



NEW ZEALAND
ARCHAEOLOGICAL
ASSOCIATION

**NEW ZEALAND ARCHAEOLOGICAL ASSOCIATION MONOGRAPH 13:
Nigel Prickett (ed.), *The First Thousand Years: Regional Perspectives in
New Zealand Archaeology***



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THE FIRST THOUSAND YEARS

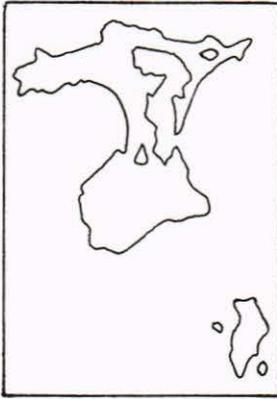
Regional Perspectives in New Zealand Archaeology

Edited by Nigel Prickett



THE CHATHAM ISLANDS

Douglas Sutton



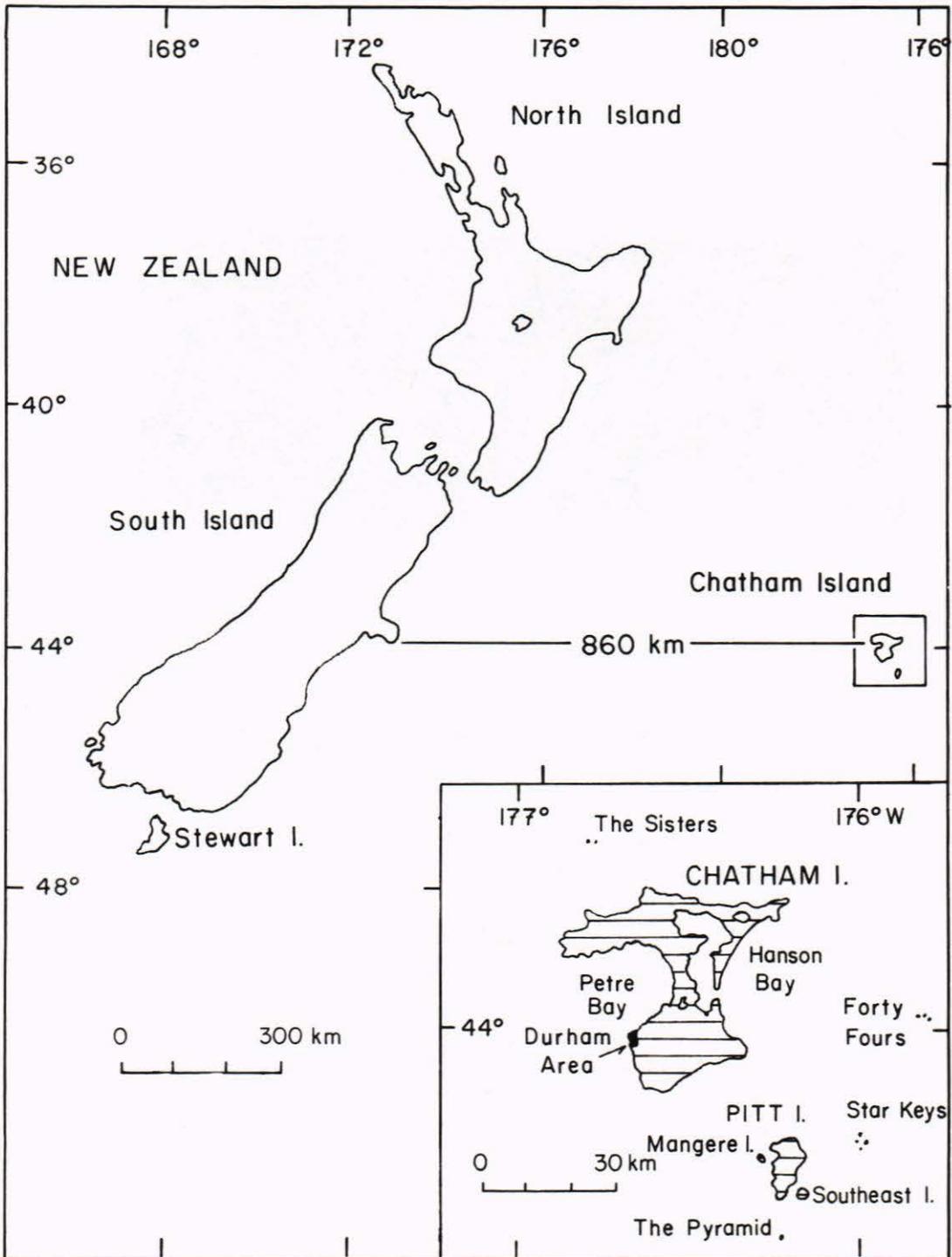
The Chatham Islands are located almost 900 km east of Banks Peninsula (Fig.10.1). Chatham and Pitt Islands have a total surface area of approximately 100,000 ha. There are over twenty small off-shore islands and reefs, several of which are noted for the uncommon and, in some cases, endangered bird species which live on these natural sanctuaries. The islands are low and damp. The northern and central regions of Chatham Islands are low, rolling and peat-covered schist and limestone country respectively with numerous lakes and a large lagoon, known as Te Whanga (Fig.10.2). Two diverging lines of small volcanic peaks punctuate the western half of the schist area. The southern block of Chatham Island comprises a north-sloping table-

land which is dissected by several small creeks and heavily peat-covered. Its southern boundary is formed by high cliffs with a few kilometres of coastal terrace on both the eastern and western sides between the cliffs and the limestone country. Pitt Island is a northward-dipping dissected plateau with major valleys running north and east out of the interior. The east coast was until recently covered with dense broadleaf forest. Pitt richly deserves its reputation as the most beautiful island in the group.

The Chatham Islands climate is dominated by features which result from location in the zones of subtropical convergence and west wind drift (Fig.10.3). The convergence is formed as the warm and saline waters of the East Cape current meet the colder and less saline body of the Southland current along an irregular line stretching from 150 km off Banks Peninsula out to the Chathams.

The west wind drift affects latitudes 40-60° south and the islands are therefore within the normal path of anticyclonic fronts as they travel north-west between the subantarctic high pressure and tropical low pressure belts.¹ The subtropical convergence moves through a 5° latitudinal range from about 42° south in November/December to 47° south in May/June. Accordingly, surface waters around the islands are at 11-12°C in winter and 14-15°C in the summer.² In a similar manner, depressions cross the archipelago most frequently in winter while high pressure systems, with calmer conditions and warmer air temperatures, are most common from October to April.

The result is a climate characterised by moderate temperatures, windy conditions, low sunshine hours due to cloud cover associated with the convergence, and high humidity. There is usually only one frost per annum and in the 46 years prior to 1962 the temperature did not rise above 76°F or fall below 28°F.³ Winds are almost incessant and changes of direction occur frequently, although gales are uncommon.⁴ Changes from summer to winter in wind speed and direction



10.1 New Zealand and the Chatham Islands.

involve a shift to generally windier conditions and the increased importance of the south-west quarter. Relative humidity on most summer days is above 80 percent.

The people who first landed on the Chathams could not grow any traditional Polynesian cultigens there due to the overcast and temperate climate. They therefore lived on the indigenous food resources of the islands. Most of the available food occurred either in the sea or along the shores.



10.2 View south-west over karaka forest at Taia, north-east of Te Whanga Lagoon; coastal dunes at left. (D. Simmons).

Terrestrial resources occurred within three major plant associations:⁵ shore-line vegetation which ranged from tall annuals to saltmarsh turf and scattered shrubs; heath and bogland vegetation, which covered large areas north and east of Te Whanga and included reed-like plants and low shrubs on the southern tableland, or bracken; and forest of three different types. The first covered the lowlands of the northern and middle regions of Chatham and much of Pitt Island, especially the east coast. It included tree coprosma,⁶ tree myrsine, scattered nikau palms, karaka (or kopi) trees and ribbonwood in some areas, with akeake trees in exposed situations, particularly on the forest edge.

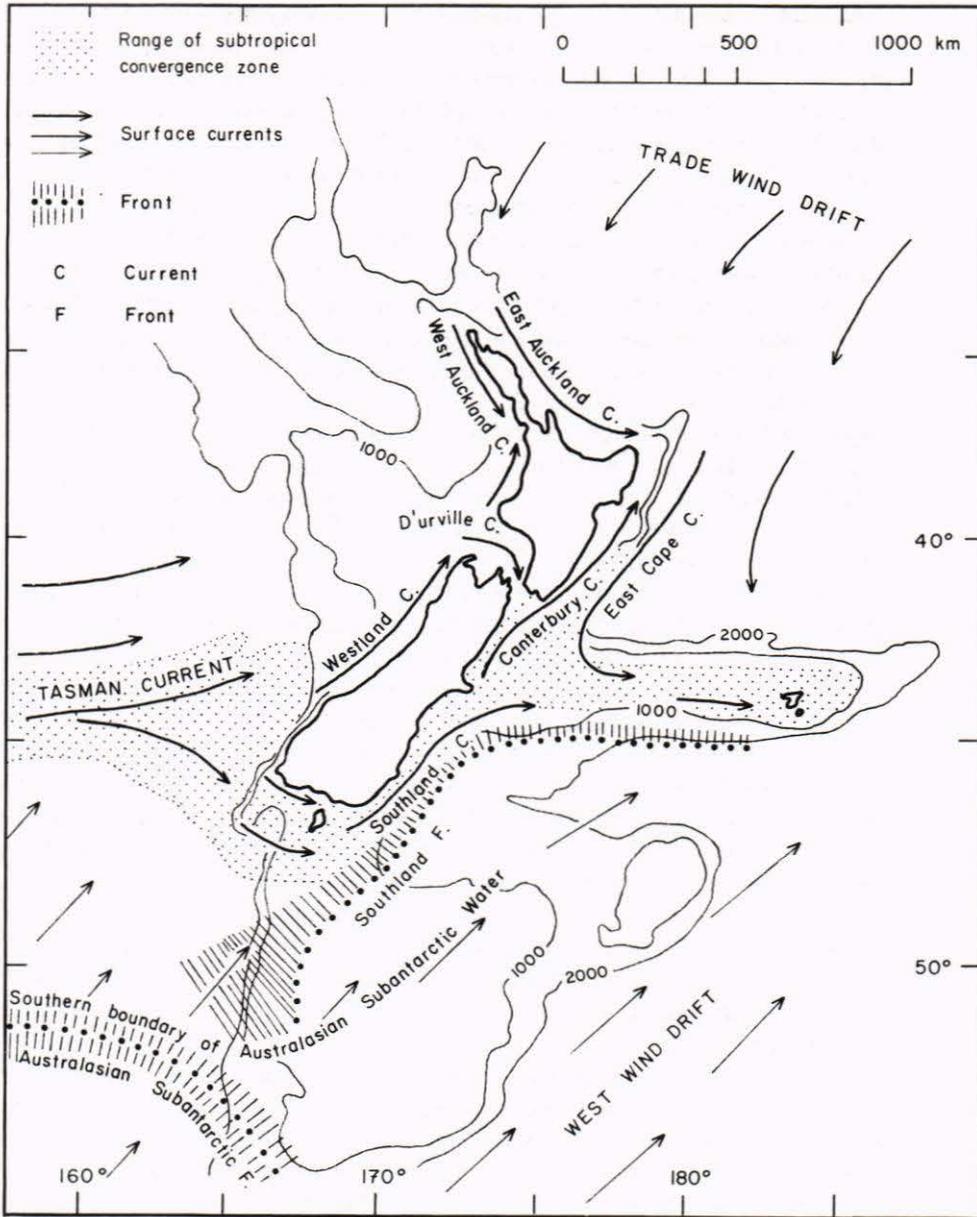
A low mixed broadleaf forest stood in gullies and on the lower slopes of the southern tableland. The distinctive species included were two tree ferns, lancewood, tarahinau or turpentine tree and a tree senecio. Tree myrsine and tree coprosma were abundant within this association and akeake was common along the forest margins.

The third and final forest type was the tarahinau forest which covered much of the southern tableland. It contained few species other than tarahinau, with an understorey of tree ferns.

Edible plants occurred in each of these major plant associations,⁷ but most of them were small and fibrous. The best plant foods were karaka kernels, 3 or 4 small berries, nikau buds and the common bracken rhizome.

At least 50 land bird species were present.⁸ They were found in four habitats; the coastal strip, wetland areas, the forest edge and bog shrublands, and the broadleaf forest. The tarahinau forest supported very few birds. The heaviest and most easily taken species, such as the native pigeon, the bellbird and the tui, were concentrated in the broadleaf forest, occurring less frequently in stands of mixed broadleaf forest where edible berries and epiphytes were less numerous. Rails were found in the bog shrublands and along the forest edge. Ducks were plentiful in the large wetland areas, including the lakes and Te Whanga where they could be taken quite easily during the moulting season. Finally, apart from the colonial shags, only light and dispersed birds of a small number of species lived along the shore.

The only land mammal present apart from man was the Polynesian rat,



10.3 Atmospheric and oceanic convergence at the Chatham Islands (after Knox, 1975, p. 358).

probably found most commonly in the broadleaf forest, especially in autumn. Prehistoric dog bone has never been identified from the Chathams, suggesting that dog was absent for most of the sequence. Nine species of freshwater fish were present and there is historical evidence showing that the eels were heavily exploited.⁹ The smaller species such as kokopu, inanga, and the red-finned bully may also have been taken.¹⁰

In the absence of horticulture, terrestrial food resources were limited to small to medium sized birds, the Polynesian rat, some fresh water fishes and a group of natural plant foods which were small and fibrous.

Marine-based resources, on the other hand, were relatively diverse, abundant and resilient under predation. In effect they were inexhaustible; although individual breeding colonies might be exterminated, the elimination of whole species during the prehistoric period is most unlikely.

At least 16 species of flying oceanic birds and penguins went ashore on the Chathams to breed and/or to moult.¹¹ The islands were 'probably . . . the most important breeding station for petrels in the world at the time of their first human occupation.'¹² These birds could be exploited most economically in the latter part of their short breeding seasons when the fledglings might be taken in large numbers. Historical records show that the adults were seldom taken, at least in Tasmanian and southern Maori muttonbirding.¹³ Oceanic birds were available at all seasons of the year but potentially important concentrations of supply occurred in winter and summer. The latter period, November-February, included the breeding seasons of two prions, the southern diving petrel and the Chatham Island taiko. These species were available in most areas of Chatham and Pitt Islands. However, the albatross bred only on offshore islands; the Sisters, Forty-Fours, and the Pyramid (Fig.10.1). The chicks are at their best in August-September when a pre-flight royal albatross can weight 10-15 kg. Access to them, however, involved long and dangerous open sea voyages.

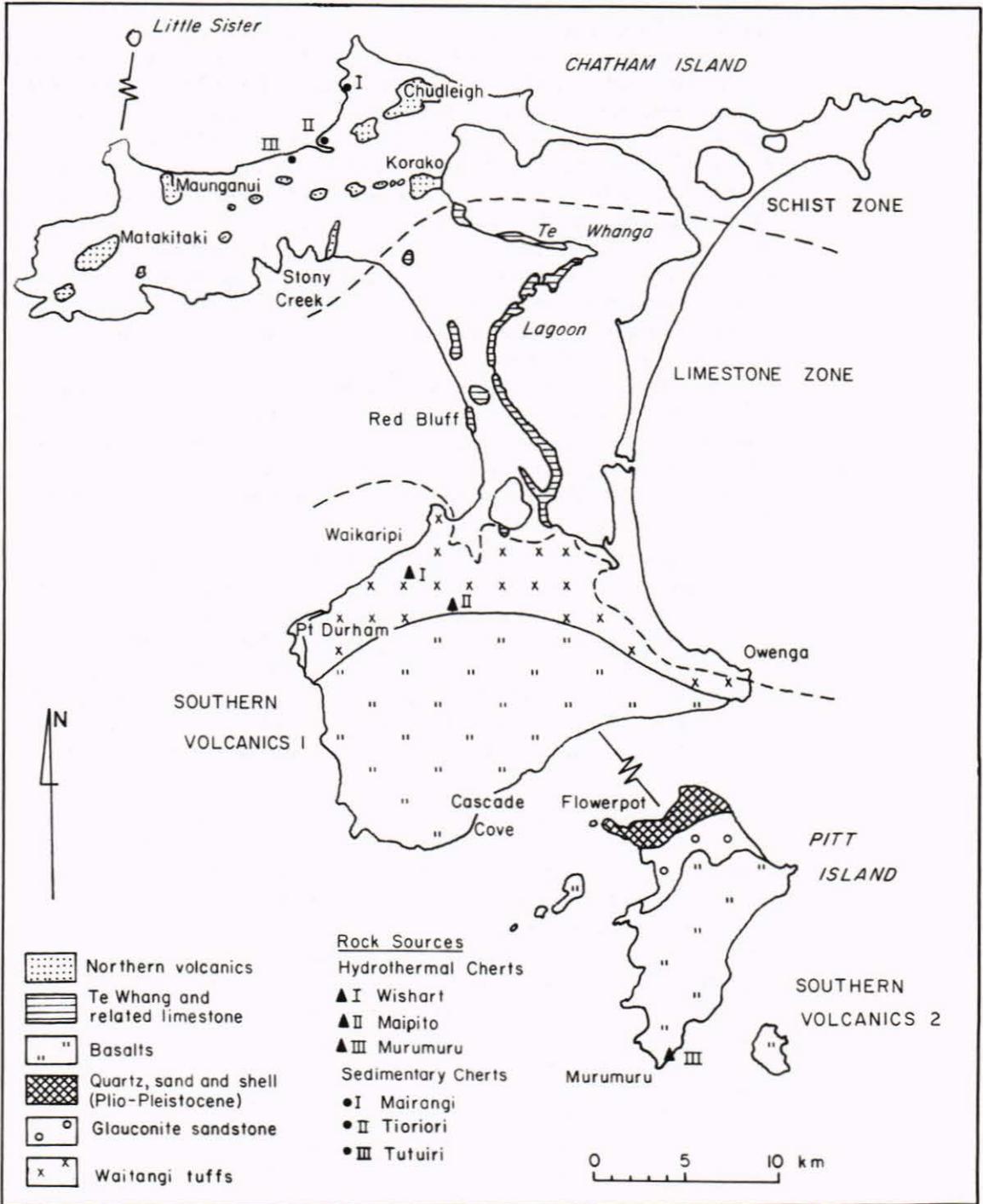
Marine mammals are still relatively common around the Chathams. Seventeen species are known from the area and a further 13 are judged likely to be present, at least intermittently.¹⁴ Some are huge, like the sperm whale, some are present all year round, while others just pass by during their migrations. Some species, particularly the blackfish, strand quite frequently and were therefore an unpredictable but welcome food resource in the past, as were the leopard seal, sea lion and elephant seal whenever they hauled out within sight of people. The most numerous marine mammal in the Chathams was the New Zealand fur seal. Many thousands were slaughtered for skins between about 1805 and 1840¹⁵ and no reliable estimate of their prehistoric population size is available. However, it is most likely that fur seal breeding colonies were common on the shores of both main islands and on the offshore islets where a greatly reduced population still lives away from human harassment.¹⁶ Normal seasonal changes in the size age/sex composition of seal populations have been reconstructed by Smith¹⁷ who notes that the number of seals present at the rookeries never went below 30 percent of the annual maximum population. This made the large and stationary seals the most reliable and easily killed, economic resource available in the Chatham Islands.

The quality of present-day line fishing in the Chathams is well known.¹⁸ Although there are relatively few species present¹⁹ by comparison with reef and lagoon ecosystems in the tropics, numbers per species are very high. Concentrations of fish are known to exist in offshore cod and groper 'grounds' and within 100 m of the shore and 10-20 m of the surface. Parrot fish, greenbone, moki, blue cod and hapuku are amongst the major fish species present. Shellfish, kelps, seaweed, echinoderms and crustacea, the best known of which is the Chatham Island crayfish,²⁰ are even now easily accessible in many areas.

Marine foods were much more abundant and reliable than land resources in the Chatham Islands prior to the introduction of European domesticated plants and animals. Marine resources formed a diverse and stable potential economic base for human occupation of the islands. Terrestrial resources on the other hand were limited in number, size and availability.

The first people to settle the islands must have searched for workable stone soon after their arrival. They found usable materials of varying quality throughout the islands (Fig.10.4). A total of six workable cherts have been identified by Campbell.²¹ Other materials which were used in the prehistoric period are a rhyodacite from the southern end of Pitt Island, dolomitic limestone from Cascade Cove, a tough chert found in small nodules over most of the exposed rock surfaces in the northern half of Chatham Island, and crystalline volcanic materials known from two areas on Pitt Island, the Owenga area, several locations

on the south-west coast of Chatham Island and one place (Stony Creek) in the north-west. Obsidian flakes have been found in several locations on Pitt and Chatham Islands but no primary source has yet been found in the archipelago.²² The obsidian is apparently all from one source, most common in the oldest sites and effectively absent from sites which have been dated to the 16th century and later. This suggests importation of obsidian by the first settlers or some who came soon after and then interruption of supply.



10.4 Geology of the Chatham Islands (after Sutton and Campbell, 1981, Figure 14:2).

Who were the Chatham Islanders?

The native people of the Chatham Islands, referred to as the Moriori,²³ were seen only briefly by a very few recorders before they died out. This did not, however, limit the range of scholarly and other speculations offered about the origins of this group of people. The Moriori were obviously different from the Maori people in northern New Zealand. They lacked fortifications and even villages. There were no canoes of the types seen by Cook and the other early observers in New Zealand. Tattooing was not practised and the Moriori wore few personal ornaments. They carried no fine artefacts, and were poorly or scantily dressed.²⁴ These differences, combined with certain racist attitudes to the differences between Polynesian and Melanesian people,²⁵ led to the development by Smith and Best²⁶ of what Simmons has called the *Great New Zealand Myth*.²⁷

This remarkable fabrication can be reduced to four propositions. These are that: (i) the first occupants of New Zealand were either Melanesian or of mixed Melanesian-Polynesian origins; that is they were racially distinct from latter settlers arriving from Hawaiki; (ii) they were also distinguishable from the Polynesians on the basis of language, their lack of horticulture, nomadic lifestyle and peacefulness; (iii) some of these people were forced to flee to the Chatham Islands by the more assertive Polynesians who first arrived with the navigators Kupe and Toi and then in larger numbers in the 'Great Fleet' of 1350 A.D.; and (iv) the descendents of these refugees maintained a simple, nomadic lifestyle until European discovery of the Chathams.

These propositions are no longer tenable. First, there is no evidence from either historical linguistics or physical anthropology to indicate that the first settlers of New Zealand or the Chatham Islands were other than Polynesian.²⁸ Second, the aboriginal people of the Chatham Islands were not refugees fleeing an invasion of New Zealand by Polynesians, because this external military force did not exist. Mead has stated,

'In his examination of the reliability of the sources used by Smith, Simmons (1969:25) came to the conclusion that there never was a navigator named Toi who arrived in New Zealand about 1150 A.D. Nor was there a traditional charter to support a Melanesian migration, . . . Moreover, there is considerable doubt that a great migration of canoes from Polynesia even arrived about 1350 A.D. Simmons' studies show that the largest number of canoes which could ever have sailed together and probably from a Hawaiki no further away than the North Island of New Zealand was two — the Arawa and Takitimu.'²⁹

Finally, the papers in this volume show that prehistoric culture in New Zealand was not uniform from region to region and that rather than being static, it changed radically both before and after A.D. 1350, with no evidence that invasion and population replacement occurred at that time.

While it can now be dismissed, the above myth of the Moriori was commonly accepted when the first archaeological investigation of the Chatham Islands was undertaken. This pioneer research was to be the basis of a critical examination of the view 'supported by the weighty authority of Percy Smith', that the Moriori were 'representative of the earliest ethnic wave into New Zealand'.³⁰ In 1919, H. D. Skinner went to Lyttleton from Dunedin to board ship for the Chathams. When he found out that the ship was fully booked, Skinner and a friend, ' . . . slipped unobserved down onto the coal in the forward hold, where, fortified by some meat pies secured at a neighbouring pastry cook's, we remained until the "Ngahere" was well on her way and the coast of New Zealand was fading into darkness astern.'³¹

Skinner systematically compared carvings, many portable artefact types, and languages from New Zealand and the Chathams.³² He included in his study the

results of several early and thorough comparative studies of Oceanic human skeletal material.³³ His conclusion was a strong rebuttal of Smith's view. Skinner came to believe that the ancestors of the Moriori were from New Zealand and that their relationship was closest with his southern culture area, or 'Murihiku'.³⁴

Recent archaeological field work

Christina Jefferson recorded tree carvings in the Chathams in the late 'forties.³⁵ Her work was continued by Simmons in the period 1962-1964.³⁶ Simmons organised a small expedition from the Otago Museum which concentrated on recording the rapidly disappearing tree carvings, but also worked on some of the rock art, recorded sites at locations around Chatham Island and on Pitt, and did small excavations at Taia, Moreroa, and Waihi. Simmons' tentative conclusion about the nature of Moriori settlement patterns was that 'There appears to have been hunting and fishing activity along the coast in summer, centred on the occurrence of blackfish, seal or large fish, and a complementary more permanent settlement along the lagoon shore in winter.'³⁷

Rhys Richards was the next and only other person to publish major primary archaeological evidence on the Chatham Islands prior to 1973. In 1962 he completed an historical geography of the islands and later published a reconstruction of Moriori population distribution as it was about A.D. 1790 (see Fig.10.12).³⁸ This showed the spatial distribution and size of settlements and concluded with the view that 'Unlike the warring tribes with strongly defended villages which were prevalent through Polynesia, these "Moriori" lived together in winter and spent the summer in small fishing groups or wandering food gatherers.'³⁹

A more substantial project of research in the Chatham Islands was begun in 1973. Archaeologists from Otago University had as an overall objective to reconstruct and explain Polynesian cultural adaptation to a small and very isolated subantarctic island ecosystem. The project comprised three phases of research: extensive site surveys, exploratory excavations and intensive investigation of Durham area on the south-west coast of Chatham Island (see Fig.10.1).⁴⁰ The results are presented here in two parts. The first is a summary of the sequence of prehistoric culture change which occurred in the islands. The second is a tentative explanation of that change.

The early period

The available evidence indicates that the Chatham Islands have been settled for about the same period as New Zealand; that its initial settlement occurred within the interval A.D. 800-1000.⁴¹ The first landfall was made by Archaic East Polynesians from New Zealand, presumably as the result of an accidental drift voyage during a period of rapid expansion down the east coast of New Zealand and of relatively frequent longshore voyaging. Secondary settlement of the Chathams may have occurred, but only in the interval prior to about A.D. 1400, and even then arrivals were solely from New Zealand and were very infrequent. The islands became a closed system after that date because a climatic deterioration, known as the Little Ice Age,⁴² worsened sea conditions and therefore effectively distanced the Chathams even further from New Zealand.

The number of people who arrived in the first, and possibly only, voyage is not known. However, if there was only one canoe involved, as is likely in an accidental drift voyage, there were probably fewer than 50 people aboard. At present it is not possible to establish which region of New Zealand they came from. It appears that this small founding population grew rapidly and divided into subgroups after arrival. Sites containing Archaic artefacts have been found at a number of sheltered creek mouth and harbour situations on the east coast of Chatham and Pitt Islands. These were large sites, at least by Chathams standards, which were

apparently internally organised into different activity areas and included human burials, at least some of which were interred with rich grave goods. Although none of these sites has been systematically excavated to date, site size, locations and contents suggest year-round occupation and the maintenance of sizeable canoes.

The material culture of the Archaic phase is known only from artefacts which were either fossicked or collected off the surface. It does, however, include all the ornament forms found at Wairau Bar.⁴³

The Archaic adze kit includes Duff types 1, 2, 3, 4 and 6. It is best represented in an unpublished private collection on Pitt Island which includes 60 of the 70 pieces of obsidian known from the Chathams, a chisel in argillite from the Nelson mineral belt in New Zealand and both triangular and rectangular-sectioned large adzes.

Stone resources were transported over considerable distances in the Archaic phase. This is evident from material found in the Tupurangi River mouth site and the Waipaua River mouth site, both on Pitt Island.⁴⁴ There are several large worked boulders of Takatika grit on the site at Tupurangi. They have been transported 55 km from the north-west of Chatham Island. There are also Cascade dolomite adzes and flakes of Wishart chert present, representing voyages across Pitt Strait during the Archaic phase.

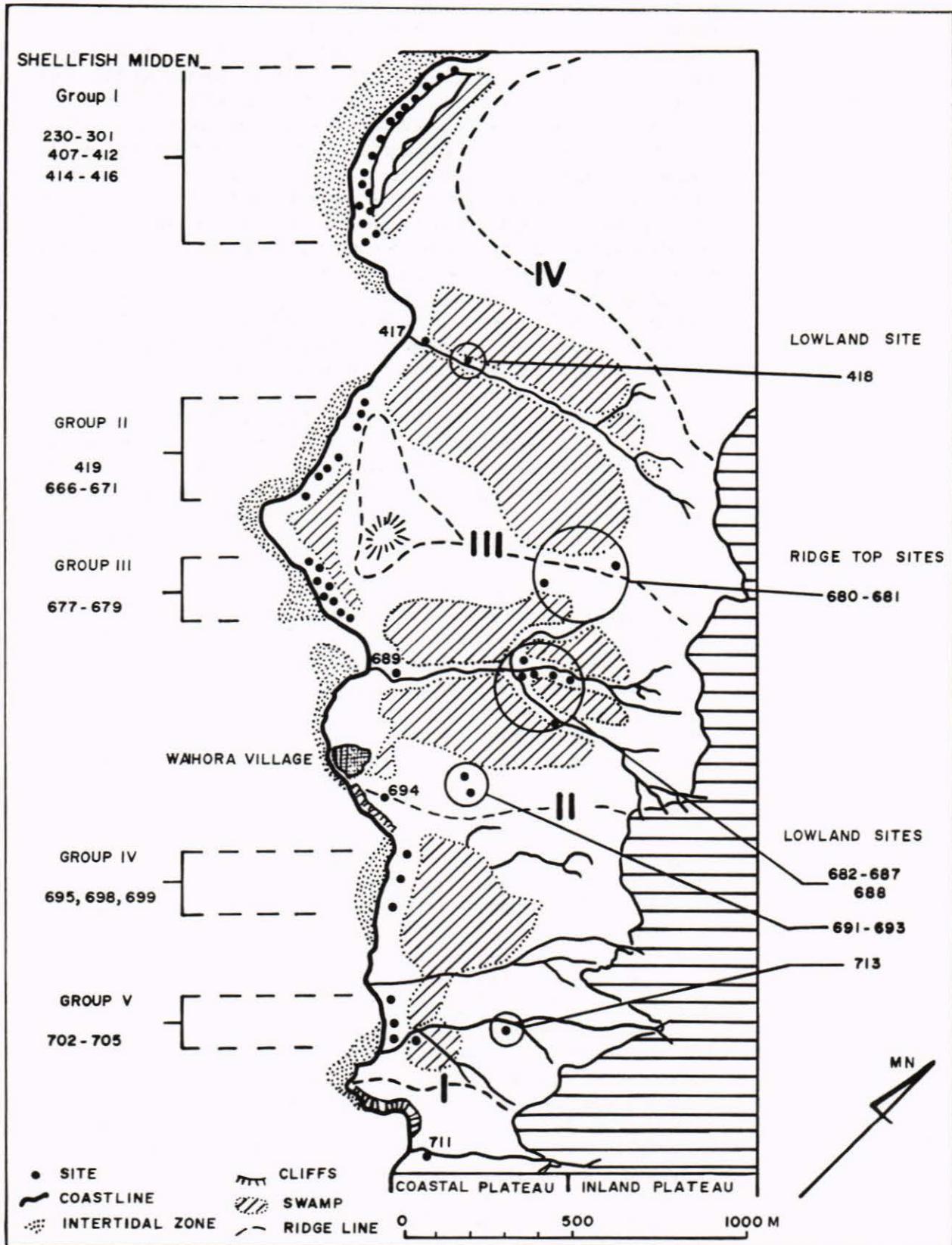
There is as yet no evidence of subsistence economics available from Archaic sites. The first settlers may have attempted to grow kumara, but this would have failed due to climatic factors. There may have been a greater emphasis on line fishing and forest fowling than is evident later. Most importantly, the wide separation of settlements attributed to the Archaic phase and evidence of long range transportation of stone materials may reflect the existence of an assertive and competitive settlement strategy directed towards acquisition and control or ownership of widely separated resources.

In summary, the founding population which arrived on the Chatham Islands during the interval A.D. 800-1000 was small and existed in a closed system, effectively isolated from the rest of the world. The population grew and divided permanently as widely separated areas of the archipelago were settled by new groups which were formed as social fission proceeded. Socio-political organisation within these groups was hierarchial. Rank was very probably inherited, much as it is in the widespread chieftainships of tropical and subtropical Polynesia.⁴⁵ Individuals of highest rank would have had some power over the actions of others and, to some degree, preferential access to produce and privileges. They were buried with exceptionally fine and/or numerous grave goods.

Excavations at Point Durham

By approximately A.D. 1500 aboriginal culture in the Chatham Islands had changed fundamentally. This change was indigenous and must be understood as the result of a cultural response to this island ecosystem. It resulted in the development of Moriori culture *per se* which lasted until European discovery of the islands in 1791. Moriori culture undoubtedly varied a good deal between regions and changed through time. At present it is best known from the Durham area on the south-west coast of Chatham Island (Fig. 10.5) where it was intensively studied by the Otago University team in 1975-1976.

The Durham area was chosen for detailed study because it was small, naturally delimited and appeared to contain a representative sample of the site types found during the initial surveys. It consists of three small valleys separated by low ridges which radiate out from the edge of the southern tableland. Each of the valleys opens out to the south-west, ending abruptly in a high boulder beach, and is therefore very exposed to the prevailing wind. The area was apparently occupied for a short period, probably less than a century, in or about the 16th century.⁴⁶ The



10.5 Archaeological sites and land forms in the Point Durham area.

vegetation cover of the area and the distribution of resource zones there during the period of occupation are shown in Figure 10.6.

The results of seven excavations and the analysis of the materials recovered lead to the following reconstruction of the Moriori subsistence strategy and settlement pattern in the Durham area.⁴⁷ Although there were at least 80 prehistoric sites in the area, only one, known as Waihora, was used as a 'central place' settlement. It was occupied year-round by a group of perhaps 30-50 people who lived in sizeable rectangular houses. This settlement was an internally organised small village or hamlet with a burial area on the seaward edge, houses in an intermediate area between the burials and a food-preparation zone located in the centre of the settlement and down its southern flank. Kitchen refuse was very sensibly placed in heaps along the leeward edge of the mound.

Small parties dispersed from the Waihora settlement in order to hunt or gather at resource zones. They were away for only short intervals, usually less than a day. Most utilised resources were available within 2 km of Waihora. A specific resource was taken en masse at each resource zone and at least some of the food procured in this way was returned to Waihora.

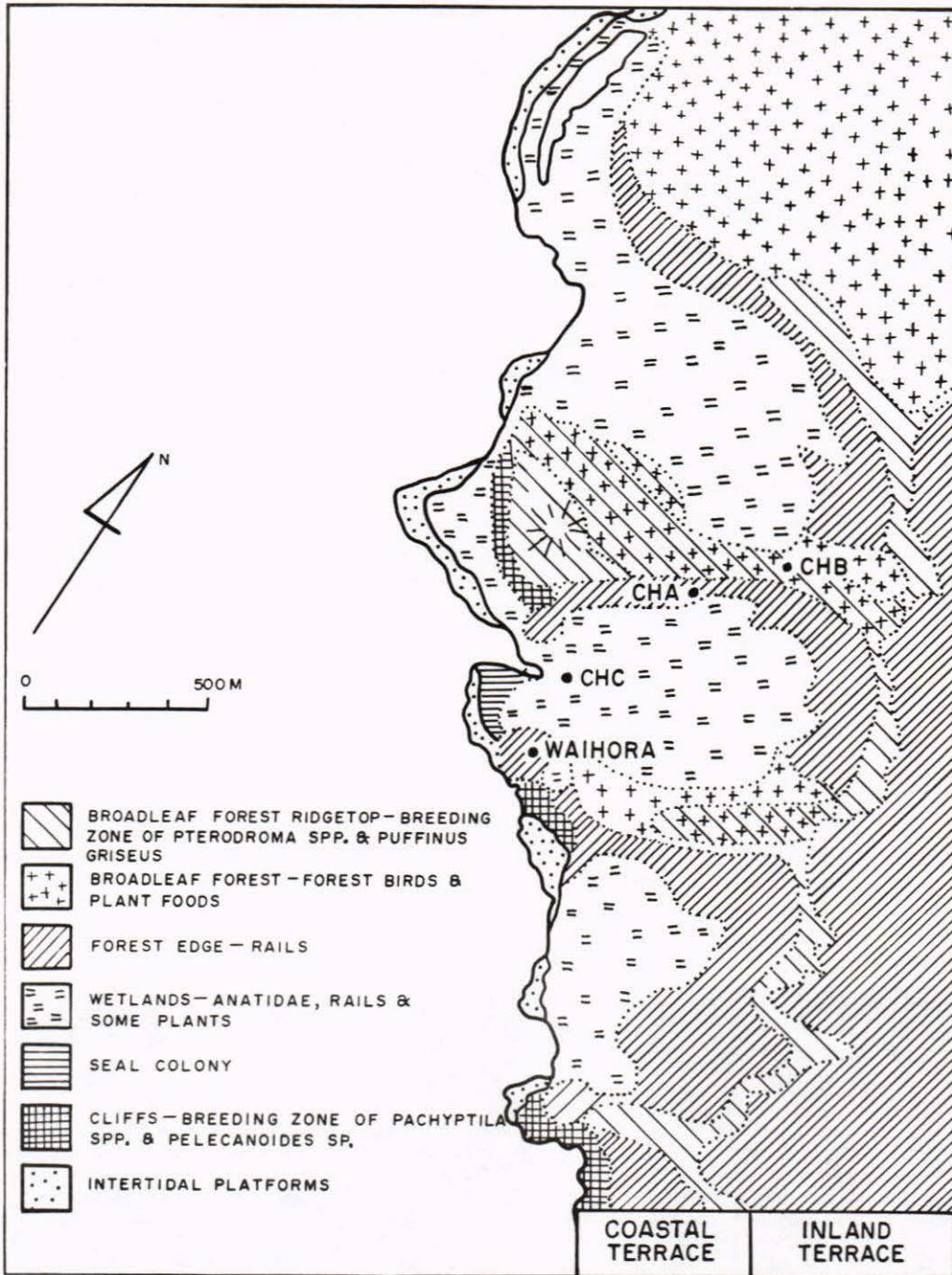
The people who occupied Waihora and the related sites lived by sealing, shell-fishing, fishing, fowling and some collection of plant foods. They killed fur seals throughout the year at a rookery just 400 m away and took other large seals whenever the opportunity presented itself. The seal carcasses were butchered near the rookery⁴⁸ and meat, blubber and other edible materials moved to Waihora. Sealing was easily the most important subsistence activity in the economic cycle.

Shellfishing was a seasonal activity in so far as it was most often possible to collect shellfish efficiently during the calmer months from October to April. Shellfish were collected off the large areas of intertidal platform in the area and many shells were left neatly in big dumps, now identified as specialised middens (see Fig.10.5). Women and children probably collected the shellfish and they were very selective. The three largest, most conspicuous and easily taken species comprise over 90 percent of the shellfish recovered from three of the specialised middens which were excavated.⁴⁹ Although a lot of shellfish were gathered using time-consuming and laborious methods, they made only a modest contribution to diet.

The men caught inshore fish species by using nets set and cast off the less kelp-covered promontories, again most frequently during the calmer months from October to April. Line fishing was very uncommon.⁵⁰ Netting was an efficient strategy given the concentration of fish inshore and the frequent and unpredictable changes of wind speed and direction which occur in the Chathams. It produced a lot of potential food with only relatively simple technology⁵¹ and little or no risk. Fish were taken to Waihora and inland to the CHA and CHB sites (Fig.10.6).

Several species of marine birds were killed in large numbers during their short breeding seasons.⁵² For instance, Chatham Island taiko fledglings were taken from burrows during January after a six-month-long absence of the birds from the area. The taiko colonies were on the ridge-tops and along the edge of the tableland scarp. The inland middens (CHA and CHB, Fig.10.6) were left by people exploiting those colonies. Considerable numbers of penguins were killed during summer and autumn. Despite their selective and in some cases intense exploitation, marine birds were not a major source of food.

Forest birds were also relatively unimportant in terms of food values, but again fowling, like all other subsistence pursuits, was very selective. Pigeon, tui and bell-bird, the heaviest, most conspicuous and stationary forest bird species present, make up over 85 percent of the forest birds identified in CHA, CHB and



10.6 Distribution of resources in the Point Durham area.

Waihora.⁵³ Coastal birds, apart from the diving petrel and two shag species, were not hunted systematically, evidently because they were more dispersed, smaller and harder to catch than the selected species. There was some systematic hunting of rails, with spears and snares. Their absence and a specialisation in the capture of other more economic species may account for the late survival of the large and vulnerable endemic rail, *Diaphorapteryx hawkinsi*.⁵⁴

Plant foods were collected but very little evidence of them survives in the archaeological record. Fern-root was collected and chewed. It is possible that the

burning of the tarahinau evident in pollen spectra from the Durham area and a location 8 km to the north-west,⁵⁵ was deliberate and designed to cultivate bracken.⁵⁶ Karaka kernels were collected, probably with some of the large berries and nikau, when available in the area. It seems likely that wild plant foods were valuable as a carbohydrate source in a very high fat diet.

Trade and exchange of durable materials from areas beyond the south-west coast of Chatham Island was very limited. For instance, 85 percent of the sourced stone flakes found at Waihora came from within 8 km of the settlement. The very small quantity of material from further away was imported on an ad hoc basis for specific tasks when locally available materials were not suitable. For instance, 80 valves of a soft shore bivalve were found amongst the shellfish in Waihora. Some came from a location 13 km away while others were brought at least 24 km. They were used as scrapers, a purpose for which they are much better suited than the rocky shore shellfish found on the Durham coast.

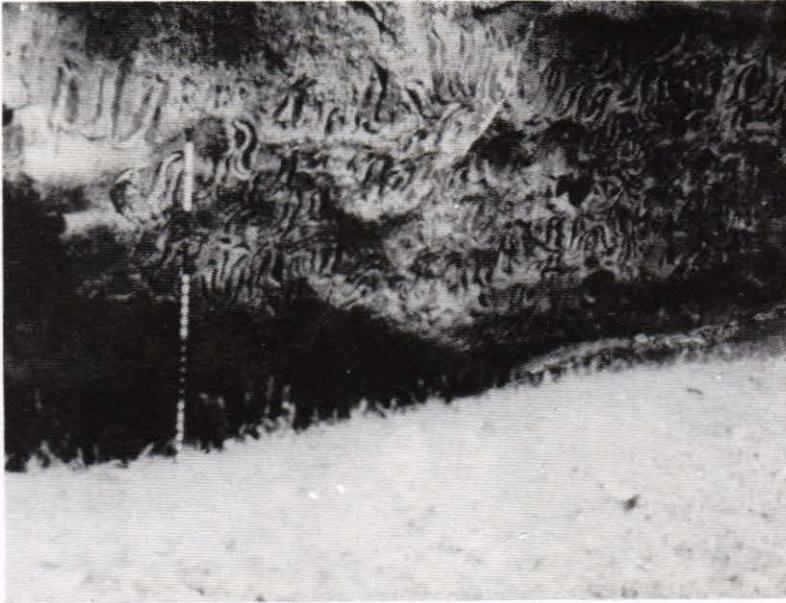
One particularly interesting exception to the general practice of exploiting locally-available resources involves the albatross bone from pre-flight individuals. Immature bone of each of the three species of *Diomedea* which breed on the Chathams was found in Waihora. This reflects exploitation in early spring of breeding colonies on the Pyramid 56 km to the south-east, the Forty-Fours 69 km to the east, and the Sisters which are 53 km to the north-west, either by the Waihora people or some others from whom they obtained these very highly valued birds.⁵⁷

Examination of site survey data indicates that the settlement pattern reconstructed for the Durham area was characteristic of the later period in Chatham Islands prehistory. Seventeen sites like Waihora, all apparently dating to the later, Moriori phase, have been identified. Most of these sites were located near seal colonies and the inhabitants of each were evidently sedentary, localised and largely self-sufficient at least in terms of their subsistence needs and durable raw material requirements. They were very different from their Archaic antecedents in their degree of localisation and self-sufficiency.

However, the contrast does not end there. In the Archaic phase, settlements were located only in a few sheltered east coast situations. The Moriori phase



10.7 and 10.8 Dendroglyphs at Hapupu — north-east of lagoon (D. Simmons).



10.9 Petroglyphs at Te Ana a Nunuku, west shore of lagoon, consist only of simple seal/bird forms (D. Simmons).

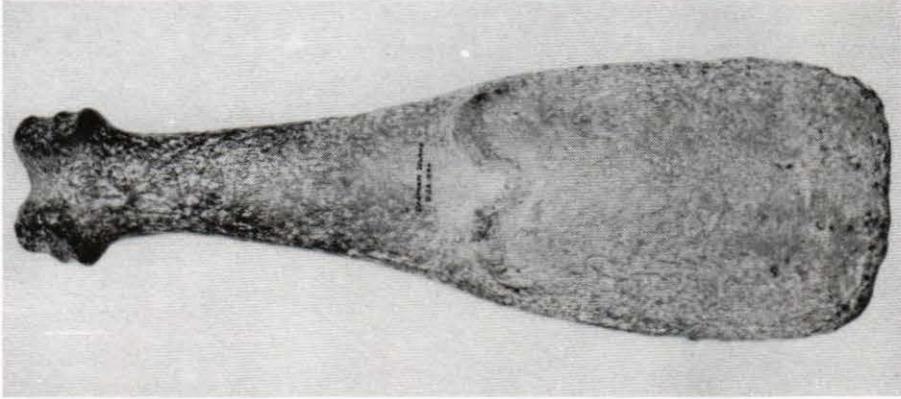
settlements are found on even the most exposed habitable shores in the islands. Whereas at least some Archaic people were buried with rich grave goods, the Moriori were buried almost entirely without grave goods and in postures which, according to historical sources,⁵⁸ reflect skills and prowess acquired during life rather than inherited rank. Most importantly, Moriori material culture was simplified by comparison with both earlier assemblages in the Chathams and contemporary collections from areas to the north, such as Classic Maori material culture from northern New Zealand.⁵⁹ This simplification involved a reduction in the variety of artefact forms in use and a decrease in both the degree of finish, such as polishing, and degree of embellishment or decoration present on portable artefacts.

In the Waihora adze kit only Duff types 2, 3 and 6 are present; over 80 percent of the adzes are of Type 2.⁶⁰ The surviving and recorded tree carvings and rock etchings in the Chathams, which are almost certainly less than 500 years old, lack variety of style and embellishment by comparison with many carvings from northern New Zealand (Figs 10.7, 10.8 and 10.9). Chatham Island handclubs, or patu, especially the most common type (Skinner Type VI; Fig.10.11),⁶¹ lack decoration and variety in style (Figs 10.10 and 10.11). The few known Moriori house carvings show a distinctive but very limited range of motifs.⁶² These are replicated, rather than embellished or involuted, in simple linear design fields.⁶³

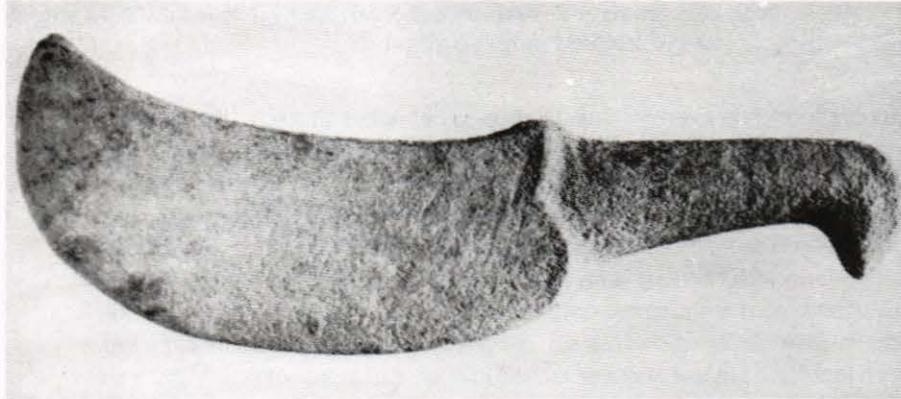
This simplification of material culture was accompanied by a simplification of socio-political organisation. At the time of first European contact, the islands were divided into seven tribal areas (Fig.10.12). The people who lived in each of these areas saw themselves as being descended from a specific male ancestor, but no tribal group was dominant and affiliations were loose. The population within each area was divided into extended family groups. The people who lived on the Waihora site made up one such unit. Each local group had a senior male member as leader who was selected for that role because of exceptional prowess or acquired skills and not because of inherited status. These leaders did not have power over other people. Rather, the supernatural was invoked to regulate resource exploitation and to sanction wrongdoers. Leaders contributed equally to

subsistence tasks. They were not tattooed, nor did they carry distinctive artefacts or wear embellished clothing.

In summary, within 500 years of initial settlement, prehistoric culture on the Chatham Islands simplified markedly. This involved interrelated changes in both material culture and socio-political organisation.



10.10 Schist patu (Otago Museum).



10.11 Schist patu of okewa form (Auckland Museum).

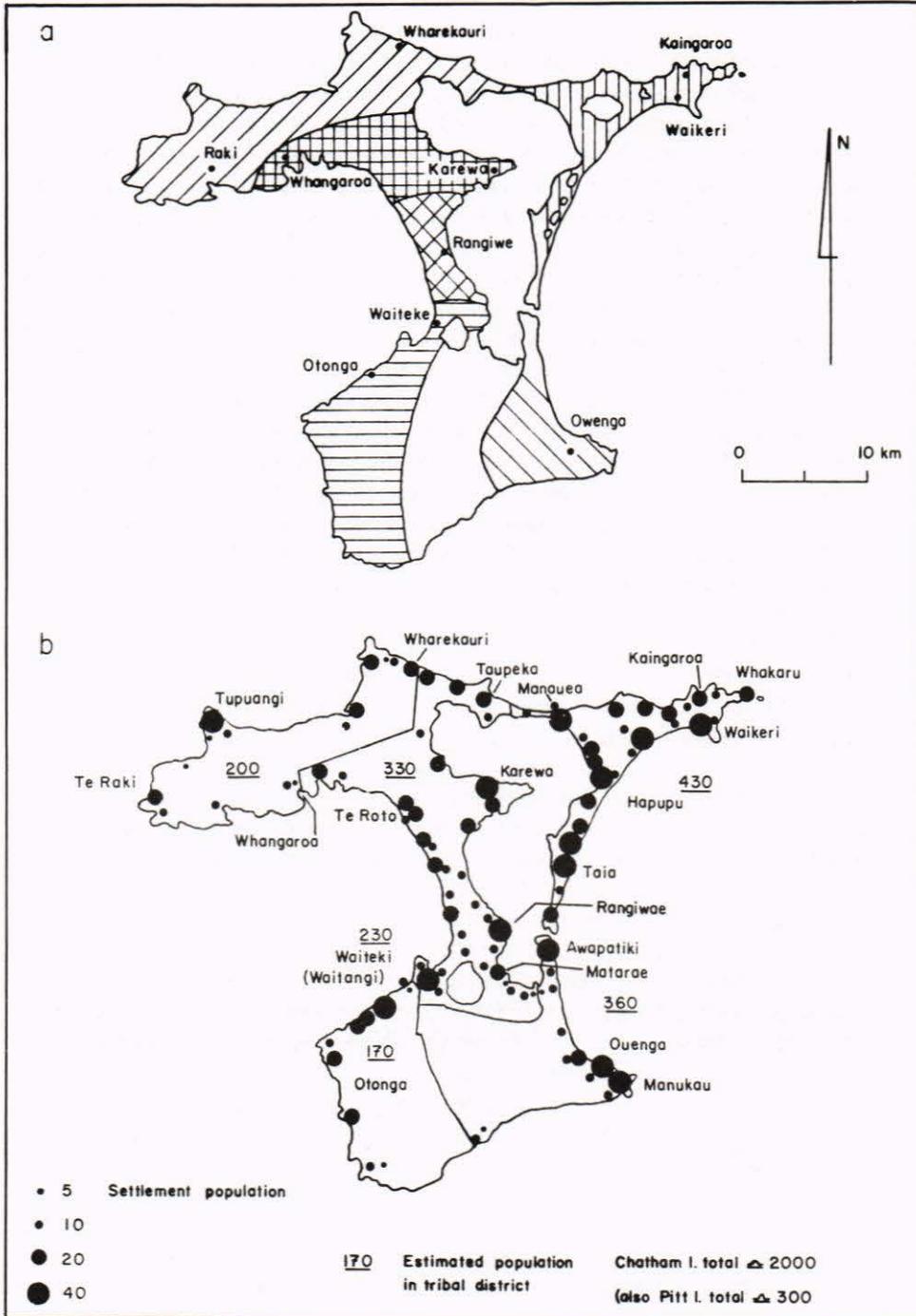
Why change occurred

Several factors have been advanced to explain the obvious differences between Moriori culture and other more 'advanced' or complex Polynesian cultures. Smith and Best believed, within the terms of their myth, that these differences were the result of different racial stock. Skinner, in trying to deal with this problem wrote that the 'sole interest [of Moriori decorative art] lies in the fact that it has preserved in a primitive form some motives which in Maori have become conventionalised beyond recognition.'⁶⁴ This conservatism he saw as a result of 'the general numbing effect of geographical isolation',⁶⁵ while also emphasising the limiting effects of a supposed shortage of critical raw materials, such as high quality wood and stone.

These explanations are unsatisfactory. Isolation does not necessarily lead to cultural simplification,⁶⁶ nor is the very limited amount of art work extant which can be attributed to the Moriori phase necessarily similar to that which is ancestral to Maori art in New Zealand.⁶⁷ There are also good quality raw materials in the Chathams.

In developing an alternative explanation, it is useful to take a much broader view. Archaeologists working in Oceania have recently identified two factors which are strongly associated with the development of hierarchical societies in that region. These are a potential for the intensification of food production and the

possibility of small groups gaining control over the supply of major resources. For the first, it has been argued that the development of chieftainships on Kauai in the Hawaiian archipelago resulted from a positive feedback process based on the 'seemingly limitless potential for intensification of production'¹⁶⁸ which occurs with irrigated agriculture. Very little potential for intensification of production existed in the Chathams because the abundance and seasonality of the food resources selected by the Moriori were determined by climatic and biogeographical factors which were quite beyond their control.



10.12 Moriori tribal areas and population (a. after Simmons, 1962; and b. after Richards, 1972).

The control of potentially highly productive and reliable resources by small socio-political groups can lead to population concentration and increased social stratification.⁶⁹ Resource control is most commonly associated with agricultural and industrial societies but it is also possible in hunter-gatherer contexts when access to a particular resource is limited. Control over the supply of any potentially highly productive resource by a single group or small number of groups is most unlikely to have occurred in the Chathams where all of these major resources, including the fundamentally important seal rookeries, occurred at points all along the coasts of both Chatham and Pitt Islands. They all occurred within each of the 'tribal' areas, and in most cases within the small territories of individual localised groups, such as the one which occupied the Waihora settlement.

It is therefore possible to explain the simplification through time of aboriginal culture in the Chathams as the net effect of the absence from the islands of conditions which are thought to have led to the development of social stratification.⁷⁰ However, such a conclusion is doubly negative and cumbersome. Furthermore, it does not tell us anything about how man actually responded to this distinctive island ecosystem. In concluding, therefore, I want to offer another approach. This begins by noting that there is a common, if not universal, tendency for small scale societies to intensify their subsistence activities. Changes are made which bring about 'a greater concentration of production',⁷¹ and in almost any habitable environment there are several ways of doing this. Those available to hunter-gatherer cultures⁷² may include resource control, selection of optimum resources (usually those which have greatest potential productivity, and maximum predictability and reliability), economic specialisation, changing the natural environment in ways which concentrate potential food, changing procurement technology to increase catches, redistribution of the human population to 'minimise the costs of separation'⁷³ between hunters and prey and, finally, changing the internal organisation of a population to increase its effectiveness.

The degree to which any one of these methods will concentrate production depends in part on the environmental context in which it is applied. In the Chathams, production per unit area could not be increased, and there were no highly-productive resources which could be controlled exclusively by a small group. Therefore, an alternative mode of intensification operated in which fur seals were identified as the optimum resource in the system and through a process of permanent group fission the human population adopted a distribution which was very similar in its spatial, seasonal and numerical axes to the distribution of the seals. Small groups of people, usually ranging from 30-50 individuals, lived year-round in settlements which were close to perennial seal colonies. The subsistence strategy depended upon the seals which could now be harvested most efficiently without wasteful long distance transportation of man to seals or vice versa. The food quest included highly selective exploitation of several important supplementary resources, including birds, shellfish and fish. The concentration of potential marine-based food resources in the islands was sufficient to allow localised self-sufficiency of sedentary groups. As permanent group fission proceeded, it led to a decentralisation of both population and political power. Intra- and inter-group competition relaxed as a result. There was through time a commensurate reduction in the number and variety of finely-finished and decorated artefacts and ornaments in use because these were formerly used as insignia of rank⁷⁴ and group allegiance. For this reason, prehistoric material culture in the Chatham Islands is seen to simplify through time.

Notes

1. Coulter, 1975.
2. Garner and Ridgway, 1965.
3. Richards, 1962.
4. Sutton, 1979a, Figure 2:5.
5. Hamel, 1977b.
6. Latin names are included in Hamel, 1977b.
7. A total of 37 potential plant foods have been identified, see Sutton, 1979a, Table 2:3.
8. Sutton, 1979a, Appendix 2:2, Latin names included.
9. Skinner, 1923b; Skinner and Baucke, 1928.
10. Sutton, 1979a, Table 2:2, Latin names included.
11. Sutton, 1979a, Appendix 2:4, Latin names included.
12. Bourne, 1967, p. 2.
13. Serventy, Serventy and Warham, 1971; Richdale, 1948; Oliver, 1955.
14. Sutton, 1979a, Appendix 2:5, Latin names included.
15. Richards, 1962.
16. Wilson, 1974.
17. Smith, n.d.
18. Young, 1923.
19. Sutton, 1979a, Appendix 2:6.
20. Waite, 1909.
21. Sutton and Campbell, 1981.
22. Leach and Warren, n.d.
23. They have been referred to by other names: Maoriori (Natusch, 1974), Mouriuri (Te Whatahoro cited by Skinner, 1923b, p. 34) Mooriori (Williams, 1937), Maiorioris (Mair, 1870) as well as Moriori (used here after Skinner, 1923b). Late in this paper Moriori is used to refer to the post-A.D. 1500 phase of the prehistoric sequence in the Chatham Islands.
24. See Skinner, 1923b, for an excerpt from Broughton's journal entry following his discovery of the islands and first encounter with the Moriori. Also Richards, 1962 and 1972, for that and other early historical descriptions.
25. Sorrenson, 1977.
26. See S. P. Smith, 1898-1899 and 1910, and Eldson Best, 1916 and 1928. For the purposes of this paper, the differences between these accounts are not important. Best, 1916 and 1928, preferred to call the supposed earliest occupants of New Zealand Maruiwi, to emphasise their Melanesian origin, the unintelligibility of their language and their cultural and physical inferiority. Smith, 1910, referred to them as Tangata Whenua, and believed their origins to be in a mixture of Polynesian and Melanesian stocks and their language to have been comprehensible to the Polynesians.
27. Simmons, 1976.
28. Green, 1975; Harlow, 1979; Houghton, 1980.
29. Mead, 1975.
30. Skinner, 1923b, p. 3.
31. Skinner, 1923b, p. 4.
32. See Skinner, 1974, for several of his major papers and a bibliography.
33. Poll, 1903; Duckworth, 1900; Scott, 1893.
34. Skinner, 1921 and 1923b.
35. Jefferson, 1955.
36. Simmons, 1962, 1964 and 1979.
37. Simmons, 1964, p. 51.
38. Richards, 1962 and 1972.
39. Richards, 1972.
40. The project is reviewed elsewhere, Sutton, n.d.a.
41. This section and the one following is based on Sutton, 1980.
42. Leach and Leach, 1979.
43. Skinner and Phillipps, 1953.
44. Sutton and Campbell, 1981.

45. See Sahlins, 1958, for a discussion of the characteristics of Polynesian chiefdomships.
46. Sutton, 1979a.
47. This reconstruction is widely available in Sutton, n.d.b.
48. Smith, 1977.
49. Sutton, 1979a, Appendix 6:2.
50. Sutton, 1979a, Table 5:6.
51. Moriori fishing technology is discussed by Skinner, 1923b, and Skinner and Baucke, 1928.
52. Sutton, 1979b.
53. Sutton, 1979b.
54. This species survived at least into the 16th century, see Sutton, 1979a.
55. Dodson and Kirk, 1978 and n.d.
56. See Skinner and Baucke, 1928, p. 359, for an account of transplantation of selected fern rhizomes, also Richards, 1962, for what may be confirmatory evidence from the soil survey, for which, see Wright, 1959.
57. Sutton and Marshall, 1980.
58. Reviewed by Skinner, 1923b.
59. Summarised by Golson, 1959.
60. Sutton, 1979a.
61. Skinner, 1923b.
62. On display in the National Museum, Wellington.
63. Goldenweiser, 1936.
64. Skinner, 1923b, p. 125.
65. Skinner, 1923b, p. 124.
66. Sutton, n.d.b.
67. Mead, 1975.
68. Earle, 1978, p. 141.
69. Irwin, 1978a and 1978b.
70. Sutton, 1979a.
71. Brookfield, 1972, p. 31.
72. Reviewed by Sutton, n.d.c.
73. Brookfield, 1972, p. 32.
74. Earle, 1978.