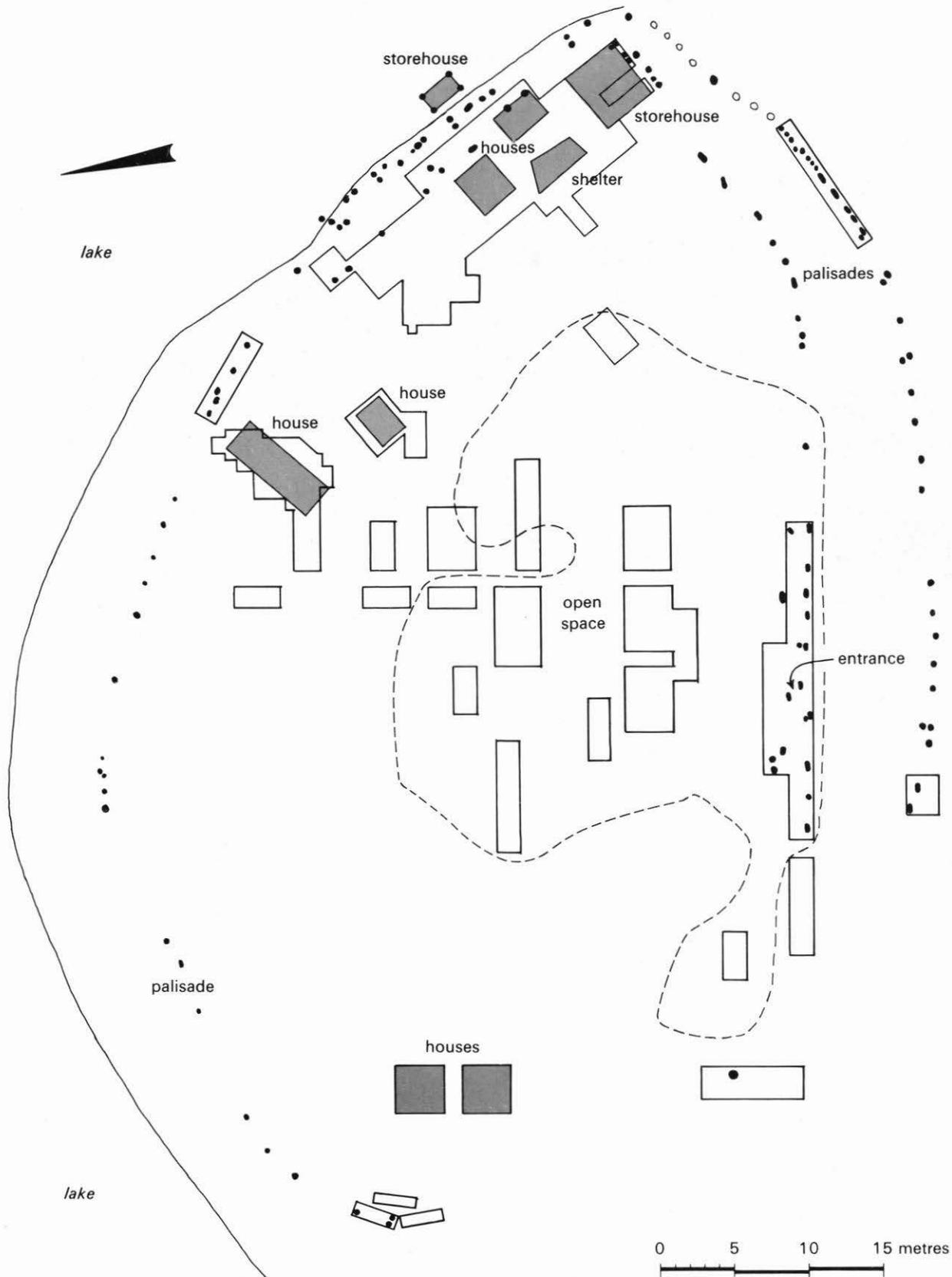
21. Mount Wellington, Auckland. Terraced *pā*, view of the external slopes.

Excavations at Lake Mangakaware by Bellwood and Peters<sup>16</sup> and by W. Shawcross at Lake Ngaroto<sup>17</sup> have shown that during construction a loose foundation of horizontal timbers was first laid down from trees felled or fallen at the lake edge, then vertical timbers for the palisade and for the framework of the houses were driven into the underlying peat and mud, and finally quantities of silt, sand, and gravel were quarried from nearby slopes on the lake shores and dumped to form a mound raised above the water line. After a time, the trampling and domestic activities would cause the mound to sink and the surface again to become waterlogged; the level would then be raised once more with soil, including a renewal of the house floors. This process was repeated many times at Ngaroto so that a three-metre high section face looks like a slice of multicoloured layer cake.

The approach to the lake from the landward side was inevitably downhill and therefore strong palisades were needed to forestall a rushed attack. At Mangakaware there were two lines eight metres apart, whilst at Maungahia, also in the Waikato, three or four lines of posts

can be seen protruding from the peat at intervals of two to three metres (Fig. 23). The posts consisted of either split tree trunks, up to seven metres long, or thin rectangular slabs tapered to a point and fire-hardened to preserve them. On the lake side at Mangakaware there were landing places for canoes and evidence for store houses and fish drying racks built out over the water and projecting beyond the single perimeter palisade (Fig. 22). These indicate that the inhabitants' control of the lake was normally unmolested.

Most of the Waikato swamp *pā* cover a small area, appropriate to an extended family group (*whanau*), but Ngaroto, traditionally the first settlement of the Ngati Apakura circa A.D. 1500, is built on a scale appropriate to a tribal centre. Because of the preservative qualities of peat on a waterlogged site, finds from swamp *pā* are many and various: they include many carved wooden objects never found on hilltop *pā*. Nevertheless the evidence from carbon-dating and from similarities of stone artefacts shows that both types of fortified sites were contemporary, and belong to the same culture.



22. Mangakaware swamp pa, class 4, Waikato.  
Plan.



23. Mangakaware swamp *pa*, Waikato. Surviving posts of the palisades.

## The development of *pa* defences

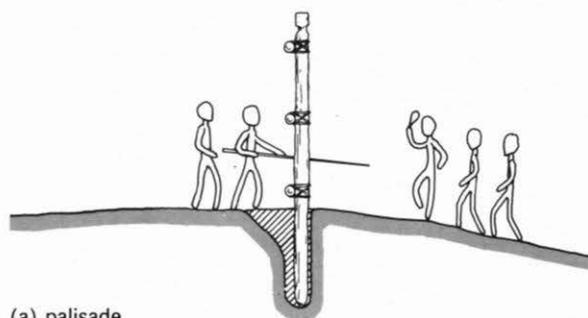
To end this chapter an attempt will be made to set up a hypothetical 'working model' of the evolution of *pa* defences based on the new evidence of radiocarbon dates. At this stage in New Zealand archaeology such an evolutionary concept is needed which can be tested by further excavations: it is likely to be substantially modified, if not outmoded, by future discoveries. Any attempt at an historical synthesis inevitably owes much to the work of Roger Green, together with that of P. Bellwood, L. Groube, and D. Simmons: the difficulties are due not so much to the lack of scientific excavations in the last twenty years, but to the frequent failure to publish anything beyond an interim report: much information exists only as oral tradition. Consequently, with one or two notable exceptions, generalisations have to be made on inadequately published evidence without the support of detailed plans and sections.

It is now generally recognised that the earliest Maori settlements by the 'Moa Hunters' of the Archaic period were open coastal sites. These are found in the North Island near the mouths of rivers or on the dunes, where there are extensive rich midden deposits containing early artefacts as at Tairua Harbour on the Coromandel Peninsula. At Kaupokonui near Hawera recent work by Richard Cassels has uncovered places in the dunes where many moas have been cut up and cooked after slaughter, and where there are also post-holes indicating that some shelters were constructed. Previous work by Buist on the site<sup>18</sup> indicated that the settlement may be an early one. At this time no defence was needed, the inhabitants being few and the communities scattered. The next stage was a move to higher ground, together with a change to an economy which included cultivation of root crops. It was first detected in the Coromandel at Opito, where as Roger Green pointed out<sup>19</sup> archaic artefacts have been recovered not only from beach middens but also from a site on Skipper's Ridge excavated by H. Parker in 1957.<sup>20</sup> This was a settlement situated on the end of the ridge 15 metres above and immediately behind the beach. It contained a series of elaborate subterranean storage pits, some almost certainly for *kumara*, a crop which needs to be stored at a constant humidity and protected from frost. A

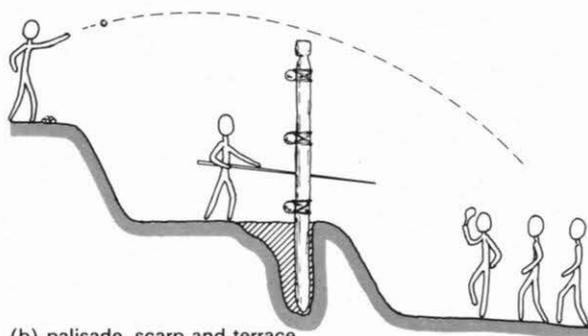
radiocarbon date of  $1170 \pm 60$ <sup>21</sup> from a piece of wood in one of the pits shows that cultivation was flourishing here during the twelfth century and that a move to a defensible position suitable for a permanent settlement with its food store had been carried out.

An even earlier date for a hilltop settlement has recently been obtained from excavations in Hawke's Bay of a *pa* near Te Awanga, on the end of a spur about half a kilometre inland from the mouth of the Maraetotara river (Fig. 16). Here a roof support post from an early storage pit, later re-used as a cooking place, has a radiocarbon date of A.D.  $900 \pm 90$ ; a second pit nearby, which replaced it, had a similar timber dated A.D.  $1200 \pm 80$ .<sup>22</sup> Similar indications of agricultural settlements preceding the fortifications had been detected at other *pa* sites, including Station Bay, Motutapu,<sup>23</sup> Kumara Kaiamo, Urenui,<sup>24</sup> and Kauri Point, Katikati,<sup>25</sup> where terrace levelling presumably for house sites, and small bin pits, succeeded the initial clearance of forest for cultivation, and has a radiocarbon date of A.D.  $1410 \pm 78$ .<sup>26</sup> So far as is known at present, these early hilltop settlements were open and undefended for there was no need as in Europe to exclude livestock or marauding wild animals: the only threat was from man. Nevertheless it seems likely that excavation eventually will be able to show that some of them were enclosed by a palisade, a simple type of defence that became widespread in Polynesia, and which may have been remembered by the Maori immigrants. It is surely significant that the Polynesian word *paa* has the original meaning of a fence, wall, or palisade.<sup>27</sup> Alternatively, clearance of bush for cultivation plots and for settlement sites would provide surplus timber that could conveniently be disposed of in a perimeter fence.

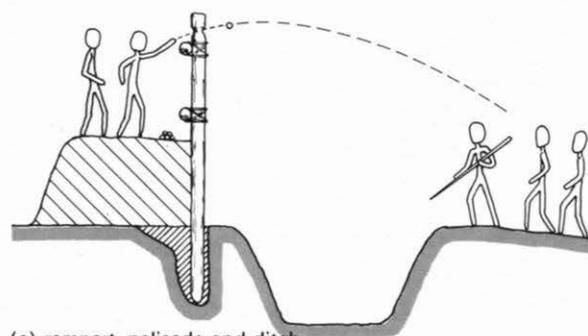
The significant change to an enclosure defended by earthworks is reasonably well documented at Kauri Point, Bay of Plenty; Otakanini, South Kaipara; and Te Awanga, Hawke's Bay. At Kauri Point the first defences, which consisted of a small lateral ditch, bank, and palisade, were cut into or were superimposed on the existing living terraces with a radiocarbon date of A.D.  $1410 \pm 78$ , so the defences should be of mid or late fifteenth century date. At Otakanini, a site formerly islanded by swamp on the edge of the Kaipara Harbour, west of



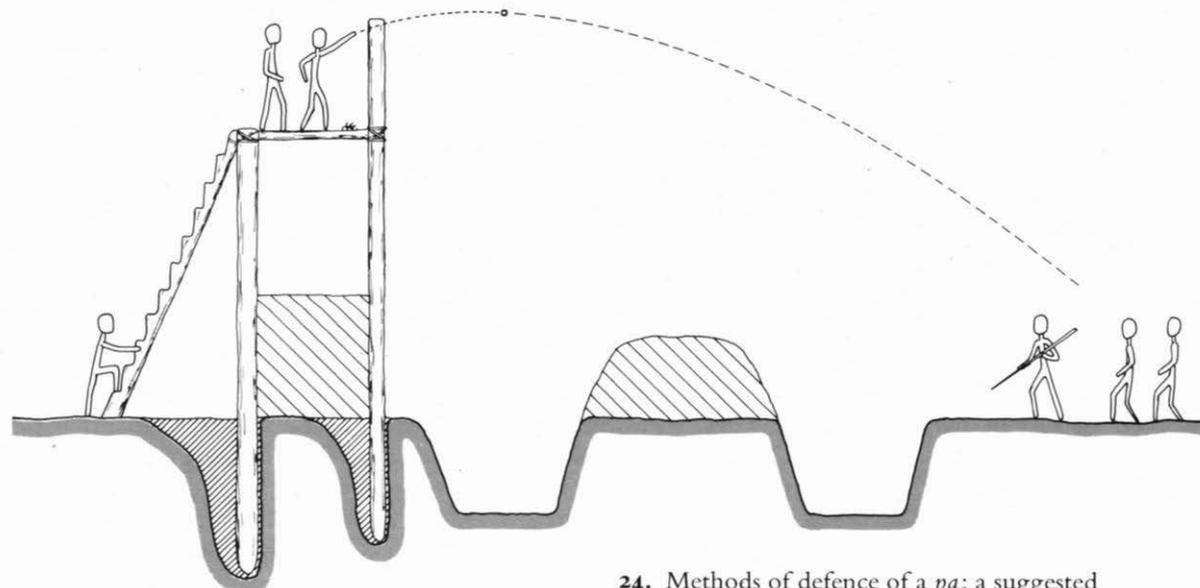
(a) palisade



(b) palisade, scarp and terrace



(c) rampart, palisade and ditch



(d) stage, ramparts and ditches

Helensville, fortification by means of a palisade and two-metre high scarp probably had been undertaken some forty years earlier. A radiocarbon date of A.D.  $1372 \pm 78$  was obtained from a hearth in the filling of one of the rectangular pits,<sup>28</sup> which again testify to *kumara* storage on this site, and the first defences were considered to be contemporary. The area thus defended was approximately one and a half hectares, practically the whole of the island, so it can be deduced that from the first the *pa* was built and occupied by a sizeable community. Later the *pa* was divided by a transverse line of defence consisting of a bank and scarp surmounted by a long wooden fighting stage (see p. 12). These in turn were replaced in period three by a ditch and bank with a palisade on top, and by two shorter fighting stages (Fig. 9), dated by radiocarbon analysis to the late fifteenth or sixteenth century (A.D. 1476 and A.D.  $1583 \pm 48$ ). Similarly, at Te Awanga (Fig. 41) the ridge was strongly fortified during the sixteenth century, first by a palisade and then by two separate lines of transverse ditches and banks, the inner line being surmounted by a fighting stage and continued by a new palisade along the weaker side.<sup>29</sup> It is thus becoming apparent that fortification in New Zealand was an insular development, arising from the need to defend existing hilltop settlements where basic food-stuffs were stored. A stock of *kumara*, *taro*, and

24. Methods of defence of a *pa*: a suggested sequence reconstructed.

fern root was essential to feed the growing communities through the wet winter and to enable them to plant the new crops in the spring. Raiding a neighbour was a quick way to overcome a shortage, and hence the need and reason for defence.

Although it is probable that the earliest fortified sites have yet to be discovered in potential areas of primary settlement such as the Bay of Plenty or in Northland, it is clear that from the late fourteenth or fifteenth century onwards, fortified settlements in the North Island became general, a tradition which continued unbroken down to the arrival of the Europeans in the late eighteenth and early nineteenth centuries. This development of fortification runs parallel with that in the islands of Polynesia, principally Fiji, Tonga, Samoa, and the Marquesas, and according to our limited knowledge is not derived from them.<sup>30</sup> Once the advantages of earthwork defences had been demonstrated, their development was rapid and widespread. As we have seen, the first concept was probably a palisade or fence, which presents a vertical timber wall which opponents have to scale or attempt to breach (Fig. 24a). The task could be made more difficult if the ground at the base of the palisade were cut back to a vertical face (i.e. scarped or terraced), denying the attackers a foothold and increasing the height of the palisade as at Otakanini in the fourteenth century (Fig. 24b). The addition of a steep-sided, flat-bottomed ditch to this scheme in the fifteenth and sixteenth centuries had two advantages: first it created an obstacle to cross in which an attack might lose cohesion, and secondly it provided soil which could be heaped up to make a rampart on which the defenders could stand and hurl missiles, stones and wooden darts (Fig. 24c); hitherto they must have remained behind the palisade ready to thrust at the assailants with long wooden spears, but unable to gauge the direction of the attack. The palisade still remained an integral part of the defence; at Te Awanga it was clear that its deeply bedded main posts had acted as a revetment to the front of the bank, whereas at Otakanini it provided extra height on top of the bank.

Once the gain in height, missile range, and field of view had been appreciated, it was only a short logical step to the provision of a fighting

stage further elevated above, or sometimes behind, the rampart and its palisade (Fig. 24d). At Otakanini the first fighting stage has a radiocarbon date of A.D. 1583  $\pm$  49 which was replaced in period three by two shorter ones using some older timber with a radiocarbon date of A.D. 1476  $\pm$  48.<sup>30</sup> At Te Awanga two timbers from the stage were dated to A.D. 1380 and 1520  $\pm$  60.<sup>31</sup> The invention, therefore, was made during the sixteenth century at the latest, and the recorded examples from South Kaipara, Hawke's Bay, Coromandel, and Bay of Islands (Fig. 40) show that its use was widespread.

Another improvement was the use of a second ditch with the soil turned downhill to form an outer bank (Fig. 24d). This kept the attackers farther away from the main palisade and would have prevented them using the machine known as a *rou* to topple the posts.<sup>33</sup> This consisted of a wooden bar attached to a strong fibre rope which had to be thrown over one of the uprights and then pulled by a gang of men to bring it down. The distance to be thrown uphill was significantly increased by the doubling of the defences. Multivallation—to use the English nomenclature—was apparently a late invention and was adopted only sporadically. At Kauri Point (Fig. 25) the magnificent double defences with a six metre inner scarp and V-shaped ditches and banks, were a replacement in period five for an earlier single line, probably in the eighteenth century.<sup>34</sup> At Ongari Point nearby, two multivallate *pa* at either end of the headland are clearly later than the central univallate example on which they have been superimposed.<sup>35</sup> There are other examples at Mangatangi, Firth of Thames, at Pukawa and Clifton in Hawke's Bay, and Dr Buist has recorded others in Taranaki, as for example Puketapu near Onaero,<sup>36</sup> or Turuturu Mokai *pa*, Hawera,<sup>37</sup> but they are not common in any district.

So far as is known, no other significant change in the method of fortification took place until the introduction of the musket in the early nineteenth century. People silhouetted on the stage then became an easy target for attacking marksmen, and the advantage in impetus for projectiles by the defenders was lost. The need for protection from bullets behind solid earthworks or below ground was evident and led to major modifications in the design of the

of the *pa*. These changes, however, belong to the historic era, and were a response to European military practice, and so are beyond the scope of this book.



25. Kauri Point *pa*, Katikati, Bay of Plenty: the multivallate defences on the left.

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## Chapter three

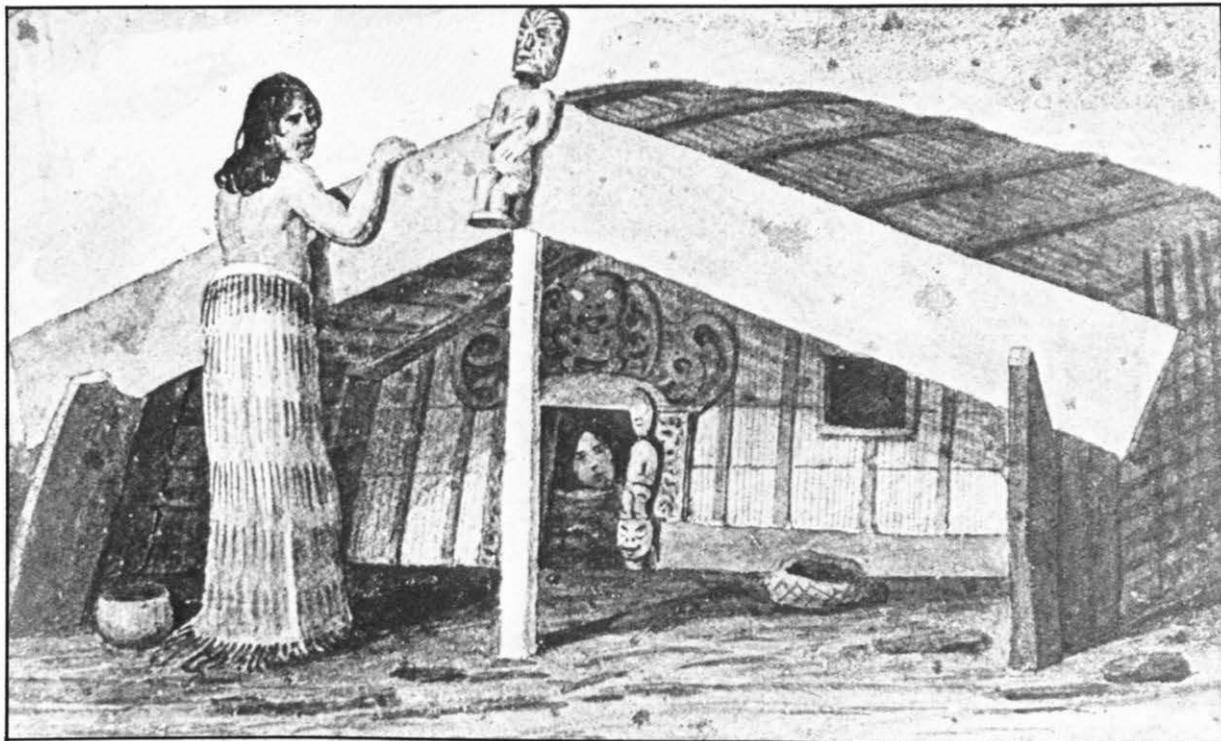
# Structures and planning within the *pa*

In this chapter we shall no longer be concerned with the *pa* as a defensive unit but will consider it as a dwelling place and centre for human activities, as attested by archaeological and ethnographical evidence. A good starting place is de Sainson's drawings of the interior of the deserted *pa* at Kahouwera, Bay of Islands,<sup>1</sup> where the houses, the cooking-places and sheds, the racks and low-roofed cellars for storage, are shown as they existed in 1826–7 (Fig. 2). I propose to examine these three categories of structures—houses, cooking-places, and stores—and to then consider in what ways they were arranged in the *pa*.

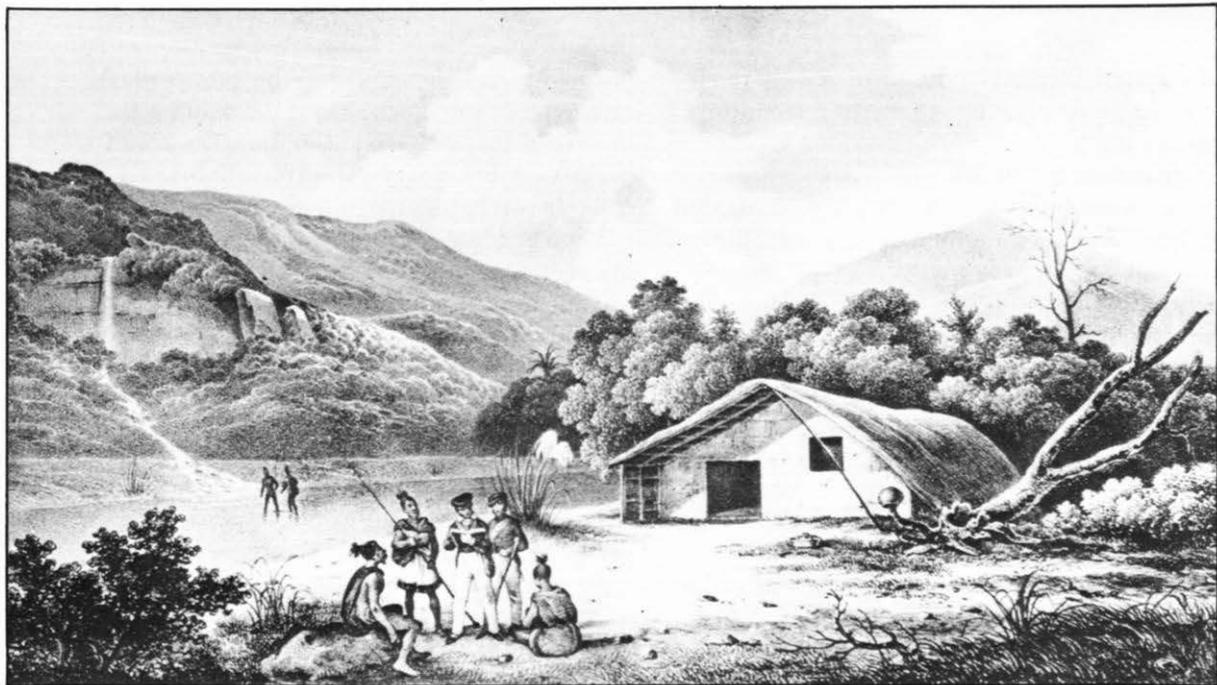
### Maori Houses

First the houses: these are depicted at Kahouwera as rectangular structures mostly with a pitched roof and wide eaves, but there are others in the *pa* with a rounded roof top, shaped as J.L. Nicholas remarked in 1814 'like the top of a covered wagon'<sup>2</sup> and are probably a local type, possibly of Polynesian ancestry. The walls consist of a framework of slender timbers with an infilling of horizontally woven panels, which is described as *raupo*, grass, rush, or wattling by various European writers. The gable ends are shown with a central upright which would carry a ridgepole. Other houses, drawn by Augustus Earle at Pakanae open settlement on the Hokianga in 1827,<sup>3</sup> have a porch or verandah at the gable end, with a small door and window with carved surrounds and a carved figure (*tekoteko*) on the ridge top (Fig. 26), whilst in de Sainson's drawing of Captain Cook's watering place at Tolaga Bay, the house in the foreground has a wide door, a little window, heavy eaves, and a roof of different pitch on either side<sup>4</sup> (Fig. 27). It is clear that in the early nineteenth century

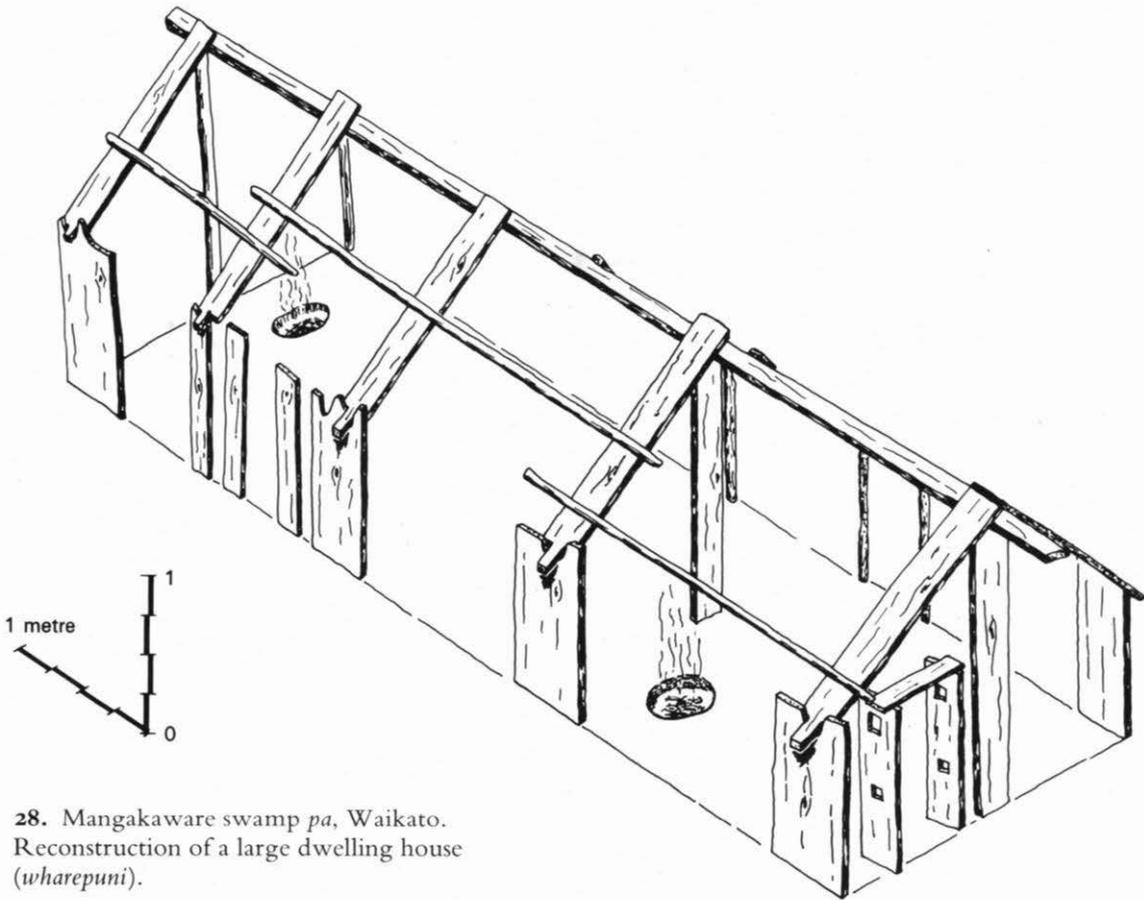
there were several variants of a basic type. Particulars of Maori houses were also carefully recorded by the early explorers, principally Cook and Banks in 1769 and le Roux and Crozet who went with Marion du Fresne on his ill-fated expedition to the Bay of Islands in 1772; these have been summarised by L. Groube in his monograph *Settlement Patterns in New Zealand*.<sup>5</sup> The construction they describe is similar to that drawn by de Sainson and Earle, the main additional features mentioned being a central pillar, sometimes carved, which supported the ridgepole internally and the provision of a stone-edged hearth, just inside the door or in the middle of the house. A verandah or porch was sometimes recorded as being an addition to the house,<sup>6</sup> showing that there was a growing tendency towards uniformity. According to the measurements given by the various writers, the houses were of two sizes, a small one from ten to fifteen feet in length (3 to 4.5 m), and a larger one from twenty to thirty feet in length (6 to 9 m). In 1814 J.L. Nicholas described the house of chief Wiveeah (Whiwhia) on the Waitangi river as being the largest he had seen. It was twenty-seven feet long (8.2 m), eighteen feet wide (5.5 m), and nine feet high (2.7 m), with a carved doorway.<sup>7</sup> On his arrival with Marsden they had found the chief sitting on the roof, demonstrating 'his elevated dignity above the rest of the people', and its solid construction. All writers make it clear that the houses were primarily sleeping houses, the food being prepared and eaten outside or in the cooking-shed; the hearths inside were warming hearths. Marsden and other missionaries spent several uncomfortable nights in the small-sized houses, crammed with people who slept naked on their cloaks or 'mats' around the fire. On one occasion on the Hokianga he and Thomas Kendall could bear the atmosphere no longer, in a hut which



26. 'The residence of a New Zealand chief', in 1827.  
Original watercolour by Augustus Earle.



27. House near Cook's watering place, Tolaga Bay,  
drawn by de Sainson, 1827.



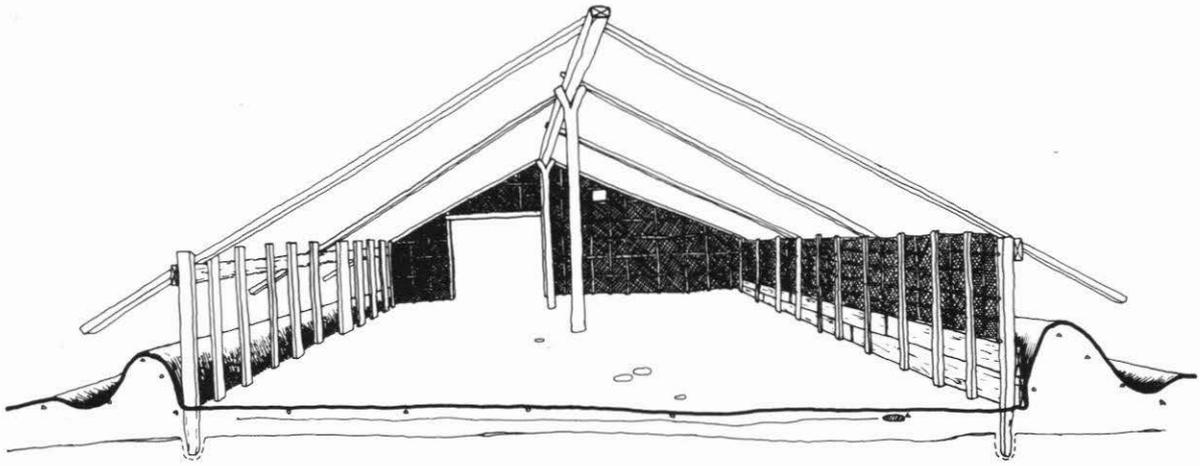
28. Mangakaware swamp *pa*, Waikato.  
Reconstruction of a large dwelling house  
(*wharepuni*).

had a central fireplace and measured only twelve feet by eight feet (3.6 by 2.4 m), and went to sleep outside.<sup>8</sup>

Archaeological evidence for Maori houses is now accumulating, though not all the excavated examples have been found in a *pa*. An example of the small house was uncovered by Anne Leahy on a terraced site overlooking Station Bay on Motutapu Island<sup>9</sup> (Fig. 38). It was an irregular construction, with a door at the gable end and one centre post; a drain at the foot of the terrace scarp indicated the rear of the house. Another small example (2.4 by 2.1 m), with a stone-edged hearth, was found by C. Smart at Tarata *pa* on a ridge in Waitotara valley, north of Wanganui.<sup>10</sup> In the swamp *pa* of the Waikato, timber structures are well preserved by the peat and recent excavation by Peter Bellwood at Mangakaware has located several houses (Fig. 22). Two small squarish houses<sup>11</sup> were uncovered, they were without centre posts and similar in size to that at Tarata; the larger

one had a verandah added to the gable end. A radiocarbon date from one of the wall posts showed that it was erected in the seventeenth century (A.D. 1670  $\pm$  76), probably towards its close. It was used initially as a sleeping-house because bedding material was found on the lower first period floor, which included twigs, leaves, and seeds of the white pine.

The more important category of large house was also found at Mangakaware:<sup>12</sup> this building was six metres in length with the door as customary at the gable end, but no verandah, and with a centre post supporting a ridgepole (Fig. 28). It was built of plank-shaped uprights, laboriously hewn from solid timber and the principal roof timbers, some of which survived, were fastened to them by mortise and tenon joints. Two warming-hearths were found on the floor. Tiromoana *pa*, Te Awanga, in Hawke's Bay, contained an outstanding longhouse measuring thirty-eight feet by thirteen feet (11.6 by 3.9 m): the walls were



29. Tiromoana *pa*, Te Awanga, Hawke's Bay.  
Reconstruction of a large dwelling house.

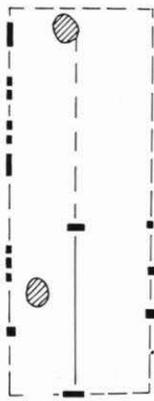
built partly of small stakes, partly of narrow planks. The roof was carried on a ridgepole supported on five or six slender posts and the eaves extended over a low earth bank that was heaped along each side to keep out the weather on the exposed crest of the ridge (Fig. 29). There was a wide door at the gable end, which is also a feature of another smaller house (5.5 by 3 m) at Tarata *pa*, near Wanganui. At Poor Hill, Ken Gorbey partly excavated an outsized house on a terrace, one of a large group spreading down the hillside below a small *pa* near Waimate North: it was forty-five feet (13.7 m) long and is undated<sup>13</sup> (Fig. 30).

To these can be added the two large houses recently excavated at open agricultural settlements in the Wairarapa, at Moikau by Nigel Prickett, and at Palliser Bay by Foss and Helen Leach.<sup>14</sup> These show most of the features that have been discussed, plank construction, door and porch at the gable end, with the addition of stone-edge fireplaces, and the provision of a slot for a timber sill at the wall base—which probably acted as a weather board in the same way as the earth banks at Te Awanga. The absence of centre posts at Moikau is curious, since the house is fourteen feet six inches (4.4 m) wide. A radiocarbon date of  $1180 \pm 54$  was obtained for its construction, whilst the smaller Palliser Bay house was dated to the late sixteenth century (average of two dates of 1466 and  $1617 \pm 70$ ). It should be noted that all the houses mentioned had a flat earth floor; despite the general belief, none are pit dwellings.

Only in the central mountain zone, for example near Lake Rotoaira, is there archaeological evidence to the contrary; a small timber house excavated by Trevor Hosking has its floor levelled at the back to a depth of eighteen inches (45 cm) into the hillside.<sup>15</sup>

Most of these large houses were probably chiefs' dwellings: the need for a sizeable house will have developed along with the dominance of the leader in tribal society as a reflection of his *mana* or prestige. It would become the natural place of assembly, and where guests would be received—as were Marsden and Nicholas. From this it is only a short step to the building of special guesthouses for Europeans—as recorded by Major Richard Cruise when visiting the Bay of Islands in H.M.S. *Dromedary* in 1820,<sup>16</sup> and to the creation of a community or assembly house, the classic Maori meeting-house, which like its prototype still functions principally as a sleeping house.

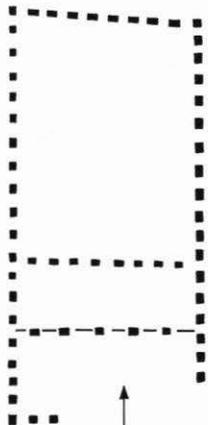
Several writers of the eighteenth and early nineteenth century saw chiefs' houses that were ornamented with carvings. Banks mentions one at the Tolaga Bay *pa* 'with all the side posts carved in a masterly style of their own whimsicalities'<sup>17</sup> which he thought had been moved from elsewhere. Crozet and le Roux refer to carved posts in the house interior at the Bay of Islands in 1772,<sup>18</sup> and as we have noted (p. 32) chiefs' houses with decorated doors and gables were seen and drawn by Earle on the Hokianga in 1826 (Fig. 26). Unfortunately, no specimens of prehistoric carving have as yet been



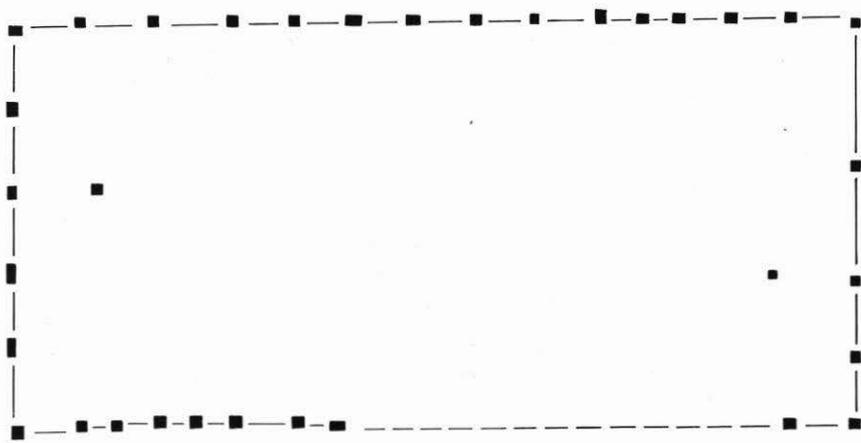
Mangakaware



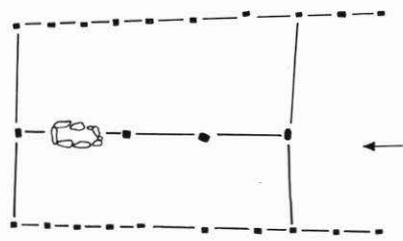
Te Awanga



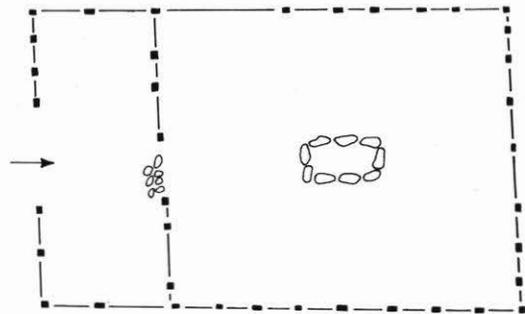
Tarata



Poor Hill



Palliser Bay



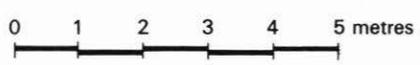
Moikau

● post holes

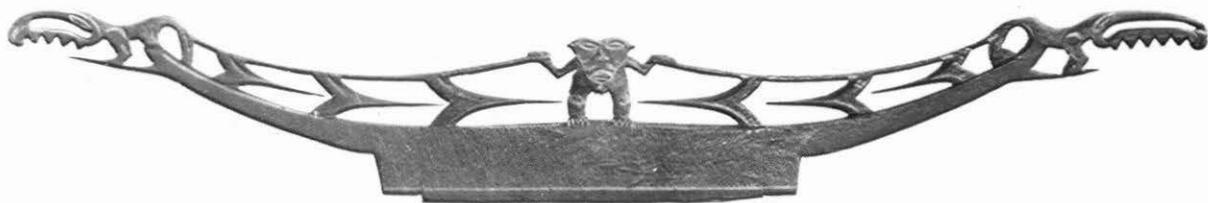


hearth

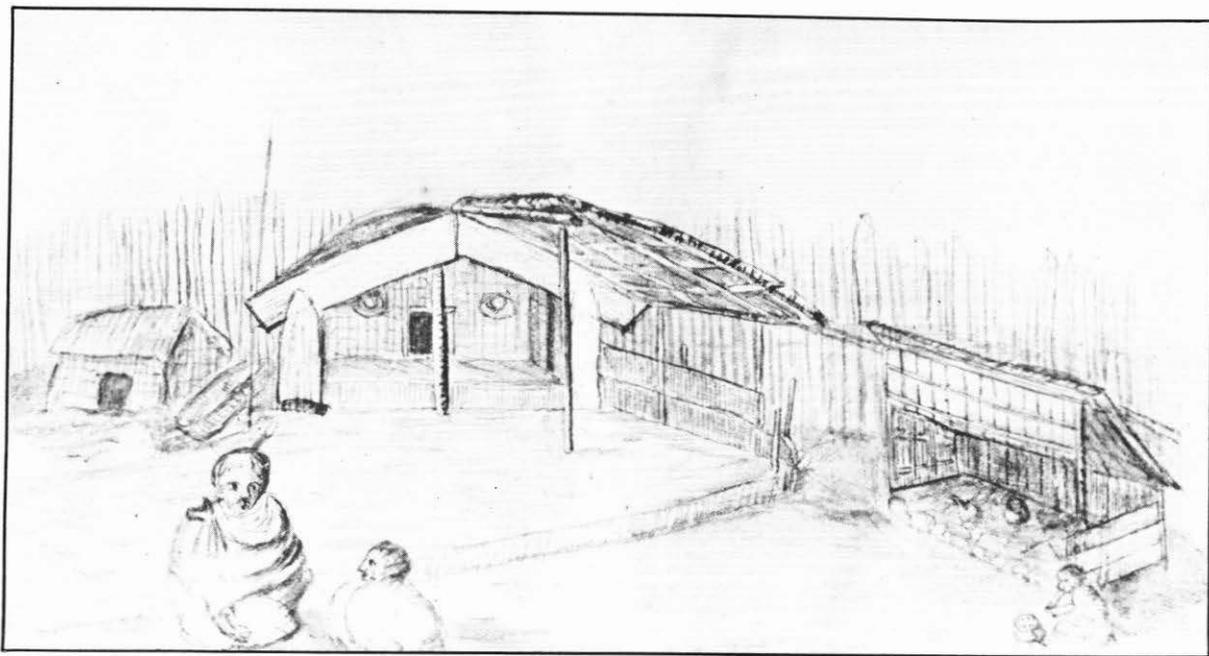
30. Maori houses excavated in the North Island, comparative plans.



recovered from controlled excavations, though there is always a likelihood that they will be found in swamp *pa*. We would dearly like to know what sort of building was entered through the Kaitaia 'lintel', that masterpiece of early carving that Macmillan Brown greatly, and rightly, admired<sup>19</sup> (Fig. 31).



31. Wooden carving from a swamp near Kaitaia.,  
Auckland Museum.



32. Chief Titari's house with an external cooking place, at Taiamai, Bay of Islands, sketch by Richard Taylor, 1841.

### Cooking places

The preparation and consumption of food took place outside the house, because it was held to be *noa* (common); it was handled by the women and slaves. Nicholas notes that the huts at Kedah's village near Rangihoua had a small enclosure in which there was a shed in which the inhabitants took their meals.<sup>20</sup> It consisted of four posts in the ground, one and a half metres high, with a covering of rushes. Richard Taylor, the C.M.S. missionary, made one of his graphic sketches (Fig. 32) of such a place when he visited chief Titari at Taiamai, Bay of Islands, in 1841.<sup>21</sup> It shows the main house in a corner of the *pa* against the palisade, with a tall spear propped up against it, and with a long lean-to construction at one side supported by a post in line with the gable. The cooking place is a little booth at a lower level with a lean-to roof and the cooking utensils are arranged on a stone-edged platform. Archaeologists might have difficulty in reconstructing such structures from the postholes they would find.

The prehistoric cooking place was a less sophisticated affair: in practice it is usually revealed by a mass of burnt material and food

debris, and by the remains of hearths and *hangi* or earth ovens. In such an area holes were dug, fires lit, the centres raked out, and the food cooked in the open on heated stones covered by wet leaves and earth time and time again, with the consequent disturbance of the stratification. Some shelter from the wind was needed and at Te Awanga a hollow provided by a disused storage pit was used as a cooking place. Here two of the hearths had stakes at either side of the fireplace, which probably supported spits on which birds or fish could be roasted or smoked.<sup>22</sup> At both of the swamp *pa* at Mangakaware in the Waikato<sup>23</sup> scoop hearths and *hangi* holes were found cut into disused house floors whilst at Hamlin's Hill, Auckland,<sup>24</sup> the cooking area, a midden with at least seven *hangi* holes, overlaid the remains of two successive houses.

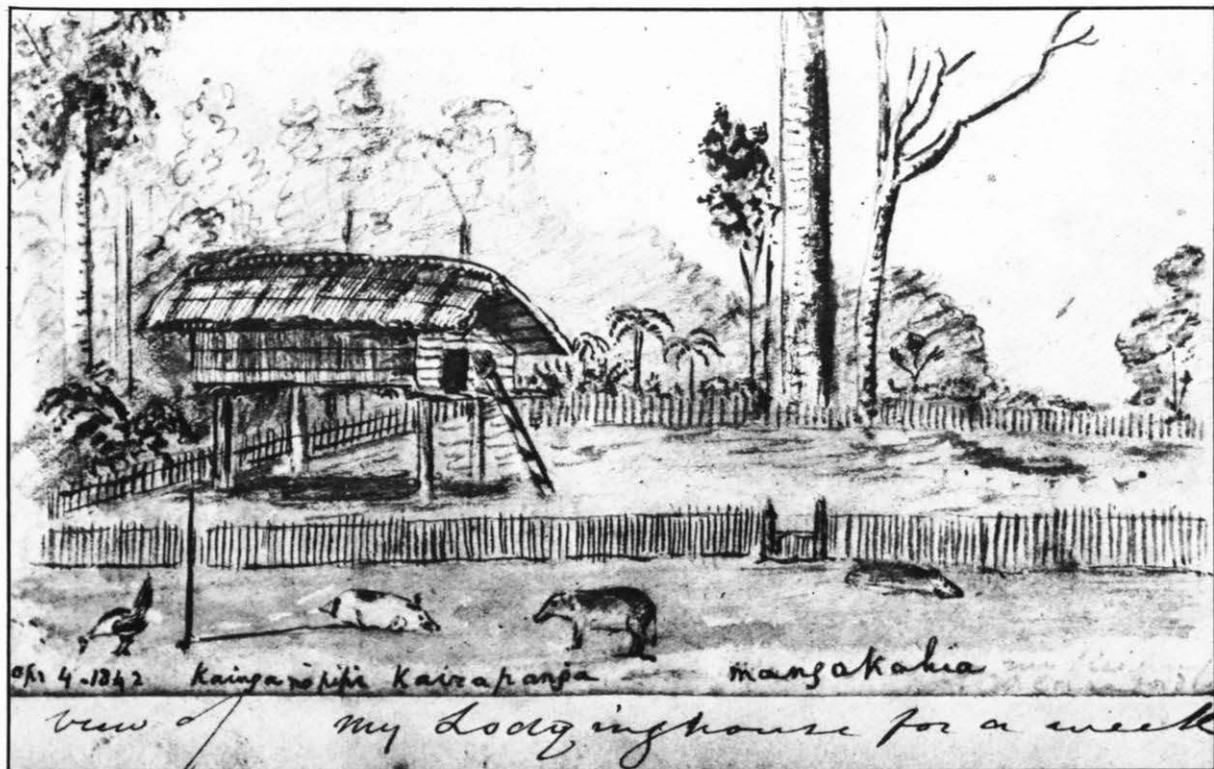
The safe keeping of food supplies both above and below ground took up much of the space inside the *pa*. One simple way to keep things out of the reach of small children, dogs, and rats, was to build racks or wooden platforms raised off the ground on one or more posts—as depicted at Kahouwera *pa* (Fig. 2). From these, it may be presumed that the carved storehouse on a single lofty pole was developed, which Earle and Angas drew, and of which elaborate examples dating from the early nineteenth century onwards survive in New Zealand museums today. Dr John Savage, resident in the Bay of Islands for two months in 1806, records how Chief 'Tippehee' imprisoned his recalcitrant daughter, 'who had fallen in love with a person of inferior condition', in one of these which was no bigger than a dovecote.<sup>25</sup>

The larger raised storehouse, *pataka*, often elaborately carved, also appears to be an early nineteenth century development and in the Bay of Islands was built primarily as a *kumara* store. These were described in some detail by Major Richard Cruise of H.M.S. *Dromedary* in 1820,<sup>26</sup> and drawn by Augustus Earle at Pakenae on the Hokianga in 1827.<sup>27</sup> He shows the four solid angle posts, about one metre high supporting a log floor which projects to form a continuous ledge or 'verandah' beneath heavy overhanging eaves from a pitched roof, with a central door in the end gable. We know what they were like inside because Richard Taylor, the C.M.S. missionary, slept in one for a week in 1842 when visiting Mangakahia on the North Wairoa river, and sketched the interior with its provisions tidily stacked in baskets on either side<sup>28</sup> (Fig. 33). When Mrs Henry Williams, Marianne, visited the Maori settlement at Kawakawa in 1836, she was conducted to a new *kumara* house of this type and invited to sit down on a bundle of clean *raupo* whilst the onlookers exclaimed, 'There she is, Mata Wiremu is sitting amongst us, sitting warming herself in the sun.'<sup>29</sup> These structures, which would reveal themselves only as a rectangular setting of four or six post holes, have not yet been identified in an excavation, so their prehistoric origin needs to be demonstrated by archaeologists.

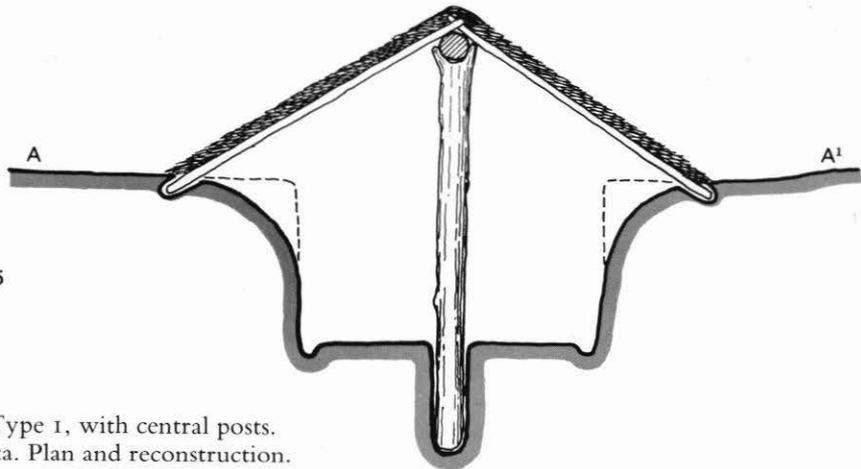
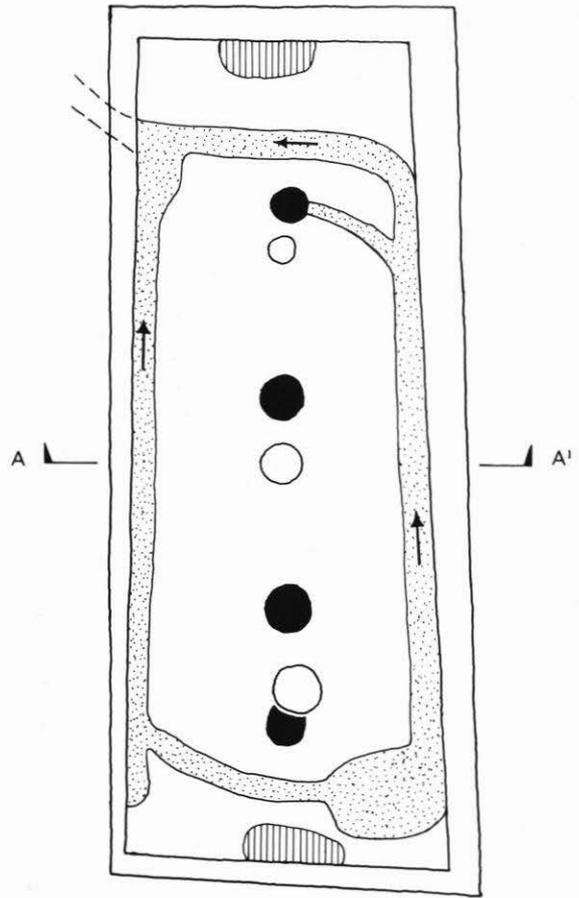
The form of storage most in evidence in archaeological investigations is underground, in

a pit or cellar: this provides an even temperature, is cooler in summer and warmer in winter, and also provides freedom from flies, though not from rats. The simplest form is a 'bin pit', usually a square receptacle, less than one metre deep, which must have been covered by a wooden lid. These have been found on late archaic sites on the Coromandel,<sup>30</sup> Skipper's Ridge, and Sarah's Gully, and also at Otakanini *pa* in period one.<sup>31</sup> Their development was two-fold, designed to increase the capacity of the store. The first was a change to a rectangular playing-card shape which no longer could be covered by a lid, and so a pitched roof was provided supported on a row of central uprights (Fig. 34). Access to the pit, which might be as much as 1.8 metres deep, was by ladder or steps (the buttress) and through a small door in the gable end. The second method was to change to a circular form and by tunnelling and undercutting the soil to leave a domed roof that would be self-supporting. The result was the bell-shaped pit known as a *rua* which was entered either from a small aperture in the top or by a side shaft. Both shapes were contemporary and are combined at Skipper's Ridge<sup>32</sup> where a *rua* formed a side-chamber to a large rectangular roofed pit. The radiocarbon date from wood from this structure was A.D. 1170  $\pm$  50.<sup>33</sup> Both types continued in use, with minor modifications, to within living memory on the east coast.

What were they used for? There is little doubt that the principal substance stored was *kumara*, a seasonal crop, which needs protection from frost and storage at an even temperature with controlled humidity if it is to survive the winter, as previous writers have pointed out.<sup>34</sup> *Kumara* are susceptible to bruising which gives mould a chance to penetrate the flesh and then a contagious rot sets in. These requirements explain the details of construction which archaeologists have recorded; to prevent excessive moisture, the pits are usually provided with drains on the internal perimeter, which empty into a sump. In the Hawke's Bay region the water is excluded by a substantial bank around the pit (the so-called 'raised rim') coupled with an external drain (Fig. 35). To keep out the frost, a substantial roof was needed which could be earthed over, and hence the need for one or more rows of solid timber

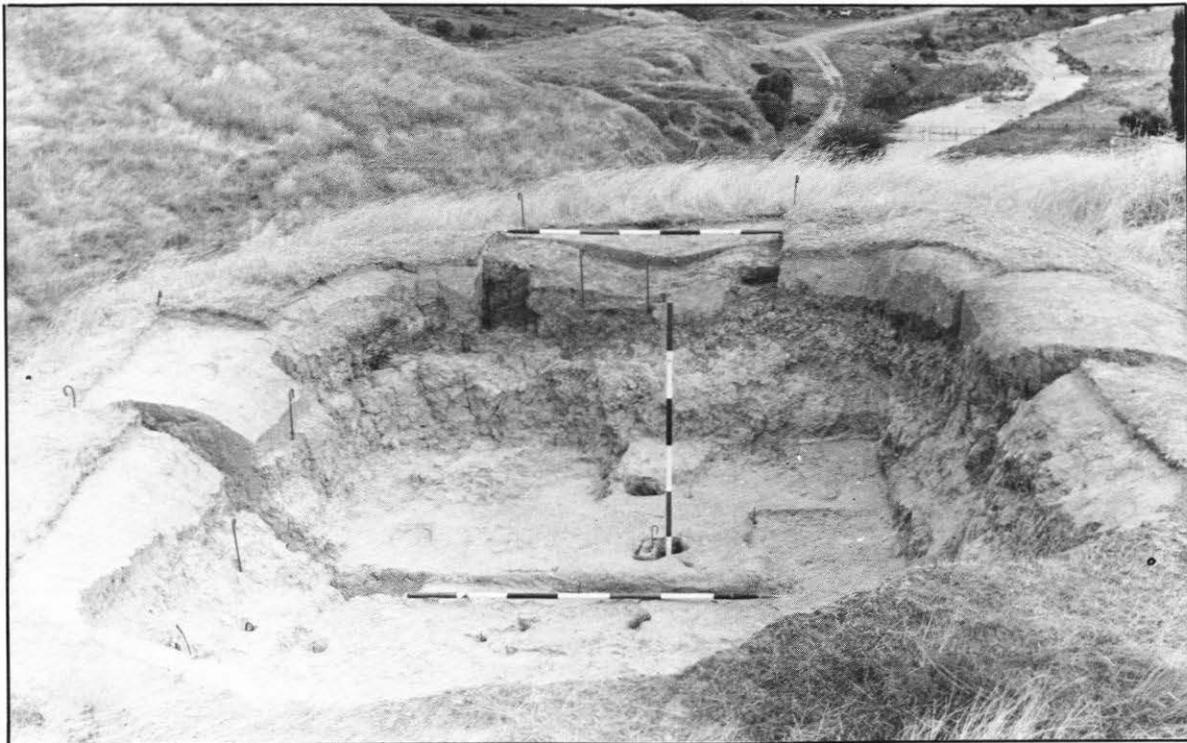


33. Storehouse at Mangakahia, North Auckland, in which Richard Taylor slept for a week in 1842. Above, exterior; below, interior view, showing the kumara stacked in baskets.



0.5 1 1.5  
metres

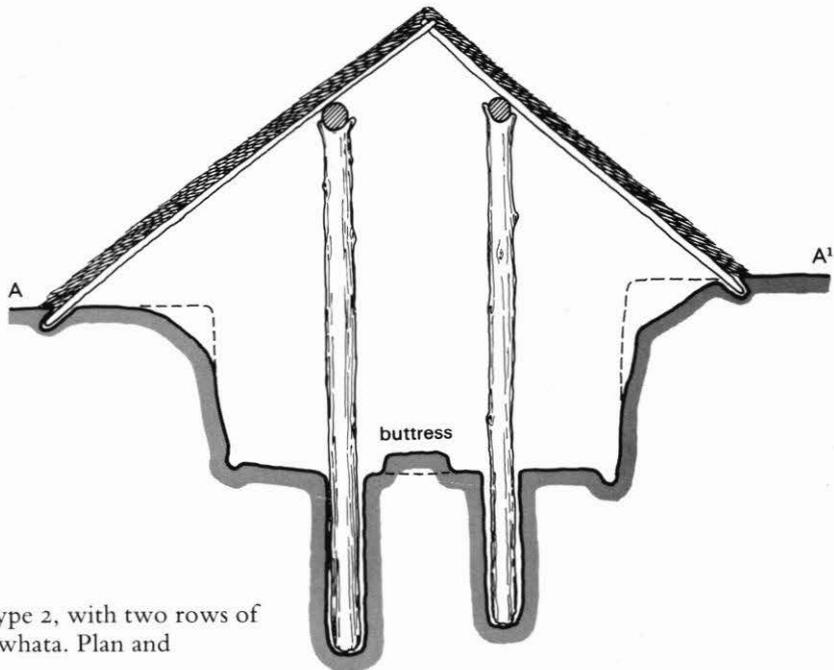
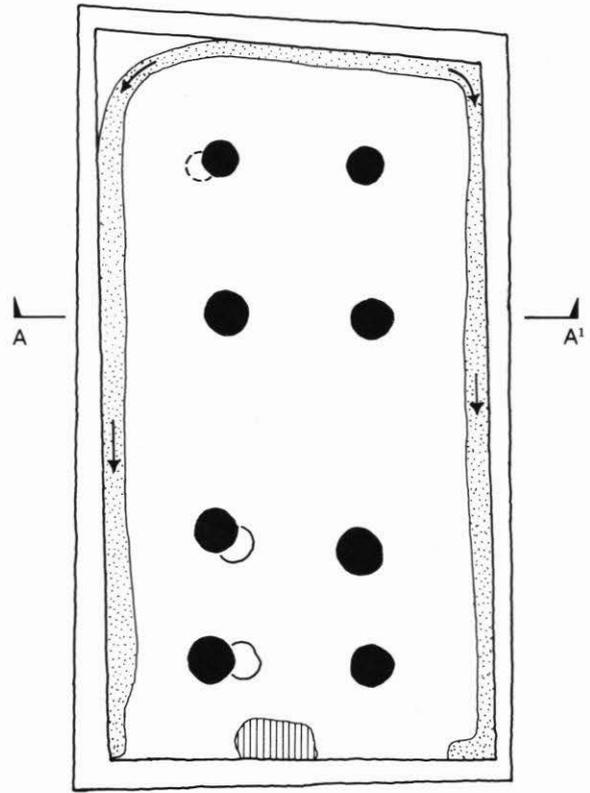
34. Kumara storage pit, Type 1, with central posts.  
Taniwha pa, Te Kauwhata. Plan and reconstruction.



35. Storage pit with raised rim, excavated at Tiromoana *pa*, Te Awanga, Hawke's Bay. The entrance is at the far end.

supports.<sup>35</sup> Double post-rows (Fig. 36) indicate that the principle of a cantilever construction was known in some areas—like the Waikato and Auckland where these 'aisled pits' occur.<sup>36</sup> In the largest pits, as at Maioro, up to five rows have been recorded, though not more than three of these are likely to have been roof supports. To keep the crop in good order, some pits had bins or racks at the side for which the emplacements or timber supports for partitions have been found—as at Te Awanga or Bald Hill, South Auckland. At Motutapu a burnt basket on the pit floor shows how some of the crop was stored: some was also kept here in small pits below the floor, probably the tubers needed for replanting.<sup>37</sup> Sometimes the pit walls have a lining of tree fern to prevent both seepage and bruising, as at Kauri Point<sup>38</sup> or Harataonga on Great Barrier, and in several examples remains of a layer of bracken fronds have been found in which the tubers were bedded. Fires on the pit floor show that this bedding was burnt, presumably at the end of the season in an attempt to prevent contagion and to fumigate the pit. At other times, fires may have been lit to

dry the freshly dug *kumara*. Despite these precautions mould eventually gained the upper hand and then it seems from numerous excavated examples, the pit was abandoned. It could be left open for a while with the roof off and then the timbers could be replaced, but often a new pit was dug and the spoil was used to refill the old one together with any domestic rubbish lying around, as at Aotea or Kauri Point. Surprisingly none of the early European writers mention the use of storage pits, despite frequently eating meals of sweet potatoes prepared for them on visits to the *pa*. It has been suggested by Helen Leach that this is due to the summer season at which they travelled, when *kumara* were probably obtained direct from the garden plots.<sup>39</sup> Roofed storage pits can, however, be recognised in early nineteenth century drawings as low buildings with a pitched roof and eaves to the ground, as for instance a row of three in the background of the deserted Kahouwera *pa* (Fig. 2), or more explicitly in Richard Taylor's sketch of the *tangi* for Te Heu Heu at Motuopuhi *pa* on Lake Rotaira in 1843.<sup>40</sup>

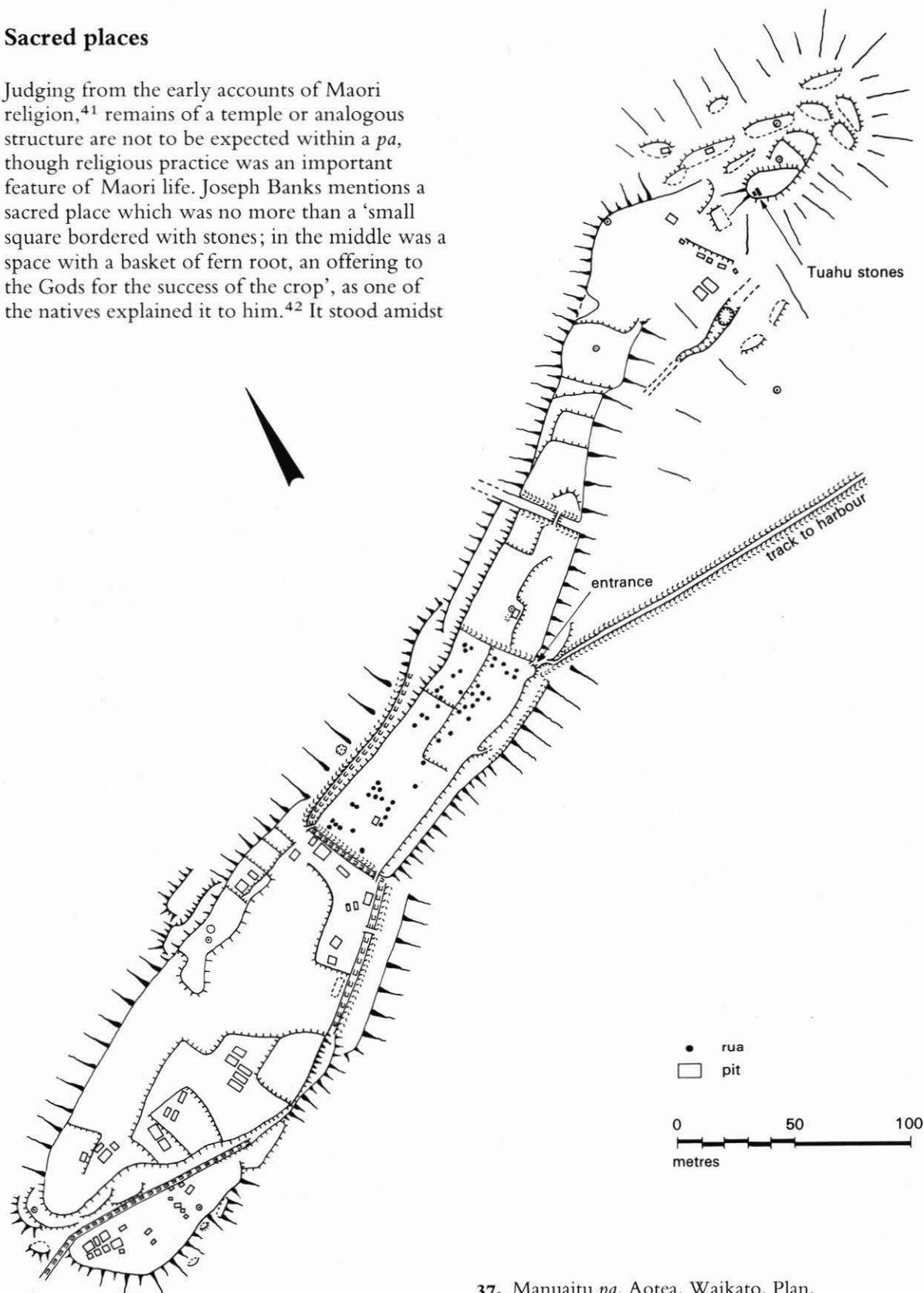


0 0.5 1 1.5  
metres

36. Kumara storage pit, Type 2, with two rows of posts. Taniwha *pa*, Te Kauwhata. Plan and reconstruction.

## Sacred places

Judging from the early accounts of Maori religion,<sup>41</sup> remains of a temple or analogous structure are not to be expected within a *pa*, though religious practice was an important feature of Maori life. Joseph Banks mentions a sacred place which was no more than a 'small square bordered with stones; in the middle was a space with a basket of fern root, an offering to the Gods for the success of the crop', as one of the natives explained it to him.<sup>42</sup> It stood amidst



37. Manuaitu *pa*, Aotea, Waikato. Plan.

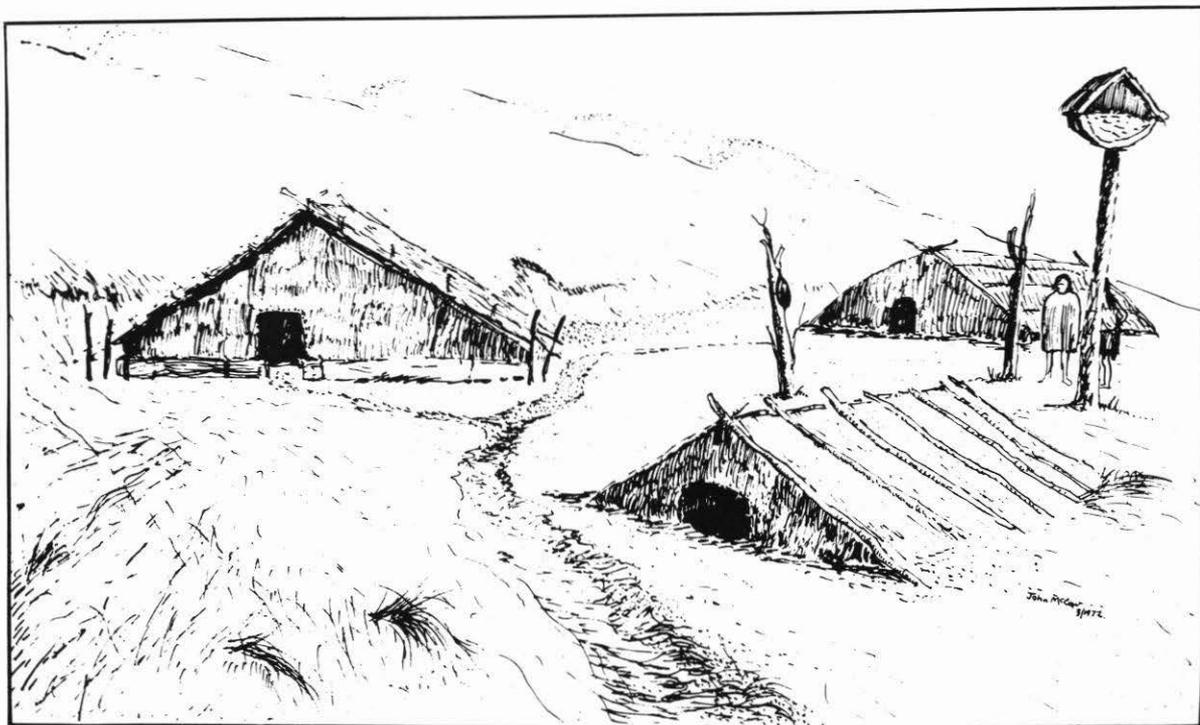
the *kumara* gardens. Samuel Marsden described a small wooden carved construction that he saw in 1819 at Rangihoua *pa* which he called an Ark, and in which the Chief kept his sister-in-law's preserved head. The 'Ark' was five feet long (1.5 m), two feet wide (.6 m), and eleven and a half inches high (29 cm). Originally food offerings had been placed in it on the instructions of the *tohunga* to avert a plague of caterpillars;<sup>43</sup> it was probably a model house. A variety of offerings including clothing, gourds, and baskets of food, were placed or hung in a cage-like structure which G.F. Angas drew and described near Rangihaeata's *pa* on Cook Strait;<sup>44</sup> it was situated on the brow of a steep hill overlooking the palisaded settlement. A sacred place (*Wahitapu*) of this kind was discovered during excavations at Kauri Point in 1964 where Wilfrid Shawcross excavated a remarkable series of wooden combs and other offerings in a swamp at the junction of two streams just below the *pa*. The objects had been placed in a small wooden enclosure, and had been deposited by the people from the *pa* over a long period of time.<sup>45</sup>

A sanctuary of another type can be seen at Aotea, on the crest of a conspicuous knoll about ninety metres east of the large ridge *pa* (Fig. 37), where there are two stone pillars known locally as the 'Tuahu stones'.<sup>46</sup> These are natural slabs of the local sandstone and though now prostrate, probably were designed to be set upright. Other single upright slabs are known near Ruapuke *pa*, Raglan and at the Korekore *pa*, near Muriwai, North Auckland.<sup>47</sup> The underlying concept for such monuments is that a god or spirit (*atua*) who has been invoked by a *tohunga* has taken up his abode in the stone and so rendered it sacred. It will be noticed that these religious sites are outside the *pa*, but within view of the inhabitants, and presumably were placed at a safe distance away for reasons of the *tapu*.

## The plan

Having examined the buildings within the *pa* individually, we must now see how they were arranged; can any recurring patterns be detected that justify using the phrase 'planning the *pa*' even though material for such judgments is limited by the paucity of large-scale excavations that have been published, and detailed site surveys? First there are domestic units relating to a single family that have been recognised in excavations. Anne Leahy was able to define such a unit in an open terraced settlement on Motutapu.<sup>48</sup> This consisted of a small house, two storage pits, and a courtyard with *hangi* for cooking (Fig. 38). At Tiromoana *pa*, Te Awanga, there was a similar family unit on the tip of the spur<sup>49</sup> where a large storage pit, a cooking place made in a disused pit, and post holes for a small sleeping-house, were found: all three were separated from the rest of the *pa* by a bank and scarp (Fig. 41). At Mangakaware (Fig. 22) a house and an adjoining open ended shelter with bark flooring, together with rows of eel racks and many *hangi*, were separated by a palisade-fence from the central area of this swamp *pa*.<sup>50</sup> The compound had a complicated history and, although the buildings inside it changed in use, the unit retained its domestic character and the boundary fence was unaltered. In general it can be assumed that most of the terraces, which feature at so many *pa*, were levelled in order to create a living area and that skilful excavation, as at Aotea open settlement,<sup>51</sup> would reveal the plan of the house structure and its cooking place and midden nearby.

The summit terrace or platform is a special case: this is usually a square construction, carefully levelled, heavily scarped, and defensible (Fig. 17). Sometimes there is a minor division on the crest as at Ngahuha *pa*, Smith's Road, Bay of Islands. Pits are rare, and when they occur they tend to be large as the single example at Pawhetau Point *pa*, at Kawakawa Bay, Clevedon (Fig. 15). This area is customarily associated with the chief and is known as the *tihī*. Nicholas commented that Chief Duaterra's residence stood on the most elevated part of the hill<sup>52</sup> whilst at Waimate *pa* Marsden described a stage twenty feet long (6 m), three feet wide (.9 m), and six feet high (1.8 m), erected for the chief 'in the centre of the



38. Motutapu Island, terraced dwelling site at Station Bay. Reconstruction.

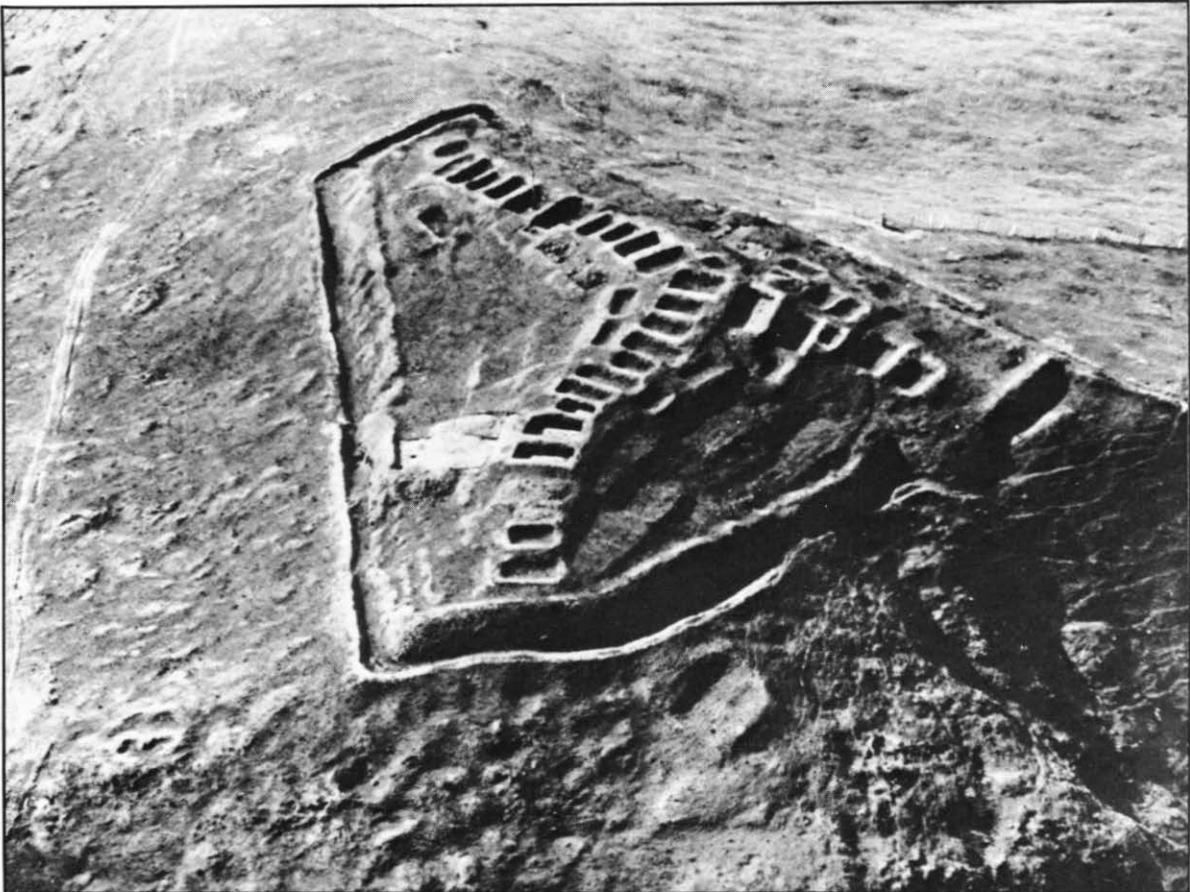
fortification on the very summit of the hill. Upon this the chief sits either for pleasure or business just as occasions require his consulting with his people.' There was a seat for his lady and a small hut for their provisions alongside.<sup>53</sup> A lookout on the summit with a watchman to sound an alarm on a gong is also mentioned by Marsden in a *pa* on the North Wairoa.<sup>54</sup>

Not every *pa* has a summit platform. Although Dr Buist's survey of North Taranaki has demonstrated that it is a very general construction in this area, where the platform is often surrounded by a ring-ditch (Fig. 17), it is uncommon in other areas like Bay of Plenty or Auckland. Presumably it is a regional feature and distribution studies are needed to see if it can be correlated with tribal areas. A full scale excavation of a select example is also needed to provide a detailed plan of the layout and to assess the social significance of these structures.

It is clear that storage was organised on a communal basis within the *pa* as well as by individual family groups. At Kohekohe, a ridge *pa* on the South Manukau harbour, most of the storage pits are arranged in groups, separated from the probable living areas.<sup>55</sup> At Aotea<sup>56</sup>

one of the four divisions of this ridge *pa*, which are separated by transverse ditches (Fig. 37), contains *rua* type pits exclusively, whilst in another nearly all the pits are of the rectangular type: such an arrangement must reflect a considered plan. On the volcanic cones in Auckland and in the Bay of Islands most of the visible rectangular pits are segregated on the terraces on the external slopes and are arranged in tidy groups of six to ten, as at Mount Wellington (Fig. 20). These may be related to ownership of cultivation plots by an extended family group (*whanau*) within the larger tribal community (*hapu*).

In some *pa* the space allocated to storage is disproportionate to the living area. Garry Law and Roger Green came to the conclusion that Taniwha *pa*<sup>57</sup> near Te Kauwhata was designed primarily as a fortified store (Fig. 39). Here there were forty-four rectangular pits carefully arranged in long rows on the crest of the hill, their long axis lying across the contour; their interconnected drains indicating a communal organisation at work. The living areas, twenty-five in number, were segregated at a lower level on either side of the pits and at the edge of the



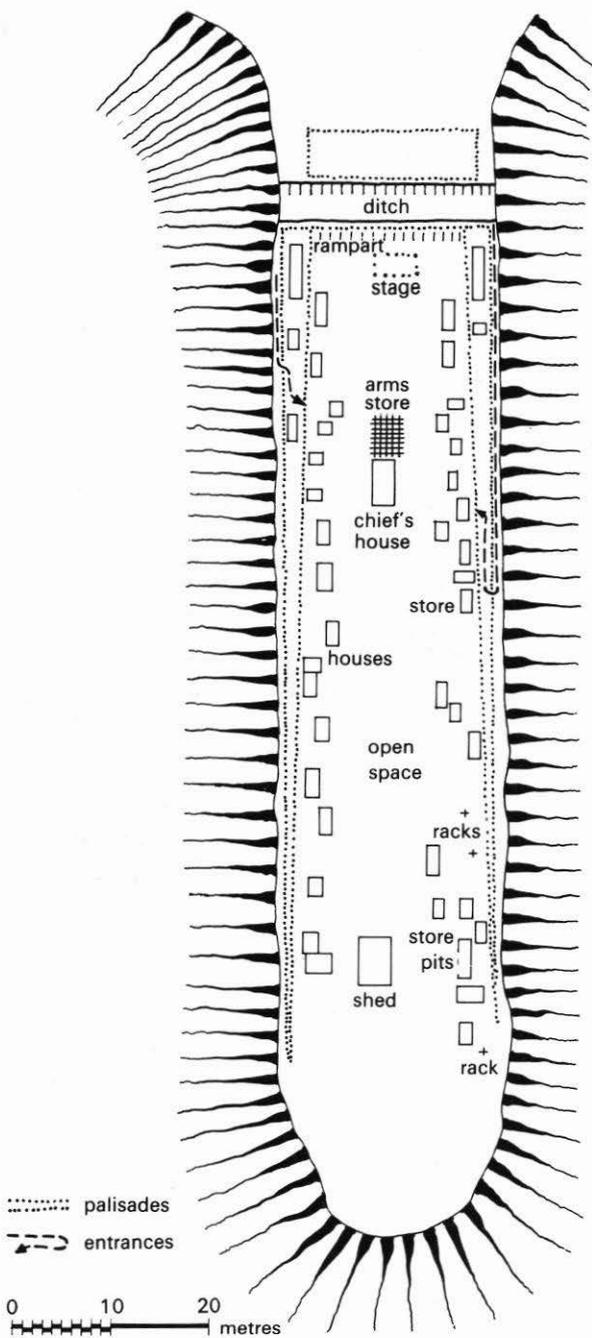
39. Taniwha *pa*, Te Kauwhata, showing the systematic arrangement of storage pits.

*pa*: excavation indicated that these had been only lightly occupied. Augustus Earle sketched a distant view of a similar *pa* on Motuiti Island, in the Hokianga,<sup>58</sup> and commented that it was ‘a curious and interesting spot being a native *pa* and depot entirely covered with storehouses for provisions and ammunition’.

The provision of a ‘public open space’ for general assembly and ceremonial—in Maori terms a *marae*—has not often been detected in the surviving *pa* in New Zealand. It features in one of G.F. Angas’ attractive sketches of Kaitote, Wherowhero’s *pa* at Taupiri on the Waikato river, in 1845.<sup>59</sup> He shows the houses sited on the perimeter against the palisade with somewhat idealised figures seated on the ground in a semi-circle on the central *marae* (Fig. 4). A similar plan is in evidence at Paeroa *pa*, Bay of Islands, as recorded by Crozet, a member of du Fresne’s expedition in 1772 (Fig. 40). Houses surround a long central open space, with the

chief’s house and arms’ store isolated in a position of dignity at one end of the *marae*.<sup>60</sup> At Mangakaware swamp *pa*, the buildings located were similarly arranged close to the palisade, and facing inwards towards an open space, 500 square metres in extent, which Bellwood identified as the *marae* (Fig. 22). At Te Awanga, there is an open space towards the end of the *pa* which is surrounded by raised-rim store pits and terraced house sites, which could also have been used as a *marae* (Fig. 41). None of these *pa* have a summit platform or *tihi*: where this occurs, it may be supposed that assemblies were held there, near the chief’s house or beside his high seat in the centre of the *pa*, as Marsden recorded.<sup>61</sup>

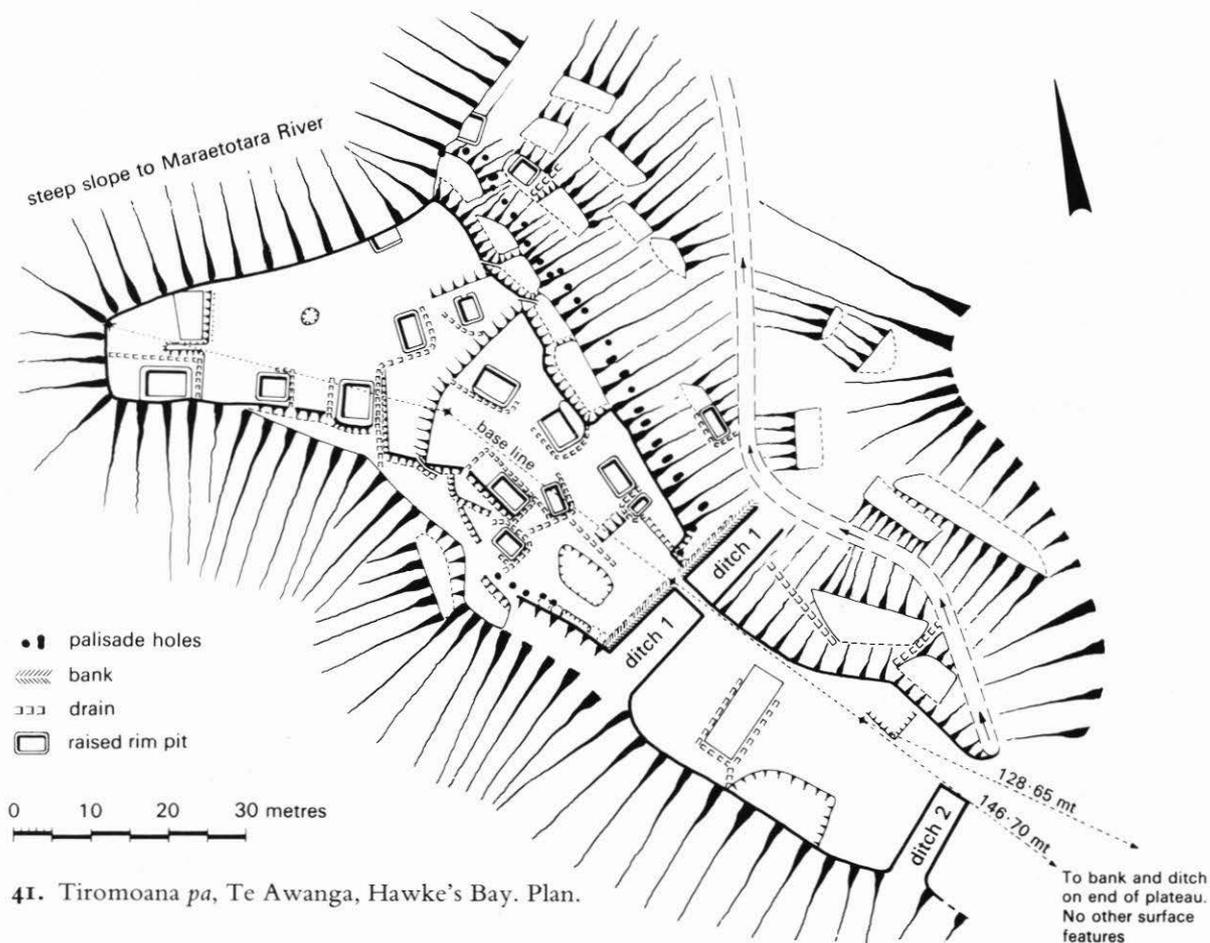
Another type of plan is indicated by Joseph Banks’ description of Wharetaewa *pa* in Mercury Bay. ‘The inside was divided into 20 larger and smaller divisions; some of which contained not more than one or two houses, others 12 or 14, every one of these was enclosed by its own



40. Paeroa pa, Bay of Islands.

palisade, though not so high or strong as the general one.<sup>62</sup> Cook noted at the same place that 'There were little outworks and huts on the side of the hill . . . for such of the inhabitants to live in as had not room in the main works but had taken shelter within it'.<sup>63</sup> Angas described the general layout of the *pa* he had visited in similar terms: 'The interior is divided by lower fencings into numerous courtyards which communicate with each other by means of stiles; in each court stands the house and cookhouse of one or more families and also the *pataka* or storehouse for food'.<sup>64</sup> This is what he drew at Motuopuhi *pa*, Lake Rotoaira, showing a good deal of open space between the dwellings. Angustus Earle recorded a similar state of affairs in his view of Rangihoua *pa* in the Bay of Islands<sup>65</sup> (Fig. 3). A careful survey of the large *pa* at Pawhetau Point, Kawakawa Bay<sup>66</sup> has indicated a layout of the type described by Banks and Cook, with as many as forty terraces and compounds within the three main enclosures, separated by transverse ditches (Fig. 15). The compounds, which are of varying sizes, are defined by low scarps on the relatively level ground on the top of the spur, and by terraces on the steep slopes. There are also external platforms on the hillside outside the main defences, similar to those described by Cook at Mercury Bay. In Taranaki the compounds are usually clearly marked as they are built as separate scarped platforms, often defended by a ditch, as for example the five which make up Ruataki *pa*, Waiiti<sup>67</sup> (Fig. 17). Excavation is needed to ascertain the details of the layout of such units by complete stripping of the surface of a select example. It is likely that the larger compounds were occupied by an extended family group (*whanau*) but until the houses and other structures within them have been identified by excavation and their historical development ascertained, this is only speculation.

It may be concluded from this survey of prehistoric Maori fortifications that the phrase 'planning the *pa*' is justified. In the previous chapter, the environmental and topographical factors which governed the choice of site within the tribal territory were indicated—the food resources, the cultivable soils, the steep slopes and streams which provided natural defence. It was concluded however, that the layout in



41. Tiromoana pa, Te Awanga, Hawke's Bay. Plan.

detail was planned in relation to the expected mode of attack. The decisions where to align palisades, where to dig ditches, whether or not to erect fighting stages, were thought out and planned by individuals. Archaeology cannot tell us who these were, whether chief or *tohunga* acted singly or in concert or according to the decision of a tribal group.<sup>68</sup> Similarly, provision for the systematic layout of store pits, the open space left for a *marae*, the elevated platform (*tihi*) built for the chief's house and the watchman, had to be thought out in advance, as well as the number of terraces to be levelled for occupation by family groups. Each *pa* will have varied in its requirements for defence and for occupation, and as we have seen, there was no uniformity in layout: furthermore there would inevitably be additions or alterations as the population grew or declined. Archaeologists may eventually be able to isolate regional types of internal planning, as well as modes of defence. In any case it is clear that a *pa* was not the crude haphazard work of a group of blood-thirsty

savages, but a response to the many, varied and changing needs of a prehistoric Maori community: as such it arouses our interest, deserves our respect, and merits preservation.

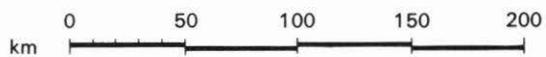
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12. *idem* Fig. 7, p. 83.
13. Unpublished: personal communication.
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51. Unpublished information from R. Cassels.
52. Nicholas, J.L. *Narrative I*, p. 175.
53. Marsden, S. *Letters and Journals*, p. 99.  
Nicholas refers to it as a throne, *Narrative I*,  
p. 339.
54. Marsden, S. *Letters and Journals*, p. 324. A  
gong is illustrated by G.F. Angas in *The New  
Zealanders*, plate 58.
55. Law, G.R. *N.Z.A.A. Newsletter* 12 (1969),  
p. 20, plan pp. 26, 27.
56. Plan (Fig. 37) and information from  
Richard Cassels.
57. Law, G.R. and Green, R.C. *Mankind* 8  
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58. Murray-Oliver, A. *Augustus Earle in New  
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59. Angas, G.F. *Savage Life and Scenes II*, pp. 35,  
36; *The New Zealanders*, plate 15.
60. Crozet, J. *Voyage*. p. 32. The original plan  
is reproduced in L.G. Kelly *Marion du Fresne at  
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66. Fox, A. *Auckland Museum Records* 11 (1974),  
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67. Buist, A. *North Taranaki*, p. 81.
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Wellington in which chief Whatonga issued the  
directions to his sons and their followers. See  
*The Pa Maori*, pp. 69-71.



42. Map of sites in England and Wales mentioned in Chapter four.



## Chapter four

# The *pa* and the people, some British analogies

Archaeologists in Britain and New Zealand have known for a long time that there are structural resemblances between the Maori *pa* and the Iron Age hillforts built by the Celtic people from the seventh century B.C. onwards. Sir Raymond Firth, in an article entitled 'Maori hillforts'<sup>1</sup> in 1927, was probably the first to make British archaeologists aware of the wealth of comparative material, but until recently, his study was not followed up. In this last chapter detailed comparisons will be made between the two groups of earthworks, and the reasons for the similarities and differences will be discussed. The approach is one that would have interested Macmillan Brown, who made similar wide-ranging comparative studies. It must be stated at the outset that, of course, there is no physical connection between the two cultures, Celtic and Maori, separated as they are by 18,000 kilometres in space and nearly 2,000 years in time, but as is hoped to demonstrate, the *pa* and the hillforts are the products of the same sort of society.

Hillforts in England and Wales number about 2,000, more or less half the number of *pa* estimated in the North Island of New Zealand. Like the *pa*, the term 'hillfort' includes a variety of defended enclosures, ranging from large well-defended tribal centres like Maiden Castle (Fig. 43), to small homesteads appropriate to extended family groups. When excavated, the major sites are usually found to have a long and complex history covering several hundred years. Hillfort distribution in Britain is governed by economic factors, although rather different ones from those affecting the Maori fortifications in New Zealand. In the Lowland Zone of the south and east, the distribution<sup>2</sup> is related to the extent of pervious soils suitable for arable cultivation, principally the chalk and Jurassic formations,<sup>3</sup> whilst in the southwest, in Wales, and in the north, hillforts are found on the coastal tracts

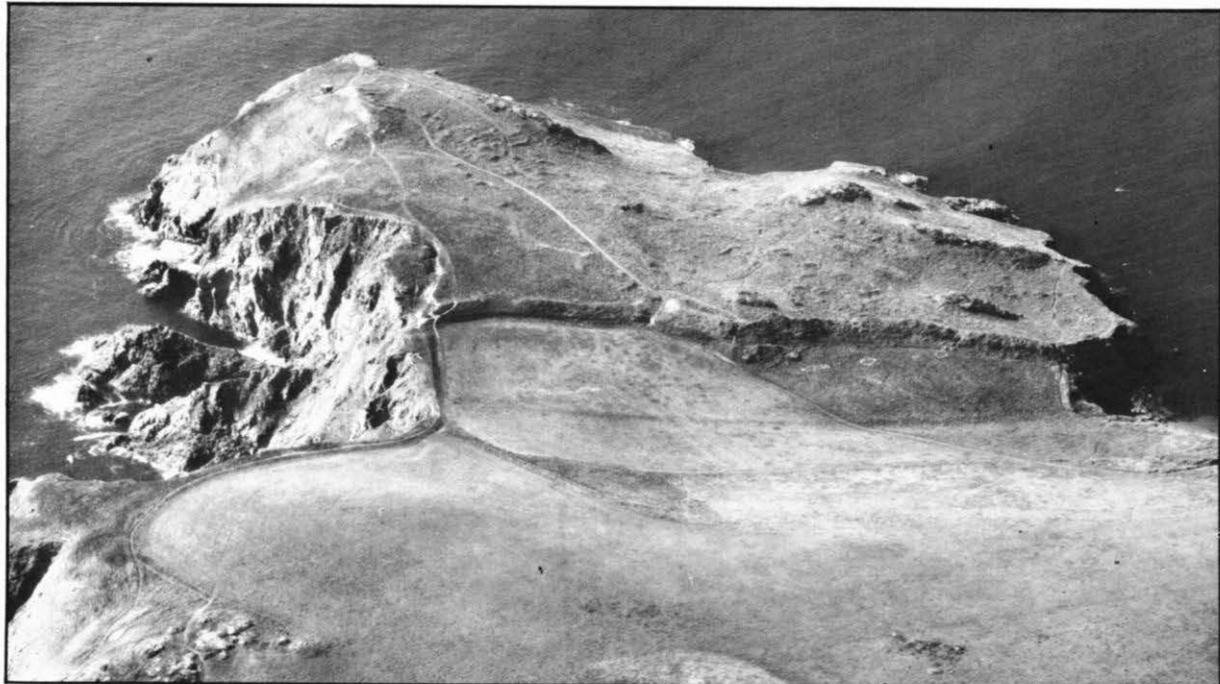
and in the foothills of the highlands, where good grazing and some level ground for cultivation were obtainable. In both areas a mixed economy was practised, shown by the excavated remains of animal bones and by the field systems with embanked drove-ways which survive in the vicinity of some hillforts.<sup>4</sup> In the Highland Zone there was more emphasis on pastoralism, in the Lowland Zone more on arable cultivation. Unlike the Maori, the Celt had little interest in fish or shellfish, for the simple reason that the protein in his diet was easily obtained from domestic animals, cattle, sheep, and pigs. The spirited rendering of oxheads as decorative terminals to iron 'fire-dogs' or as mounts on bronze vessels indicate that beef was the prestige food.<sup>5</sup>

The location of hillforts within the tribal territory, which field survey on the southern chalk has shown to cover some ninety to a hundred square kilometres for the major centres, was determined primarily by the natural defensive qualities of the site. An isolated hill, as at St Catherine's Hill, Winchester, a coastal headland as Bolt Tail in Devon (Fig. 44), the end of an inland spur as at Hembury in Devon, a ridge as Maiden Castle (Fig. 43), or Hambledon in Dorset (Fig. 47), are all types of site that would also have been selected by the Maori people for fortification and for the same reason, namely, that geology and time have done part of man's work in advance.

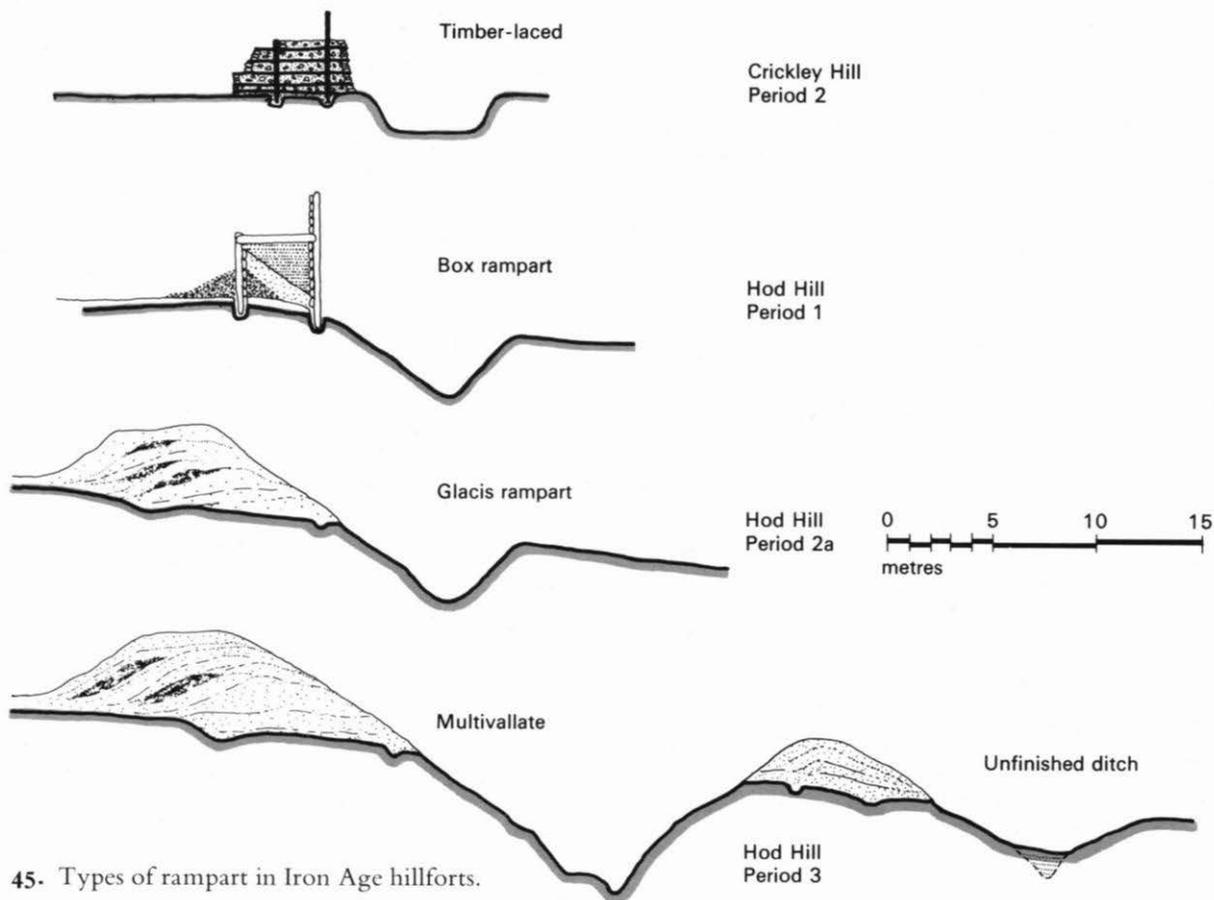
At a first glance the methods of defence seem similar: both peoples dug ditches, raised ramparts and erected palisades, but the close study which excavators have given to the British earthworks reveals some significant differences. The use of a free-standing palisade is an early Iron Age feature with late Bronze Age antecedents, as at Staple Howe in east Yorkshire<sup>6</sup>, occupied in the eighth and seventh



43. Maiden Castle, Dorset. Iron Age hillfort with multivallate defences following the contour of a ridge.



44. Bolt Tail, Devon. Iron Age coastal promontory fort.

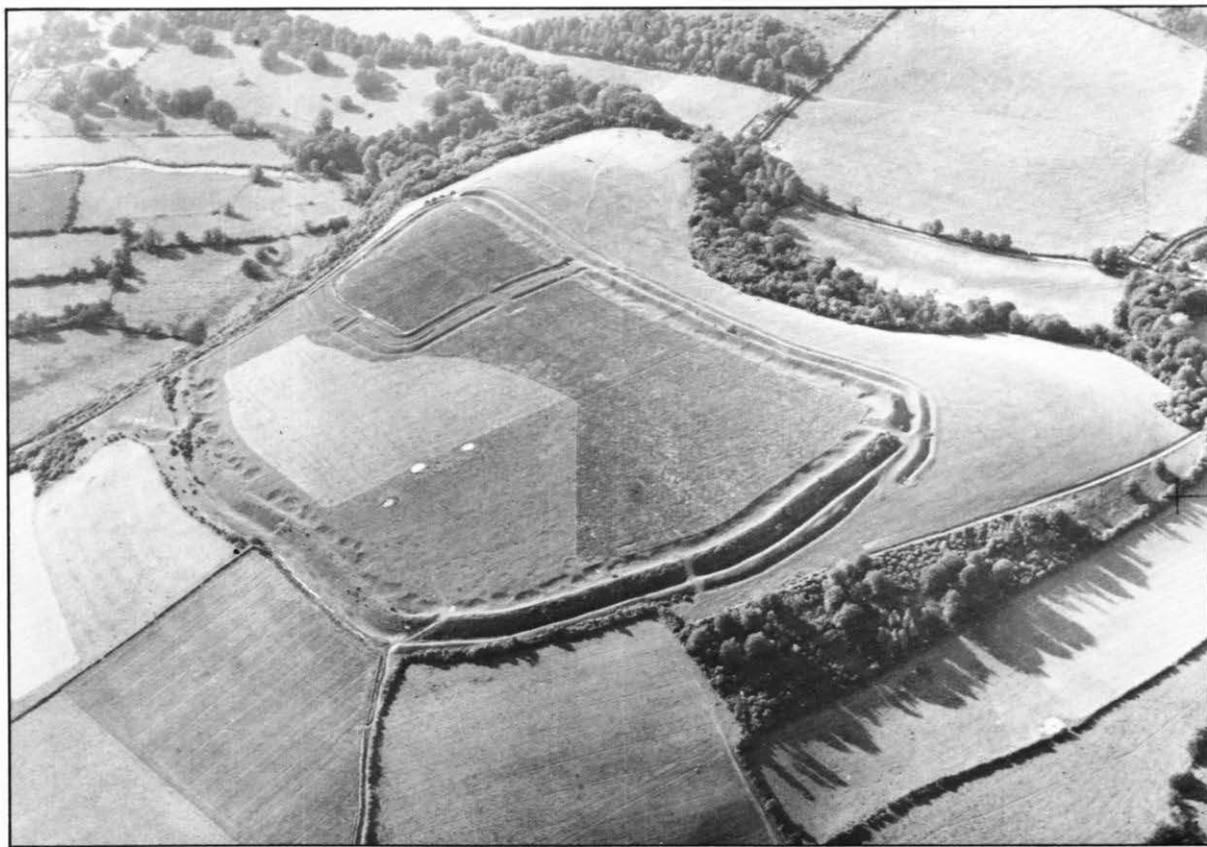


45. Types of rampart in Iron Age hillforts.

century B.C. In later forts, palisades were erected as a temporary defence which was either dismantled, or covered by the later ramparts as at Hembury in Devon. Timber uprights however, were extensively used to revet an earth rampart (Fig. 45): a row of large posts two to three metres apart held up a vertical face, either fronted with rough timber or with a stone infilling and set back from the edge of the ditch on a narrow berm, as at South Cadbury in Somerset.<sup>7</sup> In most early forts like Ivinghoe, Buckinghamshire, the rampart was revetted back and front. At South Cadbury, remains were found of the longitudinal timbers which were often used to strengthen the framework. They were also used to divide the interior of the rampart into a series of compartments into which soil or rubble from the ditch was packed, making for stability. These complicated timber-laced ramparts demanded much rough carpentry and a prodigal use of timber—only possible in a countryside that retained many patches of forest. The clearance would not only provide a better

view for the defenders, but increased land for agriculture.

The finished rampart—often called a ‘box-rampart’ (Fig. 45)—was in effect a wall on which the defenders stood to hurl spears and missiles using the force of gravity to out-range the attackers; its disadvantage was that if fired, the timbers acted like flues, as shown by intense burning found in the first rampart at Crickley Hill, Gloucester,<sup>8</sup> where the stone was reduced to clinker. Although the concept of the rampart as a wall persisted to a late date in areas such as Wales or the North where stone is the natural building material, in the Lowlands the timber-laced and box ramparts are characteristic of the first phase of the British Iron Age (7th–4th century B.C.). This is because fortification in Britain was not an insular development, but an introduction by immigrants from the contemporary Celtic civilisations in Europe. Parallels for these elaborate ramparts are to be found principally in West Germany, as at the Heuneburg on the Danube in the sixth century,



46. Hod Hill, Dorset. Iron Age hillfort, with a Roman fort inserted in one corner. Huts of the early settlement can be seen inside the entrance.

or in France and Switzerland at a correspondingly early date.<sup>9</sup> Here is a significant difference from the New Zealand evolution, which was an insular development and proceeded from the simple to the complex (p. 29). In Britain this sequence is reversed. The composite box ramparts were replaced during the middle and late Iron Age by the more easily constructed *glacis* or dump rampart, which avoided the need for a lot of timber, and the attendant fire risk (Fig. 45). The rampart now consisted of a heap of earth dug from a row of shallow quarries within the enclosure—the so-called ‘Quarry Ditch’, as at Hod Hill, Dorset (Fig. 46). The outer face was packed hard at an angle of thirty to forty degrees making a long and slippery slope continuous with the inner edge of the V-shaped ditch. Often the soil dug from the ditch was tipped downhill, forming a second rampart, a process that could be repeated if a second ditch was dug, when the fort became multivallate (Fig. 45). The complete defences

formed a close-set and formidable ring around a hilltop as seen at Maiden Castle or at Yarnbury, Wiltshire (Figs. 43, 48). Their function, as Mortimer Wheeler pointed out long ago,<sup>10</sup> was to check an uphill rush attack within the ninety metre range of a new weapon, the ribbon sling, which largely superseded the iron spearhead. Large stores of selected beach pebbles or baked clay pellets, both cheap forms of ammunition, bear witness to the use of the sling in the hillforts. The *glacis* ramparts are on a far larger scale than any earthwork built in New Zealand; measurements of ten to fifteen metres on the scarp are not uncommon, whilst at Maiden Castle it was twenty-four metres; many ramparts are from ten to twelve metres thick, which may be compared with the three to six metres typical of the *pa*.

The objective in Celtic hillforts was to build an impregnable perimeter and normally the defences completely enclose the settlement area (Fig. 48). True promontory forts (Fig. 44),



47. Hambledon, Dorset. Iron Age hillfort. House platforms can be seen inside the defences.



48. Yarnbury, Wiltshire. Iron Age hillfort, with an intrenched entrance screened by a hornwork.

defended only by transverse ditches, are rare except on the coasts: in end-spur inland sites such as Hembury, Devon, the ramparts were continued along the steep sides, although on a reduced scale.<sup>11</sup> On a ridge or hilltop, the defences were aligned to follow the contours as far as possible (Fig 47), in a manner that contrasts strongly with *pa* of Class II and III. The Maori concept of successive lines of defence culminating in a hilltop citadel is foreign to British Iron Age practice. When the lines of defence are spaced out, it is in order to make a series of concentric or dependent enclosures, apparently designed for stock keeping. The type is localised in southwest England and south Wales, both areas with a climate well suited to a predominantly pastoral economy.<sup>12</sup> Clovelly Dykes in north Devon is a classic example.

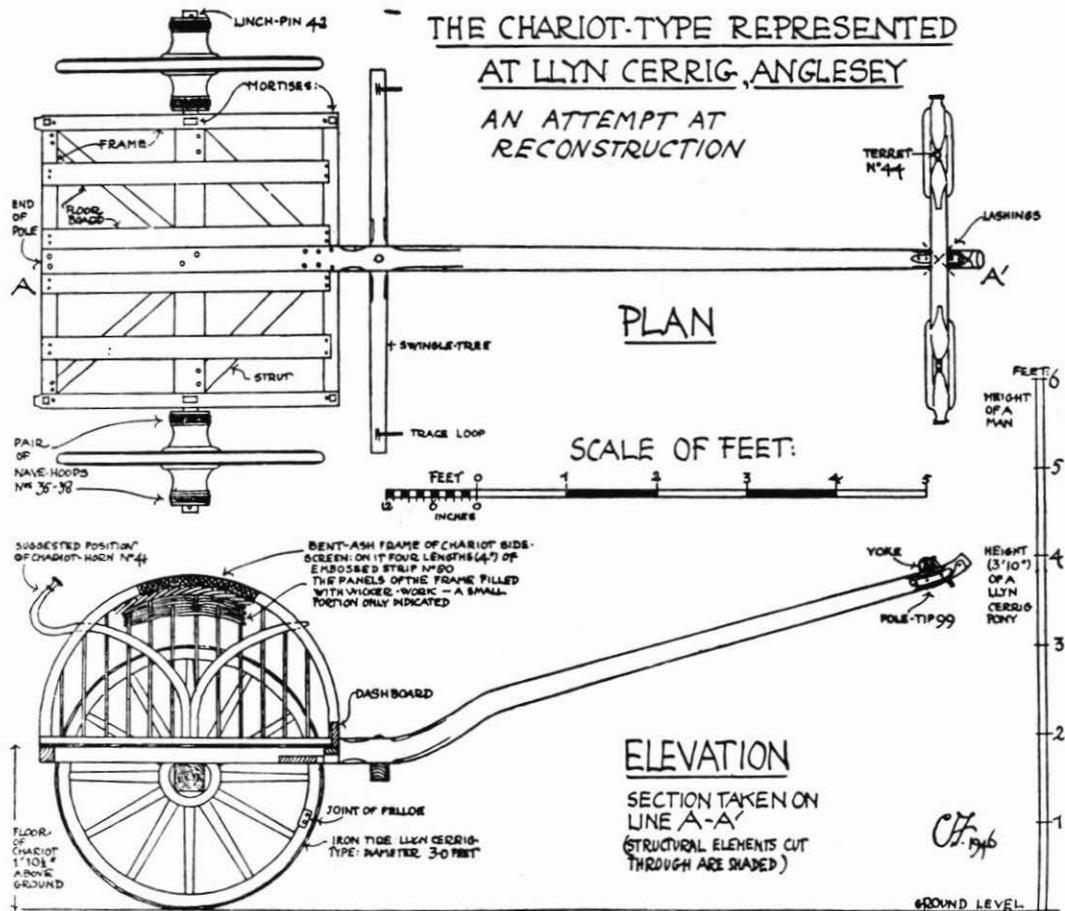
The weak points in the hillfort perimeter were the entrances, and consequently there was much ingenuity expended in their design. Normally the entrance is conspicuous, and is situated on the easy line of approach up the hillside. The gap in the rampart was two metres or more wide and was closed by a single or a double gate hung on timber uprights; the ditch was crossed on a broad causeway. From the middle Iron Age (3rd century B.C.) onwards, the ends of the ramparts are usually inturned,<sup>13</sup> creating a bottleneck in which the attackers were trapped in front of the heavy timber gates at the end of the passage and where they could be assailed from either side (Fig. 48). At some forts there were guardhouses built behind the gates at the end of the inturn, either in timber, as at Rainsborough in Northamptonshire, or in stone, as at Dinorben and other forts on the Welsh border.<sup>14</sup> Other devices were to overlap or offset the rampart ends, causing the attackers to turn and expose their sword arm as at Hod or Hambleton, Dorset (Figs. 46, 47), or to screen the entrance by one or more hornworks as at Crickley Hill, Gloucestershire,<sup>15</sup> or Yarnbury, Wiltshire (Fig. 48). This latter device would break a rush and compel the enemy to divide his forces. At Danebury, Hampshire, Cunliffe has shown that the principal hornwork carried a command post, equidistant between the inner and outer gate.<sup>16</sup> In the final phase at Maiden Castle the attacking force came under fire from slingers mounted on three towers or platforms at the east entrance, strategically placed to command the intricate

line of approach around the hornworks to the twin gates<sup>17</sup> (Fig. 43).

These devices contrast with the little that is known of entrances to *pa* which are often very difficult to detect. The way into a *pa* was through a narrow gap, about one metre wide, in the rampart or palisade from a path which crossed the uninterrupted ditch diagonally or in a zig-zag as at Pawhetau Point, Kawakawa Bay<sup>18</sup> (Fig. 15). At Aotea (Fig. 37) the entrance was at the end of a long narrow embanked track, whilst at Opotiki, Bay of Plenty, a sunken track led into the *pa*, which was screened by the rampart protruding at one side. Sometimes the ends of the palisade were overlapped as at Mangakaware swamp *pa*<sup>19</sup> leaving a narrow passage through which it was only just possible for a man to pass (Fig. 22).

These marked differences reflect the diversity in the way of life and the conventions of war in the two peoples. The Celts were stock-keepers and arable farmers; wide gates were needed to allow for the movement of cattle as well as supplies of grain from the fields. In addition they had animal transport and vehicles; wheel-ruts approximately one and a half metres apart have been detected in the entrances from time to time, as at Maiden Castle.<sup>20</sup> The provision of double gates at many forts indicates that the traffic was considerable and that a dual carriage-way was required. In war, the Celt relied on the chariot, a light two-wheeled car with iron tyres drawn by a pair of yoked ponies (Fig. 49), in which the warrior was driven to the battle by a charioteer. Julius Caesar wrote of the vast numbers (4000) he encountered in southeast England in 54 B.C., and of their harassing and terrifying qualities.<sup>21</sup> He described the feat of arms when the warrior ran along the pole and stood on the yoke to throw missiles as well as the more usual tactics when the warrior got down to fight on foot, with the charioteer waiting to make a quick getaway when required. A Celtic warband leaving a hillfort in chariots needed the wide gates and the solid causeway.

The elaborate layout of earthwork at the entrance is a response to the expected mode of attack; excavation has shown that attacks on hillforts were concentrated at the gates, where remains of human carnage have been found, as at Bredon Hill Gloucestershire,<sup>22</sup> or in Roman

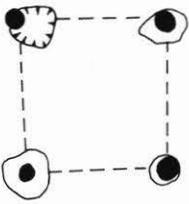


49. Reconstruction of the Celtic war chariot, Cyril Fox, 1946.

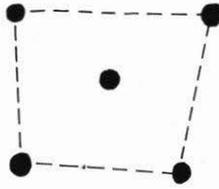
times at Maiden Castle and South Cadbury.<sup>23</sup> As in the case of Maori *pa* defended with transverse ditches (Class II), it can be deduced that there was a convention of frontal attack, in this case directed at the entrance, and that an attack on a weak point on the perimeter, like scaling the Heights of Abraham, was not expected. If it came, the defenders had the advantage of moving on interior lines; the two and a half kilometre perimeter at major forts like Hambleton or Maiden Castle were not designed to be continuously manned.

In contrast, the Maori had no domestic animals except a small dog and no means of transport: the war-band travelled on foot and in single file, for which the narrow exit from the *pa* was well suited. In an assault the attackers could be picked off singly as they approached the gate as Hongi told Marsden he could do at Waimate *pa* from a small secret corner where he could be concealed.<sup>24</sup>

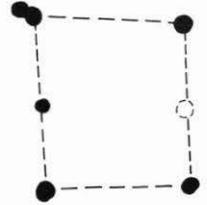
The interior of the hillfort must now be considered: provided that excavation has been on an adequate scale, or with favourable conditions for air-photography, as at Hambleton (Fig. 47), it can be shown that most hillforts were densely inhabited. The houses were of two kinds (Fig. 50): by far the most common is the round hut, varying in diameter from three to nine or even twelve metres, mostly built of timber, but in the north and west of stone. The timber construction varied slightly: usually the circle of wall posts were bedded separately with an infilling of woven wattlework, in others they were inserted in a continuous trench or slot, as at South Cadbury—where a lighter construction of close-set stakes in a shallow bedding trench was also used.<sup>25</sup> Turf might be used or *pisé*, a mixture of puddled clay and small stones, as at Hod Hill.<sup>26</sup> In small huts, the conical thatched roof was usually supported by a central post, but in larger huts it was



Croft Ambrey  
Hut F8

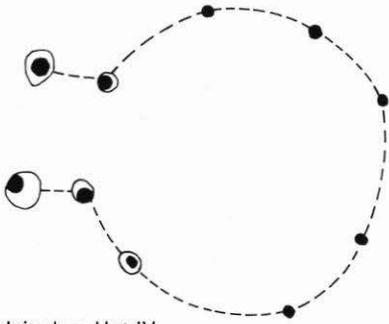
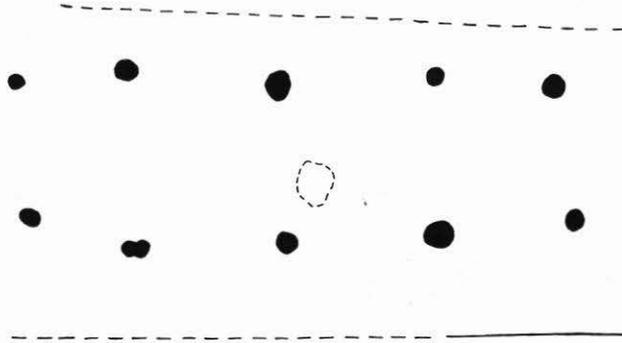


Ivinghoe  
Hut 11

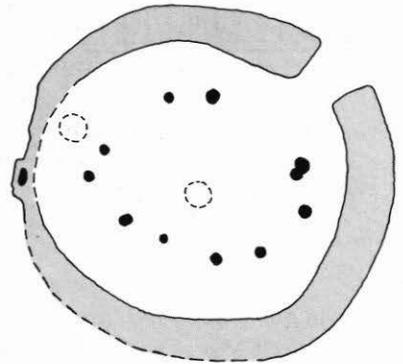


Cadbury  
Hut 14

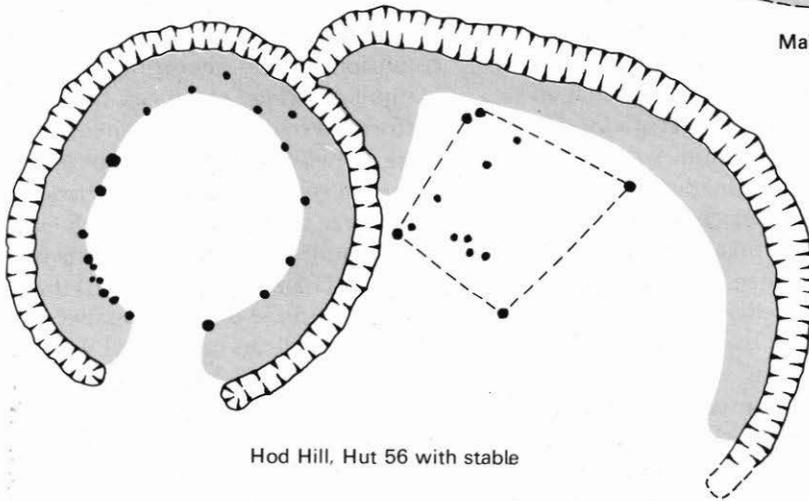
Crickley Hill  
Hut A1



Ivinghoe Hut IV

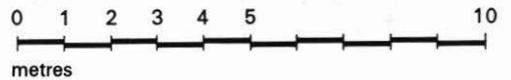


Maiden Castle Hut DB2



Hod Hill, Hut 56 with stable

50. Types of rectangular and circular houses in Iron Age hillforts.



carried on a ring of posts about a metre and a half from the wall, the rafters meeting at the apex where there was an opening to allow smoke from the hearth to escape. Some round huts had a porch protecting the open doorway from the weather. This type of circular building has a long history in Britain, being the usual form of dwelling during the Bronze Age; its persistence throughout the Iron Age in hillforts and open settlements alike, and in some districts continuing in the Roman period, argues for a basic continuity in the working population.

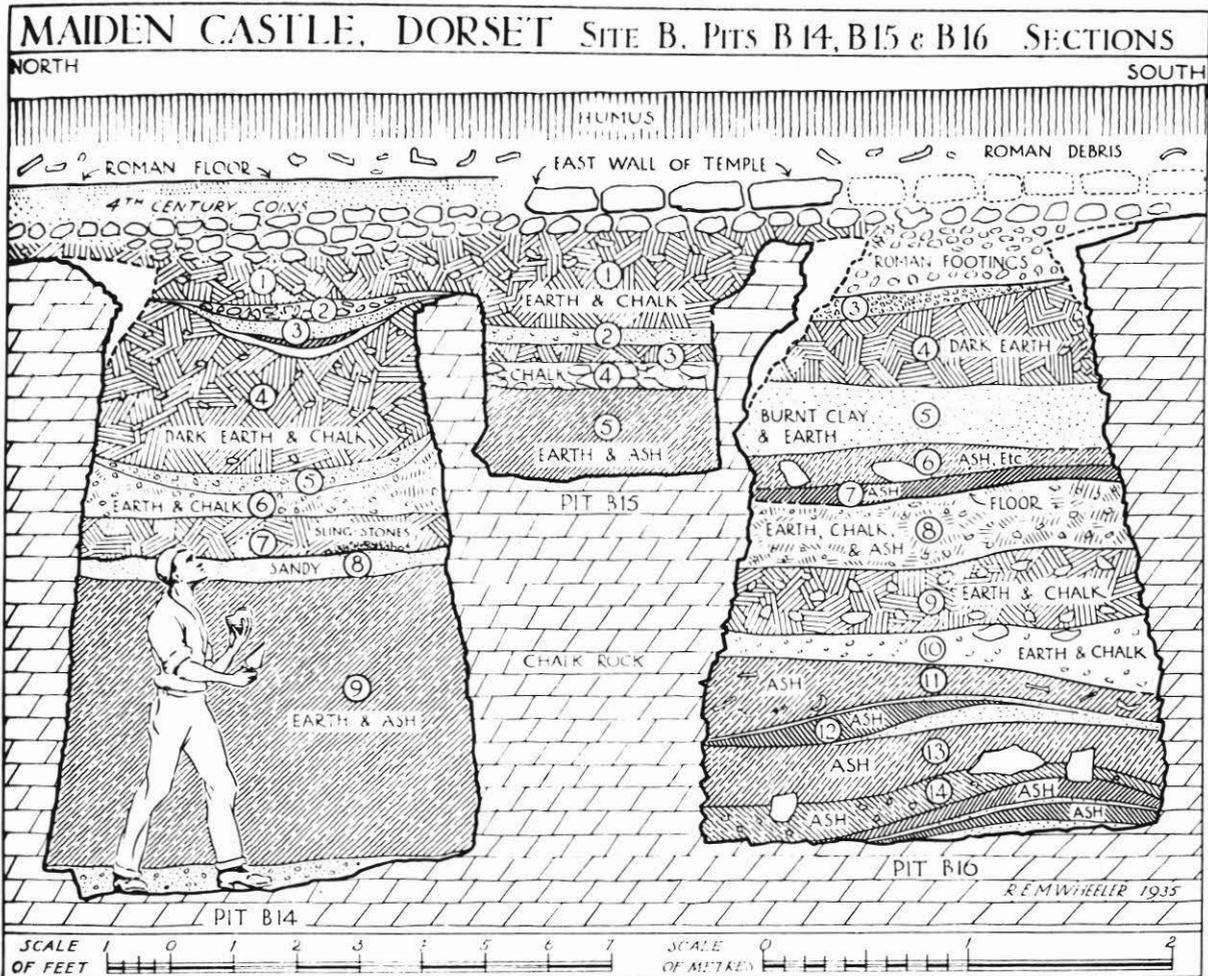
The other house type which has only recently been recognised in hillforts is rectangular (Fig. 50). These are mostly small squarish structures about three by four metres as at Croft Ambrey, Herefordshire<sup>27</sup> or Rainsborough, Northamptonshire.<sup>28</sup> Some have only four corner posts and perhaps were granaries and presumably were built like log cabins; others had three posts on each side. At Ivinghoe, Buckinghamshire, a centre post was found, implying a hipped roof construction.<sup>29</sup> An imposing series of long aisled houses have recently been excavated at Crickley Hill, a promontory fort on a Cotswold spur near Gloucester;<sup>30</sup> these have two interior rows of posts to carry the roof in cantilever style, with the floor extending about a metre and a half beyond the post-rows. The walls were assumed to be simple screens braced between the eaves and the ground. All these rectangular dwellings can be assigned to an early phase of the Iron Age, the majority being contemporary with the box and timber-laced ramparts and are, like them, an introduction from the continent. The square type is known from hillforts over a wide area from Yorkshire to Hampshire, the oblong and aisled types are at present limited to the Welsh border and southwest England. This dichotomy contrasts with the essential uniformity of the rectangular Maori house type distributed throughout New Zealand.

Turning to the domestic economy, cooking and the subsequent feasting took place inside the huts, judging by the hearths, broken potsherds and animal bones usually found on the floor. Water would have to be fetched from the nearest stream some distance away and often a hundred feet or more below the fort; little was necessary because the Celt, like the Maori, felt no need to wash or to wash-up. Occasionally as

at Maiden Castle, drainage channels were dug to convey rainwater into pits, which must have had a lining of skins.<sup>31</sup> It was however, essential to water the stock, so the ponies and the cattle must have been taken regularly to the stream.

The basic commodity was grain, principally spelt (*Triticum spelta*), bread wheat (*Triticum dicoccum*), and hulled barley (*Hordeum hexasticum*), and, like the Maori's supply of *kumara*, it was stored underground. The pits vary in shape and capacity; many were cylindrical and nearly two metres deep; when possible, as in soft chalk at Maiden Castle, the sides were undercut, in order to provide a wide base and narrow mouth which would be easy to cover with a flat lid (Fig. 51). Experiments have shown that to be effective the pits need a basketry lining and an airtight seal of clay for the lid: when this is achieved grain can be successfully kept in good condition through the winter for five or six months.<sup>32</sup> Alcock has calculated that the contents of an average sized pit at South Cadbury was about eighty bushels of threshed grain, less if stored in the husk, and that would be sufficient for a family group of eight persons for a year.<sup>33</sup> Like the Maori roofed storepits for *kumara*, the grain pits eventually became infected with mould and were filled up with rubbish. There are indications that pit storage was going out of fashion towards the end of the Iron Age, being replaced in some localities by more convenient storage-jars (*dolia*).<sup>34</sup>

Some industry is known to have been carried on in hillforts: evidence for the domestic crafts of spinning and weaving is widespread in the form of spindle whorls, clay loomweights and bone weaving-combs. The products were a variety of multicoloured woollen cloths (tweeds and tartans) for which the Celts were, and still are, famous.<sup>35</sup> This can be compared with the Maori industry of weaving and dyeing of flax fibres (*Phormium tenax*) to make the fine bordered cloaks or 'mats' worn by all. The production of fine metalwork in a hillfort is now attested by the discovery of furnaces and tools at South Cadbury,<sup>36</sup> which together with scrap metal including part of a decorated shield boss, show that the smith was making prestige goods for the warrior, to order, on the site. The Maori equivalent was the wood-carver who decorated the chief's weapons (*tewhatewha* and *taiaha*), but



51. Maiden Castle, Dorset. Section of a grain storage pit.

whose work unfortunately cannot so easily be deduced from the archaeological remains at the *pa*.

For religious practices, it is generally accepted that the sacred places (*Nimet*) of the Celts were natural features, a grove, a spring, or a lake, where offerings dedicated to the gods were placed and sacrifices were made, as for example the Druids' groves in Anglesey mentioned by Tacitus, with the lake of offerings nearby at Llyn Cerrig.<sup>37</sup> There are now indications that there were also cult centres associated with settlements, like the rectangular timber shrines at Heath Row, Middlesex, and at South Cadbury hillfort, where a small rectangular building with a portico was associated with animal sacrifices in pits.<sup>38</sup> Square hilltop temples built in a Romano-Celtic style are frequent in

the late Roman period in Britain, and it is now apparent that the siting of such cult centres is of Iron Age origin.

The study of the interior of British hillforts is still in its infancy. In general much less is visible on the ground than in a Maori *pa* since terracing for house sites was not often employed, whilst the complexity of excavated sites has often defied interpretation; even Wheeler regretfully gave up an attempt to provide period plans of the Iron Age occupation at Maiden Castle. However, some formal layouts can now be distinguished. At Crickley Hill the long aisled houses are aligned along both sides of a road leading to the fort entrance, all with their long axis parallel to the road.<sup>39</sup> At Creeden Hill and Croft Ambrey,<sup>40</sup> Herefordshire, the small rectangular houses excavated by C.S. Stanford

were aligned in rows along the contour of the hill in a manner 'approaching a grid-iron pattern' with only four and a half metres between the huts. Such planning was only possible in the early stages of the occupation when the site was clear; it provides evidence of strict control by an authority.

In contrast, the dense array of round huts which survive in the small unploughed sector of the fort at Hod Hill<sup>41</sup> (Fig. 46) appear crowded and haphazard, and indicate building and infilling over a long period of time. In the midst of the complex is a hut (No. 36) isolated in a rectangular palisaded compound, which Sir Ian Richmond identified as the chieftain's because of the concentrated fire of ballista bolts directed at it, at the time of the Roman attack in A.D. 44.<sup>42</sup> Other huts indicative of social stratification are those with curved annexes like Hut 56, within which there was room for a vehicle to be kept and indications of stabling for ponies (Fig. 50). Richmond plausibly related such dwellings as belonging to the warrior-charioteer. There are working-compounds and storage pits interspersed among the dwellings, but little sign of any systematic communal arrangements. It appears at Hod Hill, at South Cadbury, and at many other hillforts, that the storage of agricultural produce and its associated activities were organised by independent family groups. This contrasts with the Maori custom of block storage, zoned within the *pa* (p. 46).

Thus there are significant differences in detail between the Iron Age hillfort and the Maori *pa* in their final forms; as we have seen, these are differences in scale and methods of rampart and ditch construction, in the form and variety of entrances, in house and pit construction, as well as in the layout of the defences and the internal plans. These stem not only from the material differences in two cultures widely separated in time and space, but from differences in their history and their economies. The British forts were derived from the continent where the techniques of fortification had been long established, and therefore some traits were 'imported'. They were developed in a land where much of the suitable soils for grazing and cultivation had already been cleared by an abundant Bronze Age population so that a relatively few determined and better armed

newcomers could take over and dominate the land. It was these superior resources that account for the size and growth of the British hillfort. In contrast the Maori came from tropical Polynesia to a land that was uninhabited, without grazing animals, and virtually uncleared of forest, save for accidental burning. Crops and their cultivation had to be adapted to a temperate climate and when the population had increased and the necessity for fortification arose, the art had to be developed from scratch. It is surprising what was achieved in a relatively short period and that the end products were so similar.

It is obvious from the earthworks in both countries that time and labour was increasingly devoted to fortification and that this involved prestige, rather than just utility. The underlying reasons for this way of life must therefore be sought in society and in the values attached by both peoples to aggression and defence. These resemblances are brought out more clearly when the literary evidence is considered. For the Maori way of life there are the accounts of the late eighteenth and early nineteenth century explorers and the missionaries which have been drawn on throughout this book. For the Celts there are the classical writers, principally Diodorus Siculus, Strabo, and Julius Caesar,<sup>43</sup> historians or geographers, all writing in the late first century B.C. and early first century A.D. Their accounts, usually based on lost works of previous writers like Pytheas or Poseidonius, are primarily concerned with the Gauls, the Celtic people in France, and only to a limited extent with the Britons, but the general picture of Celtic society is applicable.

Like the Maori, Celtic society was organised on a tribal basis. Within the tribe there were three social orders, the warrior nobles, whom Caesar equated with the Roman 'knights' or *equites*, the priests known as Druids who not only presided over the sacrifices but were also judiciaries, and the common people (*plebs*), said to be of no account. There was also a king (*Rex*) who was the head of a tribal confederacy, like Cassivellaunus in Britain in Caesar's time. This corresponds fairly well with the Maori social divisions as described by Nicholas and others,<sup>44</sup> consisting of the *Ariki* or paramount chief like Hongi or Te Haupa, the many *rangatira* or warrior-chiefs, the *tohunga* or priests

and the 'cookees' and slaves, also of no account. One difference is the position of women: in Celtic society they could be recognised as leaders like Boudicca of the Iceni, or Cartmandua, ruler of the Brigantes in the mid first century A.D., but in Maori society they were regarded as inferior, only suited for toil and menial duties, and did not aspire to power. Even today it is rare for a woman to speak on the *marae*.

Both societies then were hierarchical and tribal and whilst the Celtic overlord or the Maori *Ariki* sometimes was a venerated elder statesman, pride of place was given to the active warrior-chief. The priest also exerted much political influence, the Druid by his divinations and settling of disputes, the *tohunga* by his declaration of *tapu*, which as Nicholas shrewdly observed, 'served as the only security for the protection of persons and property in the absence of a code of law'.<sup>45</sup> Personal bravery coupled with a certain wiliness were the qualities esteemed in the chief, as shown by the deeds of leaders like Commius of the Atrebates or Hongi of the Ngapuhi. Warfare was the occasion when such qualities could best be exhibited and it is clear from the written sources that this was endemic in both Celtic and Maori society. Ostensible motives were revenge (*utu*) for previous injuries, real or imagined, or simple aggression against a weaker neighbour, like Cassivellaunus' attack on the Trinovantes in Essex. Treachery, when successful was deemed a virtue: both societies have tales of luring the enemy to a feast, at which he was attacked.

The prestige of the warrior was enhanced by single combats which are recorded for both peoples as preceding a battle. Diodorus noted that when the challenge was accepted, the warrior sang of the valiant deeds of his ancestors, boasted of his high achievements and reviled and belittled his opponent.<sup>46</sup> The Celtic chief fought with iron weapons: a spear, usually hurled from the chariot, and a long sword: he defended himself with a wooden shield with bronze mountings and a helmet, both often elaborately decorated with curvilinear patterns and animal symbols characteristic of Celtic art. Diodorus records that some went naked into battle. The Maori fought with long wooden spears and with the *tewhatewha* and the *taiaha*—used in the manner of the medieval quarter-

staves, as well as with the stone *patu*, used for a knockout blow. He had no defensive equipment and fought naked apart from his loin belt. The weapons were carved with the intricate patterns of the native art, and like the Celtic panoply, reflect the social importance of the warrior.

Both peoples practised headhunting, a rite that horrified the classical writers and the Europeans. Diodorus describes how 'when their enemies fall, they [the Celts] cut off their heads and fasten them to the necks of their horses . . . and carry them off as booty and these first fruits of battle they fasten by nails upon their houses . . . The heads of their most distinguished enemies they embalm in cedar oil and carefully preserve in a chest and these they exhibit to strangers.'<sup>47</sup> They were highly valued and their owners refused to part with them even for their weight in gold. Enemy heads were also fastened up on the gate to a hillfort, as Wheeler found at Stanwick in Yorkshire, or were placed in niches in an open-air shrine as at Roquepertuse in Provence. The severed head, as Anne Ross has stressed,<sup>48</sup> became a cult object in the Celtic world.

The Maori differentiated between the heads of friend and foe; the tattooed head of a fallen chieftain would be brought home after the battle and preserved by drying and smoking, and the rite was extended to other individuals including women. These heads were venerated and could be shown to strangers, as Marsden records at Rangihoua, where he was shown the head of the chief's sister-in-law kept in a wooden box.<sup>49</sup> An enemy's head was removed from the body before this was cooked and eaten, and was treated with insolence and contempt;<sup>50</sup> Marsden saw four heads of chiefs set up on poles at one of the houses at Rangihoua, and the heads also were thrown into a pile and stoned.<sup>51</sup> Nevertheless the underlying concept is similar; the head is conceived as a symbol of the whole man, the seat of his prowess and strength and by cherishing it or by degrading it the owner acquires its virtue or *mana*. The same belief applies to the Maori habit of cannibalism with the benefits enjoyed by the whole tribe; not only did the victors enjoy a high protein meal but they were acquiring *mana* in the process.<sup>52</sup>

It was inevitable in societies where such rites and ideas were prevalent that settlements were

fortified. The prestige of the tribal chief was bound up with his capacity to defend his people in their homes as well as to lead a warband against a neighbour. The similarities that have been noted between the *pa* in New Zealand and the hillforts in Britain are not just a coincidence; the fortifications are products of two people with similar social values, in which success in warfare and its corollary, defence, were paramount.

#### Notes

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## Abbreviations:

J.P.S. Journal of the Polynesian Society  
P.P.S. Proceedings of the Prehistoric Society  
N.Z.A.A. Newsletter New Zealand  
Archaeological Association Newsletter

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# Glossary of Maori terms

- Ariki* paramount chief.  
*Atua* spirit or god.  
*Haka* fierce dance with chant.  
*Hapu* sub-tribe, a kin-group.  
*Hangi* earth oven, using hot stones.  
*Kumara* sweet potato (*Ipomoea batatas*).  
*Mana* spiritual power, honour, prestige.  
*Marae* open air place of assembly.  
*Noa* common, the reverse of *tapu*.  
*Pa* fortified settlement, a hillfort.  
*Pataka* storehouse.  
*Patu* short war club of stone, bone, or wood.  
*Rangatira* chief, head of a kin-group.  
*Raupo* bullrush (*Typha orientalis*).  
*Rou* contrivance for toppling a palisade.  
*Rua* circular underground storage pit.  
*Taiaha* two-handed long wooden club.  
*Tangi* funeral lament.  
*Tapu* sacred, forbidden.  
*Taro* a root vegetable (*Colocasia antiquorum*).  
*Taua* war band.  
*Tekoteko* carved figure on a roof top.  
*Tewhatewha* two-handed long wooden club.  
*Tihi* summit platform in a *pa*  
*Tiki* carved anthropomorphic image, often worn as a pendant (*hei tiki*).  
*Tohunga* priest.  
*Utu* revenge.  
*Waihitapu* sacred place.  
*Whanau* extended family.

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