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BIRDS OF A FEATHER

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ARCHAIC MIDDENS OF THE COROMANDEL REGION: A REVIEW

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The Coromandel Peninsula has long been known as an area productive of Archaic artefacts and moa bones in human association. An early find was made by Cormack in a midden at Opito in the 1850s (Duff 1956:250). Duff, in his definitive review of moa-hunter culture, described the Coromandel area as "a virtual 'island' of discovered artifacts of the Moa-hunter type" (*ibid.*). Golson drew on excavated material from Sarah's Gully and Opito in his definition of the North Island Archaic (Golson 1959a:44-45). Since then, a number of other sites containing moa bones and/or Archaic artefacts have been investigated. The identification of faunal remains, particularly bird bones, has played a major part in the interpretation of most of these sites. It therefore seems appropriate to offer a review of them in this volume as an acknowledgement of the vital contribution to their interpretation made by Ron Scarlett.

THE SITES (Fig. 12.1)

Investigations of Archaic middens in the Coromandel region have ranged from highly controlled excavations to surface collecting and fossicking. This review is largely restricted to sites which were investigated by excavation rather than surface collection or chance finds, and to sites from which moa bones and/or artefacts known to be associated with moa bones elsewhere in the country have been recovered. Two sites which do not meet the former criterion have been included because they add important information not otherwise available.

Harataonga Bay Western Midden (N30/5)

A small eroding midden on Great Barrier Island, fully described by Law (1972).

Port Jackson (N35-36/88)

A sand-dune site formerly deeply buried; exposed by deflation in recent years. Local residents have numerous artefacts which are almost certainly from this site. The only evidence considered here, however, is a collection of faunal material not previously published, obtained from the remains of an in situ deposit by Mr. A. Fransham and myself.

Sarah's Midden (N40/13)

A small stratified midden at the base of Sarah's Gully Pa. Excavated by Birks in 1960, referred to by Green (1963).

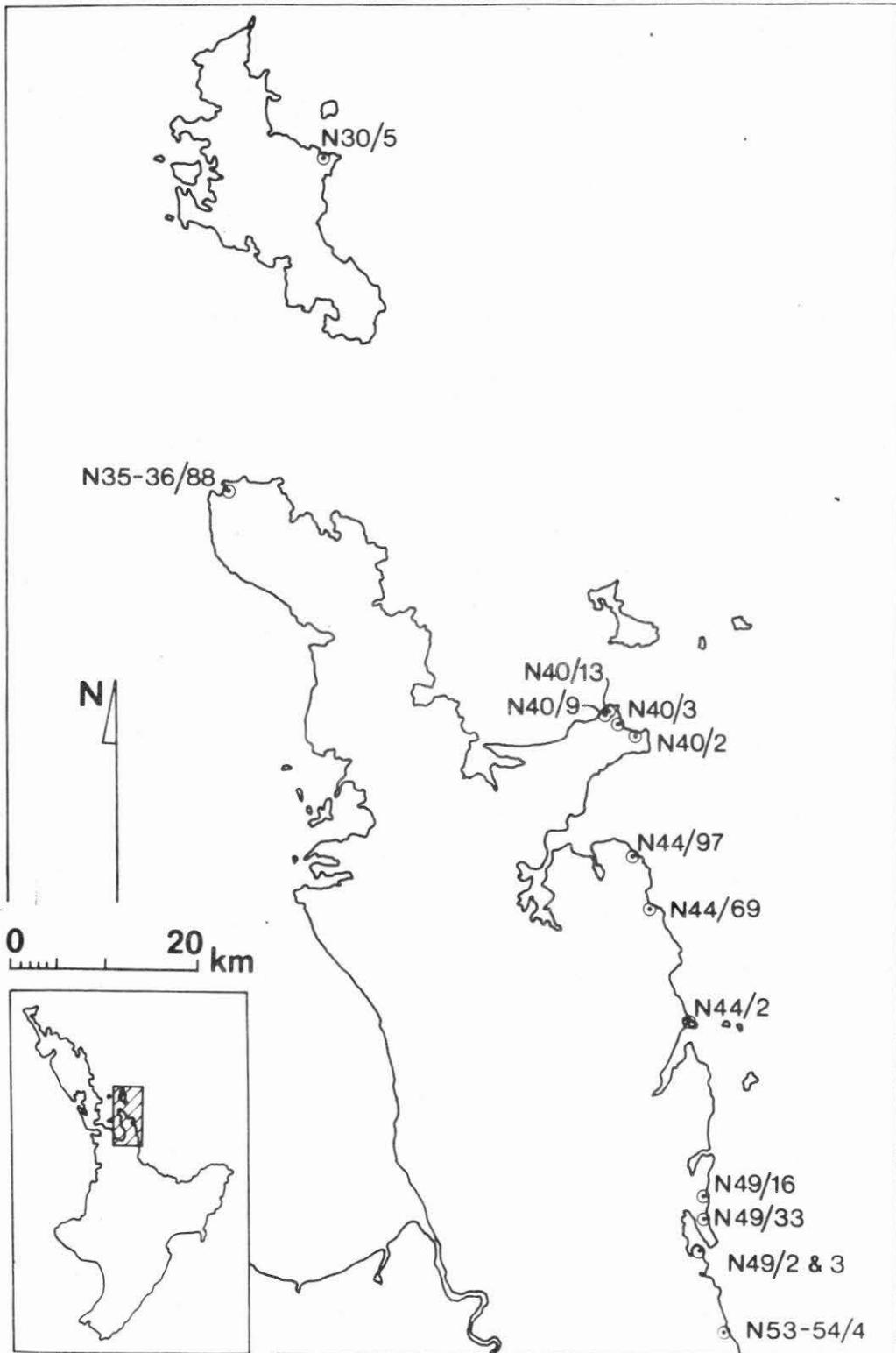


Fig. 12.1 The Coromandel Peninsula and Great Barrier Island, showing sites mentioned in the text.

Sarah's Gully (N40/9)

Excavated by Golson. Published references include Golson (1959a, 1959b) Golson and Gathercole (1962) Green (1963) Scarlett (1969, 1974).

N40/3 (Opito Beach; Skipper's Midden)

Excavated by Golson. Later investigations by Trower and Jolly were probably in this site, now destroyed by erosion. References include Golson (1959a, 1959b), Golson and Gathercole (1962) Trower (1962) Green (1963) Scarlett (1969, 1974).

N40/2 (Parker's Midden; Pohutukawa flaking floor)

A series of small excavations over a long period of time. Earlier surface collection by Parker was probably from the same site. References include Jolly and Green (1962) Green (1963) Murdoch and Jolly (1967) Jolly and Murdoch (1973) Scarlett (1974).

Hahei (N44/97)

Remains of burial with two necklaces of bone reels and central whale tooth pendant, salvaged by Mr. J. D. Osborne during subdivision. Limited salvage excavation by Edson and Brown (1977).

Hot Water Beach (N44/69)

Salvage excavation in car park by Leahy (1974).

Tairua (N44/2)

First excavated by Green and Smart and subsequently by Green and others. References include Smart and Green (1962) Green (1967) Jones (1973) Scarlett (1974) Rowland (1975).

Whangamata Wharf (N49/2)

Excavated and published by Allo (1972); further surface collections of faunal material from eroding section by Jolly.

Cabana Flats, Whangamata (N49/2)

Salvage excavation by Jolly and East in private garden following disturbance during construction of goldfish pond. Material on deposit in Auckland Museum.

Whangamata Road (49/2)

Small salvage excavation in road directly opposite Cabana Flats, probably part of the same site. Referred to by Shawcross (1964).

Whitipirorua (N49/16)

A series of small excavations in an extensive sand dune site by Jolly and various assistants. Material in Auckland Museum. Site now largely destroyed by subdivision.

Wheritoa (N53-54/4)

A large site at the north end of the beach investigated by Jolly and others, notably Crosby, who also reviewed artefacts from the same site in private collections. Destroyed by subdivision. References include Crosby (1963, 1977) Foreman and Jolly (1965). Distinct from site at south end of beach from which moas cited by Scarlett (1974) were probably collected.

The Settings

All are sand dune sites, mostly close to stream or river mouths. The cluster of three Whangamata sites and Wheritoa are on the northern tips of sandspits, with open ocean beaches to the east and estuaries to the west. Tairua is on the inner side of a sandspit linking the rocky outcrop of Paku, at the entrance to Tairua harbour, with the land to the north. The remaining sites are not on major estuaries. Tairua is unique in apparently not having ready access to fresh water.

All the sites are close to others of quite different type, including pa, open ridge habitation or storage sites, and concentrated shell middens which appear to be significantly different from the middens under review here.

Internal Structuring

Most investigations have been small samples of large and/or eroded sites and little information on internal patterning has been obtained. An important exception is Tairua, a small settlement whose lay-out revealed several different activities within an excavated area of 125 m² (Jones 1973). At Sarah's Gully, also, important data on site lay-out were obtained. Although the details have not been published, it is known that the extensive midden strip contained different concentrations of artefacts and faunal material in different areas. Burials were found in one area and on the slopes and knoll behind the midden, numerous postholes and several small pits, some with drains, were found.

Stratigraphy

At two sites, Tairua and Whangamata Wharf, two strikingly different cultural layers were separated by sterile sand. In each case the lower layer contained moa bones and Archaic artefacts, whereas the upper layer consisted predominantly of lenses of concentrated shell midden; of nineteenth century age at Whangamata and seventeenth or eighteenth century age at Tairua. At Sarah's Midden, also, a layer containing moa bones was stratified beneath one with European material.

At Hot Water Beach, on the other hand, three principal cultural layers contained essentially similar material, although with some changes through time. The youngest of these layers (3b) postdates A.D. 1500 and contains little that is recognisably Archaic in Golson's terms.

Of the sites, Sarah's Gully and N40/3 are known to have been stratified, the first with up to ten layers and the second with at least three. They may have reflected trends similar to Hot Water Beach, but details are not available. The two lenses at Harataonga almost certainly represent a single occupation.

There is no information to indicate whether there was more than one occupation at the other sites, although at some of them (Wheritoa, N40/2, Whitipiroua, Cabana Flats) there appears to have been more than one layer.

Dating

Those sites for which dates are available can be broadly bracketed between A.D. 1250 and 1500, with the possible exception of Tairua. Harataonga, N40/3 and Hot Water Beach, layer 5, are associated with Loiseles pumice in ways which suggest their approximate contemporaneity with it. N40/3 also has a radiocarbon date and there are comparable dates for Sarah's Gully. Layer 4 at Hot Water Beach is dated by radiocarbon to approximately A.D. 1500. Although Tairua was originally regarded as an earlier site, the general similarity of its content to the other dated sites suggests it may be broadly contemporary with them. This view finds some support from a fourteenth century radiocarbon date on shell from the lower layer.

SUBSISTENCE

The Coromandel Peninsula is an area where Polynesian cultivation has been practised. The possibility that horticulture was contemporary with the Archaic middens was raised by Golson (1959a:45) on the basis of his Sarah's Gully evidence, but remained unresolved and indeed disputed for many years. Radiocarbon dates for early storage structures at Sarah's Gully Pa and Skipper's Ridge, Opito, are now supported by growing evidence of early horticulture in other parts of the North Island. Accordingly, the Archaic middens of the Coromandel can now be regarded as representing one or more components of a settlement pattern which also included cultivation and storage sites.

The interpretation of the Archaic middens in relation to the wider subsistence base of the communities concerned has never been adequately considered. Detailed information on food remains is available only for the fully published sites. However, some information exists about faunal remains, particularly birds, in some of the other sites also.

Moas and other birds

The presence of moas and other extinct birds (or birds extinct in the North Island) is shown in Table 12.1. Only small numbers of individuals of any species seem to be involved. Nonetheless, it can be seen that a considerable variety of now extinct avifauna was available to the inhabitants of the Coromandel Peninsula during the period in question.

Euryapteryx moa, probably E. geranoides, was definitely present at Harataonga; the material was interpreted as industrial but nonetheless suggests contemporaneity of man and moa in the wider region. The natural presence of moas on Great Barrier remains uncertain. The moa at Whangamata Wharf, on the other hand, included a juvenile, and was probably used for food. At Hot Water Beach, moa bone was present in all three layers, but positive identification to genus or species was possible only for layer 5. It is doubtful whether moas were used for food in layers 4 and 3b. Pachyornis mappini was definitely present in the site, but identified only from a disturbed context. In addition to the moas shown for Wheritoa, which were possibly

industrial rather than food remains, another site at the south end of the beach yielded examples of Dinornis novaezealandiae, D. struthoides, Pachyornis mappini and possibly Euryapteryx curtus.

One of the principal arguments in favour of Tairua being an early site is the number of moa species used as food. Apart from Pachyornis septentrionalis and the tentatively identified D. gazella, however, the moas present at Tairua are found in at least two other sites, while one of the most widely represented species, E. exilis, is not recorded from Tairua. Similarly, Tairua has only one other extinct species of bird, compared with four at both Port Jackson and Hot Water Beach. It is by no means certain that the number of moa species at Tairua is due to its greater age, rather than to a slightly different focus of hunting activity or a different season of occupation (cf. Rowland 1975).

A pattern of generalised hunting without marked concentration on particular species is, generally, reflected in other bird remains also. In Table 12.2, presence/absence of bird species according to habitat zone, are shown together with minimum numbers where available. The largest number of species is found at Tairua and Hot Water Beach, layer 5. At Hot Water Beach, there is a steady decline in bird species from layer 5 to layer 3b. The number of species represented in layer 4 at Hot Water Beach is similar to Hara-taonga and the Opito and Sarah's Gully sites. The deposits with relatively few bird species are also of interest. Wheritoa was a very small sample, but Hot Water Beach, layer 3b, reflects a decline in most kinds of food, not merely birds. Whangamata Wharf was an unusually specialised deposit primarily concerned with butchering dogs; fish, birds and shellfish are all rare compared with other sites. At Port Jackson, however, the relatively small number of bird species is at least partly due to the poor representation of sea birds. The small sample and a possible collection bias towards larger bones may explain the predominance of moa, but it can hardly account for the proportions of sea and land birds. The kaka was by far the most common bird in the sample with considerably more than 50 individuals represented. The part of the deposit sampled, at least, seems to reflect land-oriented hunting.

Unfortunately, details of minimum numbers of birds are available from only four sites. There is little evidence, for the most part, of concentration on only one species, although the kaka tends to predominate among bush birds. Only Port Jackson exhibits heavy exploitation of kaka compared with all other birds. Another interesting exception is provided by N40/2. Here there was a minimum of 26 individuals of the flesh-footed shearwater, whereas other birds are represented by one or at the most two individuals. This is one of very few instances yet reported of midden bones reflecting specialised birding. Even so, the bones could be the result of one day's work; it is noteworthy that all these bones were found in one square. The flesh-footed shearwater still breeds on the Mercury Islands and possibly other islands off the Coromandel Coast.

Table 12.1 Occurrence of Moas and other Extinct Birds

	Harataonga	Pt. Jackson	Sarah's Gully	N40/3	N40/2	HWB/5	HWB/4	HWB/3b	Tairua	Whangamata Wh.	Wheritoa
<u>Euryapteryx curtus</u>	-	X	-	-	X	?	-	-	-	-	-
<u>Euryapteryx exilis</u>	-	X	-	X	X	X	?	?	-	X ¹	X
<u>Euryapteryx geranoides</u>	?	X	-	-	X	-	-	-	X	-	?
<u>Euryapteryx sp.</u>	X	-	-	-	X	X	?	?	-	X	-
<u>Pachyornis septentrionalis</u>	-	-	-	-	-	-	-	-	X	-	-
<u>Pachyornis mappini</u>	-	-	-	-	-	?	?	?	X	-	-
<u>Dinornis gazella</u>	-	-	-	-	-	-	-	-	?	-	?
<u>Dinornis struthoides</u>	-	-	X	X	-	-	-	-	X	-	-
<u>Dinornis novaezealandiae</u>	-	X	-	-	-	-	-	-	X	-	-
<u>D. giganteus/hercules</u>	-	X	X	X	-	-	-	-	X	-	-
<u>Dinornis sp.</u>	-	-	-	-	X	X	?	?	X	-	-
<u>Palaeocorax moriorum</u> extinct crow	-	X	X	-	-	-	-	-	X	X ¹	-
<u>Notornis mantelli</u> takahe	-	X	-	?	-	-	-	-	-	-	-
<u>Nesophalaris chathamensis</u> extinct coot	-	X	-	-	-	X	-	-	-	-	-
<u>Circus eylesi</u> subsp. extinct hawk	-	-	-	-	-	-	-	X	-	-	-
<u>Heteralocha acutirostris</u> huia	-	X	-	-	-	X	-	-	-	-	-
<u>Gallirallus minor</u> extinct little woodhen	-	-	-	-	-	X	-	-	-	-	-
<u>Apteryx oweni</u> little grey kiwi	-	-	-	X	X	-	-	-	-	-	X
<u>Strigops habroptilus</u> kakapo	-	-	-	-	X	?	?	?	?	-	-
<u>Pelecanus conspicillatus</u> subsp. pelecan	-	-	-	-	-	-	-	-	-	X ¹	-

1. 1976 collection by R. G. W. Jolly

Table 12.2 Occurrence of Other Birds

Ocean/sea/coast	Harataonga	Pt. Jackson	Sarah's Gully	N40/3	N40/2	HWB/5	HWB/4	HWB/3b	Tairua	Whangamata Wh.	Wheritoa
<u>?Eudyptes</u> sp.											
large penguin	-	X	-	-	-	-	-	-	-	-	-
<u>Eudyptula minor iredalei</u>											
little blue penguin	4	X	X	X	1	5	3	1	X	1	X
<u>Diomedea</u> sp.											
albatross	1	-	X	X	1	1	1	-	X	-	-
<u>Thalassarche</u> sp.											
mollymawk	1	-	X	X	X	1	?	?	X	-	-
<u>Puffinus griseus</u>											
sooty shearwater	-	-	X	X	?	1	-	-	-	-	-
<u>Puffinus gavia</u>											
fluttering shearwater	2	-	-	X	1	1	-	1	-	-	-
<u>Puffinus assimilis</u>											
little shearwater	-	-	-	-	-	1	-	-	-	-	-
<u>Puffinus carneipes</u>											
flesh-footed shearwater	-	-	-	X	26	-	-	-	-	-	X
<u>Puffinus</u> sp.											
shearwater, undeterm.	-	-	X	X	-	-	-	-	-	-	-
<u>Pterodroma macroptera</u>											
grey-faced petrel	5	-	X	-	X	-	-	-	X	-	-
<u>Pachyptila turtur</u>											
fairy prion	?1	-	X	X	-	-	-	-	-	-	-
<u>Pachyptila vittata</u>											
Broad-billed prion	-	-	-	-	-	1	-	-	-	-	-
<u>Pachyptila</u> sp.											
prion, undetermined	-	-	X	-	-	-	-	-	X	-	-
petrel, undetermined	-	X	X	X	-	2	1	1	X	X	-
<u>Macronectes giganteus</u>											
giant petrel	-	-	-	-	-	-	-	-	?	-	-
<u>Pelagodroma marina</u>											
white-faced storm petrel	-	-	-	X	-	-	-	-	-	-	-
<u>Pelecanoides urinatrix</u>											
diving petrel	-	-	X	X	-	1	-	1	-	-	-

Table 12.2 (contd.)

Ocean/sea/coast	Harataonga	Pt. Jackson	Sarah's Gully	N40/3	N40/2	HWB/5	HWB/4	HWB/3b	Tairua	Whangamata Wh.	Wheritoa
<u>Phalacrocorax melanoleucos</u>											
little shag	1	X	-	-	1	1	-	-	X	-	-
<u>Phalacrocorax varius</u>											
pied shag	-	?	-	-	-	-	-	-	X	-	-
<u>Phalacrocorax carbo</u>											
black shag	1	?	-	-	1	1	-	-	-	-	-
<u>Stictocarbo punctatus</u>											
spotted shag	?2	?	-	-	-	1	-	-	X	-	-
shag, undetermined	1	X	X	X	1	-	-	-	X	3	-
<u>Egretta alba</u>											
white heron	-	-	-	-	-	-	-	-	-	1	-
<u>Haematopus sp.</u>											
oyster catcher	-	-	-	-	-	-	-	-	X	-	-
<u>Himantopus sp.</u>											
stilt	-	-	X	-	-	-	-	-	-	-	-
<u>Larus sp.</u>											
gull	1	X	X	X	-	1	-	-	X	-	-
<u>Hydroprogne caspia</u>											
caspiian tern	-	X	-	-	1	-	-	-	?	-	-
<u>Chlidonias hybrida</u>											
black-fronted tern	-	-	-	-	-	-	-	-	X	-	-
Forest											
<u>Apteryx australis</u>											
kiwi	-	-	-	-	-	1	1	1	-	1	-
<u>Hemiphaga novaeseelandiae</u>											
pigeon	1	X	-	X	1	2	1	-	X	-	-
<u>Nestor meridionalis</u>											
kaka	3	X	X	X	1	10	5	3	X	-	X
<u>Cyanoramphus sp.</u>											
parakeet	-	X	-	-	1	2	1	-	X	-	-
<u>Ninox novaeseelandiae</u>											
morepork	-	-	-	-	-	1	1	-	-	-	-
<u>Prothemadera novaeseelandiae</u>											
tui	1	-	X	-	1	6	1	1	X	1	-

Table 12.2 (contd.)

Forest	Harataonga	Pt. Jackson	Sarah's Gully	N40/3	N40/2	HWB/5	HWB/4	HWB/3b	Tairua	Whangamata Wh.	Wheritoa
<u>Callaeas cinerea</u> kokako	-	X	X	-	1	4	2	-	X	-	-
<u>Turnagra capensis</u> thrush	-	-	-	-	-	1	-	-	-	-	-
Lake/river/swamp											
<u>Podiceps cristatus</u> southern crested grebe	-	-	-	-	-	-	-	-	X	-	-
<u>Anas superciliosa</u> grey duck	-	-	X	X	-	-	-	-	X	-	-
<u>Tadorna variegata</u> paradise duck	-	-	X	-	-	-	-	-	X	-	-
<u>Anas rhynchotis</u> shoveller	-	-	-	X	-	-	-	-	-	-	-
<u>Anas aucklandica chlorotis</u> brown teal	?1	-	-	-	-	-	-	-	-	-	-
<u>Hymenolaimus malacorhynchos</u> blue duck	-	X	-	-	-	-	-	-	-	-	-
<u>Anas</u> sp. duck, undetermined	-	-	X	X	-	X	-	1	X	-	-
duck, undetermined	-	X	-	-	-	-	-	-	-	1	-
Open country											
<u>Falco novaeseelandiae</u> falcon	-	-	-	-	-	1	1	-	X	-	-
<u>Gallirallus australis</u> weka	-	-	X	X	-	3	1	-	X	-	-
<u>Anthus novaeseelandiae</u> pipit	-	-	X	-	-	-	-	-	-	-	-

Mammals

Seals are reported from all sites for which any faunal evidence at all is available. The fur seal is present in all sites, and the elephant seal is also reported from N40/3, Tairua and probably Wheritoa. The importance of seal in the diet at Whangamata Wharf has been demonstrated by Allo. Similar importance is likely at most if not all other sites, reflecting the heavy reliance on marine products in the economy.

Dogs are known from all sites. At Whangamata Wharf, a minimum number of 17 dogs is in striking contrast to the small numbers of birds and fish. On present evidence, no other site has such a large number of dogs, although several individuals are present in each site for which data are available. Immature dogs are represented in all these sites.

Cetacean remains have been less fully identified. Fragmentary whale remains are listed from Hot Water Beach, layer 5, Whangamata Wharf and N40/3, and undetermined cetacean from N49/2, N30/2 and Tairua. The extent to which any of these represent food is uncertain.

The rat is not reported from Sarah's Gully, Harataonga or Whangamata Wharf (where it is present in the upper layer). It is found in small quantities in other sites, declining through time at Hot Water Beach from 10 individuals in layer 5 to 1 in layer 3b.

Human bones are recorded only from Whangamata, where scattered charred fragments in the midden were interpreted as evidence of cannibalism.

Fish

In view of the importance of fishing as reflected by fishing gear in most of these sites, the identification of fish remains constitutes an important field for future enquiry. At Hot Water Beach, 82 fish of at least 15 species were found in layer 5, declining to 33 fish of 6 species in layer 4 and 18 of 6 species in layer 3b. Snapper was much the most numerous in all layers. At Harataonga, six species were identified, snapper greatly predominating. At Whangamata Wharf, snapper comprised three of the total six fish of four species. Snapper was most numerous of seven species identified at Tairua. Snapper appears to be present in all sites for which any information is available. Fish bone generally and snapper in particular was very common at Wheritoa. At Port Jackson, snapper and kahawai were almost equally represented in the small area sampled, with several other species present in smaller numbers.

Tuatara

The tuatara, which is still found on some of the islands off the Coromandel coast, is present at Port Jackson, Hot Water Beach, layer 5, Sarah's Gully and the Opito sites, but has not been reported from Tairua, Whangamata and the upper layers at Hot Water Beach.

Shellfish

An apparent shift from rocky shore to estuarine and sandy beach species

was demonstrated at Tairua. Subsequent work, however, has revealed a more complex picture, in which rocky shore shellfish continued to be represented in small numbers as part of the concentrated, predominantly sandy beach, shell midden dumps (Rowland 1975). At Whangamata Wharf, the great quantity of shell in the upper midden contrasted with the unimportance of shell in the lower midden; the same species were present in both deposits, however. At Hot Water Beach, a similar range of both rocky shore and sandy/mudflat species was present in all layers. There was a marked change from the dominance of rocky shore species (particularly *Lunella smaragda*) in layer 5 to a dominance of sandy/mudflat species (*Paphies australe* and *Amphibola crenata*) in layer 4, but in layer 3b the proportions were again similar to layer 5. At Harataonga, the midden was dominated by rocky shore species, but this was also true of the much later Eastern Midden. Clearly, local conditions are important in evaluating shellfish exploitation.

Discussion

For most sites, little or nothing is yet known about the relative contribution of different foods to the diet; season of occupation; or whether the sites reflect preservation of food to be eaten elsewhere. Law has suggested that Harataonga was certainly occupied during spring, but that there is nothing to show whether it was also occupied for the rest of the year. He found no clear evidence of food preservation. Similar conclusions were reached by Leahy for Hot Water Beach. Rowland has suggested that Tairua was probably occupied in autumn-winter, although other seasons could not be definitely excluded. By contrast, year-round occupation with no particular seasonal emphasis was indicated for the upper shell midden lenses (Bed 6) at the same site.

Although general trends such as the decline and extinction of moa and an increase in exploitation of estuarine shellfish are still evident, small individual variations in food remains from site to site show that the picture is more complex than appeared from Tairua alone. It is impossible to seriate sites or estimate age on the basis of number of extinct bird species or proportions of rocky shore to estuarine shellfish and these trends seem unimportant compared with continuity in overall economic activity in the sites under review. Most sites reflect generalised exploitation of a range of food resources, but with a strong marine emphasis. Specialisation is the exception rather than the rule. The sites with some evidence of specialisation (N40/2 with its shearwaters, Port Jackson with its kaka, and Whangamata Wharf with its dogs) also contain evidence of the use of the moa for food in small quantities.

MATERIAL CULTURE

Although no one site has yielded a full inventory of Archaic artefacts, the range of material from all the sites together includes a large proportion of demonstrably Archaic forms known from elsewhere in New Zealand. In considering the small numbers of most artefact types it is important to remember that the scale of most excavations has been minute compared with operations at Wairau Bar, for example. Many of the sites themselves are small, but others, such as Wheritoa and Whitipirorua were of considerable extent. The problem of site delimitation is also acute; are the scattered remains at Whangamata, now separated by roads and wharf facilities, part of one large site with distinct activity areas, or are they three separate sites?

Fishing Gear (Fig. 12.2)

Trolling gear is represented in small amounts at most sites. Stone shanks are rare and the triangular shank, so popular in the Cook Strait area, for instance, is hardly represented in the excavated material. The flattish-sectioned shank with dorso-ventral perforation has been found in several sites. The pearl shell specimen from Tairua is well known (Green 1967). It is matched by a shell specimen from Whitipirorua, which although much smaller, duplicates the shield shape of some Murihiku examples, and a small stone shank, also from Whitipirorua. A bone shank with dorso-ventral perforation was found in Hot Water Beach, layer 5; a similar example was found in Sarah's Midden. A piece of worked shell from Hot Water Beach, layer 4, is probably an unfinished lure shank. Bilaterally perforated shanks are represented only by a stone specimen of trapezoidal section from Wheritoa, and a substantial bone shank, of rounded triangular section, from the Cabana Flats. The latter was associated with three bone shanks and a stone shank, all of the grooved type. There is also a grooved shank from Whitipirorua Site 3, and one from Harataonga. Moa bone blanks from N40/2 and Whitipirorua may have been intended either for dorso-ventral or grooved line attachment. Private collections from Wheritoa contain both dorso-ventral and grooved shanks.

The importance of shell lure shanks in New Zealand has been under-emphasised, partly because they are not found at all in some well studied areas like Murihiku. They are often powdery and fragile when found and appear unfunctional. The Whitipirorua example, however, which is particularly well preserved, is a very practical item. Although the Tairua specimen in pearl shell may have survived as an heirloom ornament, it was clearly originally functional, and demonstrates the Polynesian origins of the dorso-ventral form (Green 1967). Dorso-ventral shells shanks have been found at Houhora, and Hjarnø has shown that shell shanks were numerous at Wairau (1967:45)

In contrast to the variety of lure shanks, only uni-perforate points with neither proximal nor distal projections have been reported. Examples include one from Sarah's Gully, N40/3, Cabana Flats and Hot Water Beach, layer 4; a possible unfinished point from Hot Water Beach, layer 5, and a shell example from Harataonga. Private collections contain several from Wheritoa.

Bait hooks are almost all unbarbed one-piece bone specimens, with numerous examples from Harataonga, Sarah's Gully, N40/3, Hot Water Beach, Cabana Flats, Whitipirorua and Wheritoa. A few examples also come from N40/2, Tairua and Whangamata Wharf. Both incurved and straight varieties are found and there is some variation in size, head form and presence or absence of bait notch. The majority of hooks from all sites are of moa bone, but other bone and ivory are also recorded.

Two-piece bone hooks are virtually unknown. Re-use of broken one-piece hooks by lashing point and shank legs together is reported from Wheritoa. An Oruarangi point was found at N40/2 but was not certainly associated with the main deposit there. Barbed hooks are known from other Coromandel sites, but the only barbed hook reported from any of the sites under discussion is a small shank-barbed shell hook from Hot Water Beach, layer 3b.

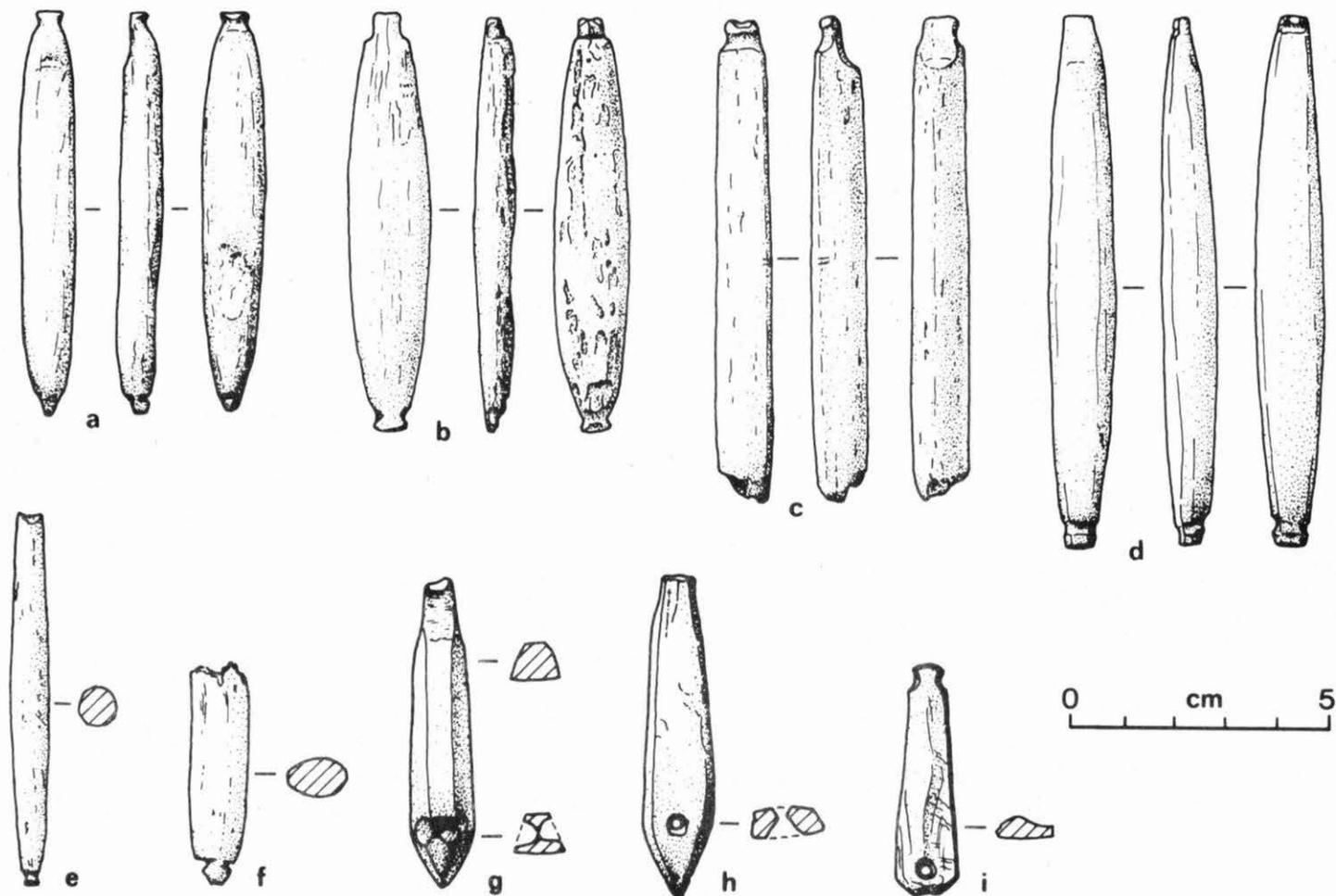


Fig. 12.2 Trolling lure shanks. a-e, Cabana Flats, Whangamata; a-c and e, bone, d, stone. f, Whitipirorua Site 3, bone. g, Wheritoa, stone. h-i, Whitipirorua, h, stone, i, shell.

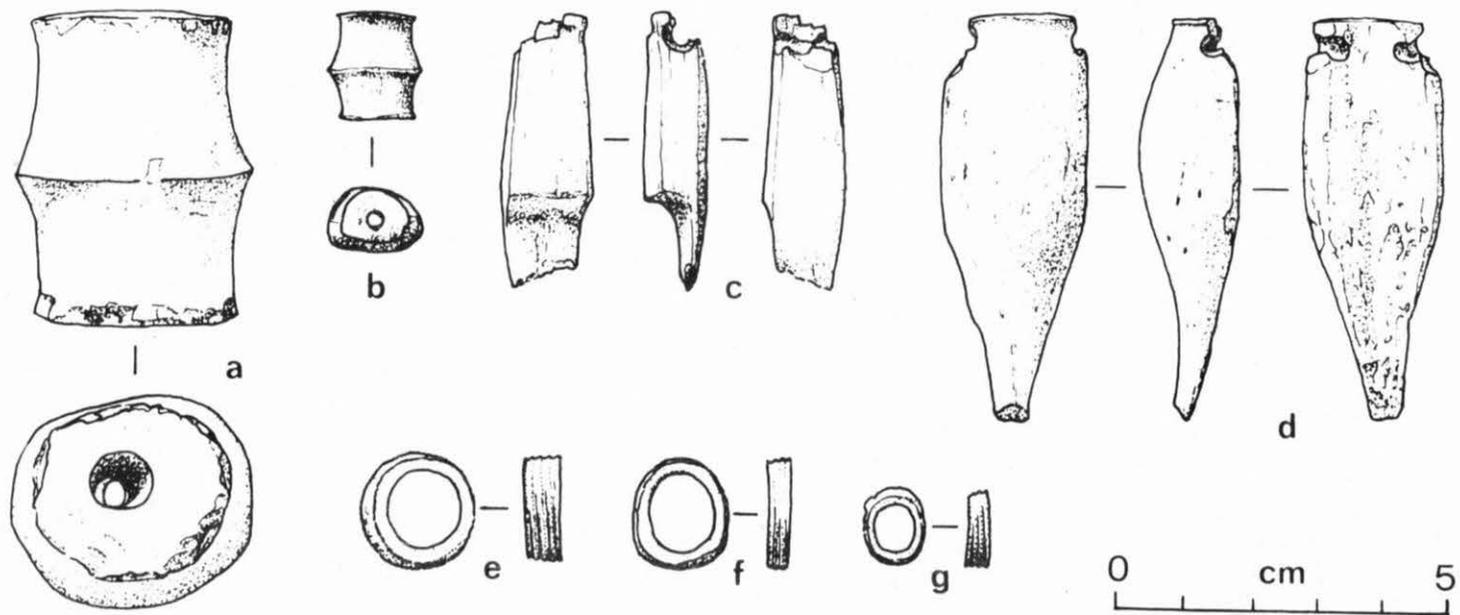


Fig. 12.3 Personal ornaments. a, Hot Water Beach, stone reel. b, Whitipirorua, bone reel. c, Wheritoa, bone pendant unit. d, Cabana Flats, Whangamata, bone pendant unit. e-g, Whitipirorua, fossil dentalium segments.

The position of shell fishhooks in the Coromandel region is obscure. Both unbarbed one-piece and unbarbed two-piece examples (with notches for lashing) were found at N40/2 and have generally been assumed to be "late Archaic". On the faunal evidence, however, there is no reason to assume that this site is any later than other sites reviewed here. Shell hooks may have been found and not published, or found and not recognized at some other sites. Shell two-piece hooks are also known from Wheritoa and Whitipirorua, and shell one-piece hooks are represented in private collections from Wheritoa.

Although the position of shell hooks remains to be clarified, the other evidence suggests that both the unbarbed bone one-piece hook and the Polynesian trolling lure were sufficiently appropriate to Coromandel conditions to continue in use until at least A.D. 1500. There is no sign of the barracouta point or the barbed point, both well established elsewhere long before A.D. 1500. Stone sinkers are rare, and have so far been reported only from N40/2.

Ornaments (Fig. 12.3)

The recent discovery at Hahei of burials with necklaces of reels and central whale tooth pendant raises hopes that other complete necklaces may yet be found. The Hahei necklaces consist of ivory reels with a central pendant both probably made from elephant seal teeth (I. Smith, pers. comm.).

Reels have long been known from the Coromandel, including Opito (Duff 1956:93, 100). Other examples from recent excavations include a large serpentine reel and small bone and fossil dentalium reels from Hot Water Beach, layer 5. An ivory reel and fossil dentalium segments are known from Whitipirorua. Dentalium nanum has been found at N40/3, Sarah's Gully, N40/2, Hot Water Beach and Whitipirorua. There is also the dentalium "workshop" discovered and described by Scarlett (1958).

Imitation whale tooth pendants of both round and rectangular section are known; a rounded example from Cabana Flats are rectangular specimens from Wheritoa and N40/3. Bird bone beads have been found at Whitipirorua, Hot Water Beach, N40/3 and Sarah's Gully. Imitation Carcharodon shark teeth are reported from N40/3; similar examples were found at Hahei. A perforated shark tooth was found at Whitipirorua, and an unperforated example, possibly intended as a pendant, at Hot Water Beach, layer 4. Perforated porpoise teeth are known from Wheritoa and Whitipirorua. Perforated shells which may be ornaments have been reported from N40/2, Hot Water Beach and Harataonga.

The only example of what has been considered an exclusively Classic Maori ornament is the possible bone comb fragment from Hot Water Beach layer 5, although some forms, such as Dentalium nanum and bird bone beads are found throughout New Zealand prehistory.

It is clear that a full range of Archaic ornaments was in use on the Coromandel Peninsula. Hahei has shown that the custom of burying people with their personal ornaments was also known there.

Miscellaneous Bone Artefacts

Tattooing chisels are not common. One small perforated example is known from Harataonga and another from Hot Water Beach, layer 4. Similar examples are also reported from Wheritoa. These are similar to examples from Mount Wellington and Motutapu (N38/37) and in marked contrast to the larger specimens from Houhora. An unusual specimen found recently at Whitipirorua differs from other known Coromandel examples in being broader, and being apparently made on a thin fishhook tab.

Bird spear points are also rare, being reported only from Harataonga and Wheritoa.

Awls are not numerous, although examples are known from Tairua and Harataonga. Needles, however, are fairly common, with small examples from Cabana Flats, N40/2, Tairua, Harataonga, Hot Water Beach and Port Jackson. Large thick bone items, which may be thatching needles, cloak pins or pendants are known from Cabana Flats and Hot Water Beach.

A moa bone burnisher or chisel from Harataonga, similar to specimens from as far afield as Houhora, Taranaki and Paremata, is not so far matched from the other sites, except for a doubtful example from Tairua.

Adzes

The typology of adzes from the Coromandel Peninsula is intimately related to the use of the Tahanga adze factory, and beyond the scope of this paper. Evidence of Tahanga basalt working is found in many, though not all, of the sites reviewed (Best 1975, Moore 1976). Broken and unfinished adze rough-outs are numerous in some sites, such as N40/2, and a few specimens are found in almost all sites. Both quadrangular and triangular sections are well represented. The most common complete adzes recovered, however, are small untanged quadrangular adzes approximating to Duff's (1956) Type 2A, and indeterminate small adzes made on flakes.

The distinctive Archaic types found include Duff's type 1A (N40/3 and surface finds at Harataonga and Whitipirorua); 2A (most sites including Tairua); 3 (mostly untanged, from Whangamata Wharf, Hot Water Beach and Wheritoa, but 3A reported from N40/3); 4A (Sarah's Gully, N40/2, N40/3 and Wheritoa); and 5 (Hot Water Beach, N40/2 and Wheritoa). Greenstone is limited to a chisel found by Shawcross at Whangamata and several gouges from Wheritoa in private collections.

Other Stone Tools

The wide range of other stone tools present in at least some of these sites includes drill points, files, grindstones, hammers, saws, used pumice and used flakes as well as waste flakes from core tool production. Jones (1973) concluded that most of the flakes at Tairua resulted from adze manufacture or were the result of maintenance activities for tools in other materials. With the exception of Port Jackson and Hahei, about which too little is known (although surface collections from Hahei suggest similar activities to Hot Water Beach), and Whangamata Wharf (which seems to have been a specialised butchering or skin dressing area at which only flakes suitable for these activities

were prepared), most sites contain evidence suggesting a wide range of industrial activity. Fishhook manufacture was practised at most sites, as was stone working, including manufacture of adzes and drill points; wood working probably also took place.

CONCLUSION

Since the first controlled excavations on the Coromandel Peninsula more than 20 years ago, evidence has accumulated from many sites. Extensive and generalised hunting and collecting with relatively little specialisation is reflected by the midden remains. Moas were hunted but appear to have been unimportant in the diet compared with seals and probably dogs and fish. Considerable industrial activity is evident at most sites, and the range of stone resources used, like the extensive midden remains indicates reasonable familiarity with the local environment. The similarities in midden content and material culture suggest that all sites reviewed may fall within the period between approximately A.D. 1250 and 1500. In particular, Tairua compares closely with the group of sites thought to date to the fourteenth century. Earlier material may be mixed in the Whitiporua or Wheritoa assemblages, or concealed in the little known Hahei and Port Jackson sites, but the best documented sites do not belong to a Settlement Phase. What these sites reflect is a successful local adaptation, associated with recognisably Archaic material culture. Durable fishing gear is a small selection of the Archaic range which was evidently highly suited to Coromandel conditions. Adze technology is based on the Tahanga quarry; other stone technology is geared to other local resources. On the evidence of Hot Water Beach, the same type of exploitation of local food resources and similar material culture continued with only minor changes until A.D. 1500 and quite possibly later.

Two main interpretations are possible for most of these sites. Either they were seasonal camps, or they were specialised activity areas within larger settlements (remembering that in Polynesian ethnography a "settlement" may be considerably larger than what most archaeologists would recognise as a "site"). The best evidence for a whole constellation of site components in close proximity comes from Sarah's Gully, where midden, working area, burial ground, and cultivation and storage components could all be contemporary. Similarly, N40/3 has sometimes been correlated with nearby Skipper's Ridge. Spring and early summer occupation has been suggested for Harataonga and Hot Water Beach, but the lack of evidence of food preservation and the difficulty of showing that the sites were not occupied in winter stand in the way of their positive identification as seasonal camps. On the other hand, Tairua has recently been identified as a winter camp (Rowland 1975). Against this variety of interpretation may be set the fact that all these sites are far more like each other than they are like any other sites. They should therefore be susceptible to one interpretation. Perhaps fuller publication of more of them and renewed enquiry into seasonality and dating, will result in more satisfactory interpretation.

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