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NEW ZEALAND ARCHAEOLOGICAL ASSOCIATION NEWSLETTER



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Reference may also be made to the views expressed by several members on the objective of archaeological research in New Zealand. It is the wholly admirable opinion of some that archaeology should be carried out to "help the Maori": leaving aside the questions of how to interpret the feelings of a group or the form in which the Maoris may expect such help, it is fair to point out that this is a fundamentally personal objective, however important it may in fact be. The subject of archaeology itself is guided by more abstract principles, the essentially impersonal ones of scientific investigation.

In conclusion, before expressing thanks to the various people and bodies who made this conference run so well, it might be appropriate to offer a little advice for future organization. Quite a number of the members found the programme a bit too intensive and exhausting. On two days the papers covered over twelve hours, ending with discussions going on long after ten at night. This indicates the level of enthusiasm, but taxed the attention. Mr Rigby Allan and the Taranaki Museum Board are to be warmly thanked for their kind hospitality, including a delicious buffet lunch, and for the excellent facilities which they put at the disposal of the Association. Mr Allan is to be particularly thanked for his tireless interest and his many kindnesses including taking members round the collections. Lastly, the programme organizers, Miss Davidson and Mr Groube, must be thanked for their creation of so successful a programme.

FORTIFICATIONS IN OTHER PARTS OF TROPICAL POLYNESIA

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In a classic monograph on the Pa Maori published in 1927, Elsdon Best, having completed an analysis of Maori fortifications, went on to make a brief survey of what was then known of fortifications in Polynesia, Melanesia, Micronesia and Indonesia. His purpose was to determine possible origins for Maori techniques of fortification by an examination of the distribution of similar constructions in the immediately adjacent areas of the Pacific as he felt those of the Maori probably did not originate in New Zealand. In a conference devoted to the study of fortification in New Zealand, this purpose would seem equally germane and therefore constitutes the focus of this paper although in scope I shall limit myself to fortifications in Polynesia including Fiji.

Best (1927: 390) decided from his survey of the evidence that while the origin of the pa maori constituted "a fair field for enquiry", it was one in which advance was possible only to a limited extent because of the poor quality of the records for the rest of the Pacific. He even made plans, according to my memory of a report read in a pre-World War I Samoan newspaper (the reference to which I have mislaid) to go to Fiji and Samoa to make the necessary studies. Unfortunately this did not come to pass, and for the next forty years or so, the problem of fortifications in Polynesia received only limited attention in most of the ethnographies and has not again been the subject of a major review. Even with the upsurge of archaeological endeavours in most of the main island groups in Polynesia since 1956, our knowledge in this field, except for New Zealand, has in some respects advanced little beyond that which was available to Best, or at least so it seems to many, though in fact, this is not entirely correct. In New Zealand the advance has its roots in the fact that fortifications are, as the very nature of this conference makes clear, a dominant part of the archaeological scene and cannot be ignored. In the island groups of tropical Polynesia this is not true to the same degree; in some cases they would appear simply not to be there, or if there, not a dominant part of the archaeological scene. Still they are not entirely lacking, especially in West Polynesia and in certain island groups of East Polynesia, and, although not as well studied as in New Zealand, a basic core of material exists beyond that available to Best on which to base a new review.

My contentions arising out of this survey will be three:

1. That fortifications are part of an ancestral pattern of Polynesian warfare, and thus did not develop independently in New Zealand, although within Polynesia they underwent their greatest development and reached a cultural peak in New Zealand.
2. That despite a low incidence of similar fortifications in many areas of East Polynesia from which most of the remaining forms of early New Zealand East Polynesian culture derive, one cannot ignore the possibility of their derivation from that source as Best and many others after him have done, and in particular a possible derivation from the Marquesas.
3. That the likelihood is great that the close parallels often noted between Maori fortifications on the one hand, and those in Tonga, Samoa, and Fiji on the other result from convergence, because the various forms derive from a common ancestral pattern. This makes more probable an explanation of later developments as parallel responses to such factors as contact with Europeans and their guns, rather than one which sees them as a result of some form of direct borrowing at a later date.

Being aware that these statements are sufficiently in disagreement with many that appear in the literature, and that the evidence supporting them is still extremely poor, they are deliberately labelled contentions open to disputation, and not propositions having the status of theories.

Best, for instance, maintained as a result of his survey that "in seeking the prototype of the Maori system of fortification we find practically nothing in all the vast area of Polynesia, comprising the central and eastern Pacific, that arrests the attention as closely resembling the pa maori except at the Tongan Group, and there it seems to have been introduced" (1927: 319). He then went on to point out that the defences of the hill forts of Fiji in the Melanesian area most certainly seem to have resembled those of New Zealand forts, and from this developed the idea that they were perhaps introduced by an original group prior to the Maori called Maruiwi or Mouriuri, who came from the Western Pacific and from whom the later Maori learned this practice. With typical caution, however, he pointed out that even if the original inhabitants were not fort builders, the possibility of a later introduction from the same area was not unlikely. In view of the evidence, however, what did seem to him unlikely was that the idea originated in New Zealand. Suggs (1961: 166) in a brief summary of the subject following a review of the Marquesan fortifications in relation to those in other parts of Polynesia, came to a rather similar conclusion, namely that "Fortification resembling the Marquesan ridge forts and stone walled forts are found throughout Polynesia; therefore they probably constitute a part of the Polynesian cultural heritage." Ferdon (1965: 75) after summarizing the data on the fortified villages of Rapa-iti takes a related but more cautious stand concluding that "Until more detailed studies have been made of these western fortified villages, a comparison with Rapa Iti pare would be of doubtful value. It is interesting to note, however, that dry fosses, cut wholly or partially through the ridge approaches to a fort at present appear to be more Polynesian than Melanesian.... Such casual comparisons as these, however, are of limited immediate value, for more detailed studies and excavations of Western Polynesian fortified villages are needed before the presence, or lack, of significant similarities can be determined." It would appear necessary therefore in the present context to make a brief review of the evidence for fortification in East Polynesia excluding New Zealand, followed up by a similar review for West Polynesia.

In such a review, as is often the case with cultural items in East Polynesia, New Zealand furnishes a good point of departure. The possible origins of New Zealand fortifications have most recently been summarized by Groube (1964). The possibilities he sees as three:

1. "Pa were present from the initial settlement period either as an endemic response to internal social and political pressures; or were imported from the homeland as part of the way-of-life of the migrants" (Groube, 1964: 141). In this view, the motivation for warfare would lie in the social structure, and need for redress in punishing offences, rather than in economic and population pressures, in which case the fortifications may have accompanied the importation of the Polynesian social and political system, although initially there would have been no great need for them. Thus, initially retained without warfare on

any scale, more elaborate fortifications could have been developed as economic and political pressures precipitated an increase in warfare. The present difficulty with this theory is neither the early fortified settlements, nor associated weapons have yet turned up in secure archaeological contexts (Groube 1964: 141-42).

2. "A second theory, accepted by most authorities as the most reasonable for the New Zealand situation, is that fortifications were invented independently within New Zealand, in response to a unique situation" (Groube 1964: 142). On this he quotes Buck:

"The fortified pa could not have been introduced by any of the three waves of settlers because it did not exist in the lands from which they came. It may be assumed, therefore, that the Maori system of fortifications was evolved and developed in New Zealand owing to some local cause that arose during the long period of occupation. The obvious cause was defence against attack, but as fighting had taken place down the ages in Polynesia, there must have been an increase in the frequency and the intensity of the attacks which forced the people to devise a system of permanent protection. This supplementary cause must have taken some time to develop." (1950: 138).

Clearly Buck's assertion in 1949 that fortifications did not exist in the lands from which the settlers of New Zealand came would reflect failure on his part to read the relevant Polynesian ethnographies. This is certainly not the case and what he probably means is that they were not characteristic of most island groups in East Polynesia. In the islands, as in New Zealand, fortifications as a part of warfare are likely to have undergone development only in response to local conditions, and thus would become characteristic of the inhabitants only if and when they were functionally desirable (Groube 1964: 143). That they exist in incipient form in many island groups of East Polynesia, I think, reflects this fact, as does their development in the Marquesas, and to an even greater degree in New Zealand. Even without knowing the specific form of the early fortifications in New Zealand, it is still necessary (as both Groube and Buck indicate) to assume considerable development of fortifications within New Zealand, although, as Groube (1964: 143) points out, separate invention need not be posited and the presence or absence of forts similar to those in New Zealand is not crucial to such a developmental view. Groube therefore accepts the concept of the delayed emergence of warfare and the pa as reasonable, and points out that this is not inconsistent with Duff's conclusions about the lack of warfare in the Archaic Phase, even though this view is based on rather limited and largely negative evidence (Groube 1964: 144). He does not feel, however, that this commits him to a position that fortifications are entirely independent within New Zealand.

3. "The third possibility is somewhat in disfavour, as theory upon which it is primarily based of separate origins for the Early Polynesian and Classic Maori cultures, has largely been abandoned. This is that pa emerged separately from the tradition which developed out of the East Polynesian phases, as a characteristic form of a people who were later to come under the label of the 'Classic Maori'. Thus fortifications would have been brought to New Zealand with the people who brought many of the characteristic items of Classic Maori Culture. Best, who supports this theory, would find the origin of the fortifications in Melanesia, but equally they could have come from Polynesia with the 'fleet', along with the kumara." (Groube 1964: 144-45).

A possibility related to this, but not considered by Groube, is that initially two subcultures, New Zealand Eastern Polynesian I and II were early established from different but historically and culturally closely related points in East Polynesia and one introduced such items as the sweet potato, fortifications, certain lure and fishhook forms, the reel, harpoon, the cloak pins and other items not found developed in the other (Emory and Sinoto 1965: 102; Sinoto, personal communication; Green 1966: 27-30). This has certain advantages in restricting the initial introduction of fortifications, yet still making it early enough to allow time for their development with an increasing population, and pressure on resources. A second group perhaps may even have acted as a stimulus to warfare.

It would appear then that the view of an entirely independent origin of fortifications in New Zealand is today somewhat in disfavour, although there is little archaeological evidence to support its introduction with initial settlement. Given the overwhelming evidence for the derivation of the rest of New Zealand's early culture from East Polynesia, we are left with the necessity of reviewing the evidence from there for possible parallels and sources, before totally rejecting, as have Buck, Best and others, origins within this area.

In East Polynesia, Best reviewed the then available evidence for fortifications in Hawaii, Tahiti, Rapa, and the Marquesas. In Tahiti and Hawaii, he found that, with few exceptions, fortified settlements or artificial fortifications were not normally constructed, use being made instead of natural defences in which retreat to such easily defended positions took place. In fortifications of the Marquesas, though remarking on the parallels in fighting stages, narrow protected entrance and heavy stockade, he noted an apparent lack of earthworking defences and so failed, despite Forster's comparison to the pa of New Zealand, to find in them much similarity. On Rapa some parallels with the hilltop forts were again noted, but his main plea was for a thorough observer and recorder who would furnish the needed details. Let us briefly review the additional literature since his time, which has to some extent filled in these details.

EAST POLYNESIA

Warfare in East Polynesian societies at the time of contact seems to have been endemic, except perhaps in the Chatham Islands. However, those particular patterns of warfare which are generally associated with permanent forms of fortification did not everywhere develop, and often they seem neither to have been required nor to have been entirely feasible. For convenience of discussion, therefore, I have divided East Polynesian societies into three groups:

- (1) those with little evidence of fortification and little to be expected, because of both geographical restrictions and the nature of local warfare patterns;
- (2) those with little evidence of fortification, although geographically more could have been attempted than is in evidence, presumably because the open nature of the local patterns of warfare did not require them; and
- (3) those with well developed fortifications in which one can see a relationship both to the type of terrain and the pattern of warfare that has developed.

It is, of course, these last which exhibit the closest parallels to the types of warfare and fortifications found in New Zealand. The parallels, therefore, may have a functional as well as a historical basis.

A. Little evidence of fortification and none really expected:

The Tuamotuan chain of atolls - No fortifications are recorded in this chain by Emory (1947) and more recent surveys by he, Sinoto (personal communication), Garanger and Lavondès (1966) have not revealed any, although the stone-walled enclosure type is a possible form. Presumably they are lacking because inter-island raiding by sea was the prevailing form of warfare.

Rurutu - Here the geographical configuration of the districts, which follow the crests of natural embayments does not favour the development of fortifications on the elevated heights, and tradition mentions only the existence of observation posts at certain strategic points (Verin, 1965: 450).

Mangareva - As in Rurutu, neither the geography of the districts nor the pattern of warfare favours elaborate permanent fortifications in what is a tiny high island group, and none were seen by either Emory (1939: 16)

or myself (notes for 1959 survey). We have then only a traditional account of a fortification consisting of free standing stone walls and these were only debris when recorded in 1834 shortly after contact (Laval, 1938: 127).

Easter Island - While accounts of warfare on this island are too well known to be recounted here, fortifications are very uncommon. Maunga Auhepa, an artificially flattened and terraced hill, may have served as temporary defence in Ferdon's opinion (1965: 75) but he feels it can hardly be designated a real village and fortification complex. Other than this, there is only the Poike ditch whose initial construction dates on the best evidence to circa A.D. 1670 (Green, 1967: 224). While in the Heyerdahl interpretation its construction was for defence, an interpretation based largely on traditional evidence, Emory (1963: 566) using the archaeological evidence equally plausibly shows its main function may have been agricultural.

B. Little evidence for fortifications, though more than is in evidence might be anticipated:

Southern Cooks - Working through the standard ethnography (Buck 1944) and in discussions with H. R. Parker, it seems that, while geographically feasible, earthworking devices like those encountered in New Zealand are unknown. Parker (in personal communication) noted that there are punanga, or terraced hillsides, but these are not necessarily to be interpreted as fortified villages. Rather it seems that in Mangaia and Rarotonga at least, the pattern of warfare did not require major fortifications. On the other hand, there is an interesting traditional account of a warrior from Tahiti who convinced the people of the island of Mitiaro to defy the warriors from Atiu by building a stone walled defensive fort in the middle of the raised reef known as the makatea in which raised platforms lay behind and above the walls and from which they showered sling stones down on the enemy inching his way over the sharp coral (Buck, 1959: 112). This account would seem to indicate that the stone walled type of fortification, although unrecorded as yet archaeologically, may occur in some of the Southern Cook Islands.

Raivavae - Marshall (1961: 108-114), in a romantic account, gives a description of the "mountain fortress" of Hatuturi, the lower terraces of which Skjölsvold (1965: 109-116) had earlier cleared and mapped. Their descriptions differ somewhat with Skjölsvold being the more cautious and providing fuller details, although both agree with a local tradition that they constitute an entire village complex located on an easily defended position which probably served as a place of retreat and refuge. Both tradition and a C14 determination indicate a date in the late 18th century. The presence of shell and kitchen midden; pits for the storage of fermented breadfruit paste; pavements, some of which

appear to be house sites and others marae; all suggest a fortified settlement and not merely a temporary place of refuge. Apparently, not seen by Skjölsvold, but reported by Marshall (1961: 113), at the upper end is a "deep man-dug foss (which) completely cut off the entire fortress from the mountains behind." Marshall (1961: 108) also reports that Taurai'i, also Skjölsvold's informant about Hatuturi, maintained it was but one of several mountain fortresses.

Hawaiian Group - Best, in his description of Hawaiian fortifications, had largely to rely on the historical accounts of Ellis and Westervelt. From them he gleaned the information that there were pali, usually naturally defended ridge positions with steep cliffs; pa kaua, fortified enclosures to which prominence had been given as the result of the building of forts by Europeans (pa itself simply referring to a fenced or enclosed place); and pu'u kaua or battle hills. In these accounts stress was laid on fighting in the open and on attempts to take defended hills, eminences or natural strongholds, whereas earthworking devices like those of the Maori were not recalled. Since then archaeology has revealed a few instances of stone walled enclosures that are demonstrable prehistoric, as at the city of refuge on Hawaii, so the historic examples with European innovations like apertures in the upper parts of the walls may reflect this older type. On the other hand, it has also revealed the existence of a few ditches cut across ridges on both Oahu (McAllister, 1933: 250; Ka Na'i Aupuni, 1906) and Lanai (Emory, 1924: 75), though traditions associated with those above Nu'uaniu on Oahu indicate their use as gun positions against the forces of Kamehameha. However, other such 'notches' in ridges inland on Oahu are known (Peter Chapman, personal communication) and it seems likely that both the devices of stone defensive walls and cut ditches across easily defended ridge positions were known prehistorically.

Society Islands - In the Windward Society Islands no significant artificial fortifications are known despite extensive surveys by Emory (1933), Garanger (1964), Verin (1964) and Emory and Sinoto (1965 and personal communication). This is consistent with the ethno-historical literature which, while mentioning mountain strongholds as places of retreat, means by these, as Morrison's (1935: 102) vivid account makes clear, positions in which the defenders relied on natural features of the landscape. In fact, much of Tahitian warfare at the time of contact seems to have centered on clashes between fleets of large war canoes, a pattern of warfare which altered rapidly after contact with the Europeans and access to their guns, giving way to skirmishes on the land accompanied by widespread destruction of property (Newbury, 1961: xli-xlii). Thus, only one foss or ditch has been reported from the island of Tahiti, and this one is interpreted by Verin (1964: 27) as not for defence but for agriculture. All other known forts

with either stone walls or ditches, including one built by Cook on his first visit, are historic and of European inspiration. The same applies to the three fortification walls associated with Maeva village on Huahine in the Leeward Islands. Although their use as fortifications has been described by Ellis, and they were designated as fortifications by Emory (1933: 45 and 137-38) more recent studies by Sinoto and Emory (personal communication) ascribe them to the historical period. Emory has also recorded a fort with trenches on Raiatea but, again, it is clearly of an historical origin. Handy (Emory 1933: 153) recorded two sites, one a series of terraces cut into the side of the hill west of Uturoa and another a set of five and then two terraces on the crest of a ridge overlooking Tepua Valley on Raiatea. Both he interpreted as forts, though on what grounds it is uncertain, and the first, at least, would probably not be so classed by most other archaeologists, while the second may well be a habitation complex occupying a naturally defended position similar to the terraced portion of Hatuturi in Raiavavae or sites in Rapa. The two known and probably prehistoric fortifications in the Society Islands then, both of which use free standing walls to enclose and cut off a ridge or defend a piece of steeply rising ground, are on Borabora (site 235, Emory, 1933: 166) and Maupiti (site 238, Emory, 1933: 169-70). Tyerman (Tyerman and Bennet, 1831, II: 21) who visited two forts on the great mountain of Paia on Borabora left a similar account of such forts with stone walled defensive enclosures.

C. Island Groups with well developed fortifications:

New Zealand - While the best example in this category, its numerous fortifications will not be further discussed as it is the main theme of the conference and many papers.

Rapa - Due to the geography of Rapa, few sites were encountered on the coast, but many including some 25 identified as pare were recorded on the interior mountain crests and ridges. Some of these are unfortified auga, or dwelling sites, and others are fortified pare, some of which doubtless had been auga, and were later fortified. Ferdon (1965: 18 and 70) on the basis of survey evidence suggests that development proceeded from an initially terraced village complex with a citadel tower at its centre, the terraces being dispersed and using little stone walling or facing, to the later and well defended pare sites with tightly clustered terraces, extensive use of masonry walls and numerous ditches cutting off one area from another, as well as guarding the perimeter. Often the access across these ditches was by way of a narrow earthen causeway left as a remnant during excavation, a type of access also found across some ditches in the fortifications of New Zealand and Samoa. Obstacle pits were also noted. Some of these terraced hill villages were still occupied on first

discovery in A.D. 1791 and the final occupation of Morongo Uta is radiocarbon dated from the late 17th to the mid-18th century A.D., so there is no question of their antiquity or prehistoric status. Nor is there much doubt, based on the adzes, poi pounders, and other artefacts as well as a few rectangular fireplaces, that they were designed as villages to be lived in, even if bad excavation practices failed to reveal significant post mold patterns for the presumed houses (Mulloy, 1965; Ferdon, 1965).

Marquesas - Two types of fortifications are well known ethnohistorically and archaeologically in the Marquesas (Handy, 1923: 142-43; Linton, 1925: 20-23; Suggs, 1961: 163). The first is the ridge fort defended by ditches and palisades, behind which was erected a fighting stage which warriors ascended by ladders to hurl spears and stones on the enemy. Records of four of these forts are known from Nukuhiva and two from Uahuka. I have found no record of this type yet for the southern Marquesas. The one on the summit behind Vaitahu Bay is least certain. It was probably this to which Mendana referred in 1595 (Markham, 1904, I: 23) when he reported "the natives reached the summits of three high hills where they entrenched themselves". This at least was Forster's opinion, when in 1774 he and several others ascended part-way up this ridge before becoming tired. Here with the aid of glasses they were able to discern what they presumed to be a row of stakes or palisades around the fort's edge and within something like huts (Forster, 1777, II: 23-6), Cook, simply notes dwellings or strongholds seen through glasses on the highest hills (Beaglehole, 1961: 373). Chanal (Marchand, 1796, I: 85) searched in vain for such palisades on these heights in 1791, without finding them and the site remains to be verified archaeologically. On the other hand, one of the two ridge forts recorded by Suggs (1961: 27) in Taiohae Valley was fully described by Porter in 1813. Suggs did some test excavations on the other with little result. However, on the basis of a Transitional paepae on its surface, he assigned it to the late Expansion period, and states that frequent use of this type of fortification dated to the Classic and Historic periods (Suggs, 1961: 163). A fourth example is reported as Ta'atapu in Taipivai. On Uahuka, Sinoto has identified two additional examples, one of which is a ridge end divided into three sections by three transverse ditches, the main one of which is some 15 meters deep and 12 meters wide. Two 5 by 10 meters pits, some 3 meters deep, appear on one side and levelled terraces are in evidence within the defences. This site reminded Sinoto (personal communication) very much of a fort (Lu-41) which he had seen when visiting us in Western Samoa.

The other type of fort has stone walls, varying ground plans, and is usually situated on the flat. Suggs thinks they were designed more

"for emergency protection than for prolonged sieges, as breadfruit storage pits do not seem to have been included, and the forts are generally small" (Suggs 1961: 163). Forts of this type are well known from early historical accounts and occur in both the North and South Marquesan Islands. Some were built or fitted with loop-holes in response to the introduction of gun warfare, a factor which may also have stimulated the development of the completely enclosed form.

WEST POLYNESIA

It is not possible here to cover the fortified sites of West Polynesia and Fiji in the same detail, nor does that seem necessary to make the point that fortifications are not restricted in general to Tonga as Best and others have assumed, but are also common to Samoa, East Futuna, East Uvea and probably Niue. Similar fortifications occur in the Lau Group of the Fijian Islands (Thompson, 1940: 104, 216-20) and are well developed in certain areas on the main islands of Fiji (Palmer, 1967: 2-15).

Tonga - Many of the fortifications on Tongatapu have recently been recorded and mapped (Davidson, 1964; R. C. Green and J. Terrell, notes and plans, 1964) in order to fill out the published records of McKern (1929: 80-88) before some of the earthworks disappear entirely. None has been excavated, although the impression remains that most are late and tied up with the period of historically known wars and the development of villages in the late 18th and early 19th centuries (Kennedy, 1958: 162-64). However, it was observed that several forts, including the famous example at Pea, would appear to have been rebuilt and enlarged at least once, an indication that some may have greater antiquity than the last events with which they are traditionally associated. Indeed, the fortification at Mu'a, related to an old shore line, is traditionally dated to the 14th to 16th century (Davidson, 1965: 63). In plan the fortifications range from simple ditch and bank enclosures to very large and complex structures that had as features: palisades; entrance ways with various types of offset defences, platforms, and log gates; pit man-traps; and at intervals raised platforms at the top of the palisade which projected slightly over it from which spears could be thrown. Similar fortifications are also reported by McKern from the Vavau and Ha'apai groups in Tonga, so the single and multiple ring ditch form is not necessarily a product of the flat terrain of Tongatapu.

Samoa - Except for an ignored account in Kramer (1902: 337), the fortifications of Samoa are not well described in either historical sources or standard ethnographies. They are, however, in evidence,

especially on the island of Upolu (Golson, 1957: 19-20; Green et al, 1963-67 notes and plans). On Savai'i four are ridge or ridge peak fortifications with ditch and bank defences (Buist, 1967: 44) while the fifth is a ring ditch enclosure with numerous protected entrance ways, "loop-holes" that were probably for guns, and a stone facing on the inside of the bank, features which place it in the historic period (Scott, n.d.). As well, a large high stone wall with periodic entrance ways, extending across a ridge between two deep valleys probably had a defensive function similar to a number of single earthen ditch and bank defences on Upolu which occupy similar positions across ridges. Fortifications consisting of a series of transverse ditch and bank defences across a ridge, often with terraces, platforms, mounds, and even large pits within, are a common form on Upolu (see plan, Green 1964). Other features commonly associated with them are entrance ways through the banks and narrow earthen causeways leading across the ditches. As well, other fortifications consisting of terraced hill tops with partially ringed ditches are known. In some are earthworks of a type associated with gun warfare while others are associated with traditional accounts of historic battles in the 19th century. It is likely that many derive initially from the prehistoric period, however, and Samoans often attribute them to the period of "Tongan domination in the 10th to 13th century A.D." From the historic accounts (Erskine, 1853; Kramer, 1902, II: 337) we know the banks carried palisades, while the entrance ways had log gates and platforms associated with them as in Tonga. Other fighting platforms were spaced along the walls, which served for firing arrows and spears, throwing stones, and later with gun warfare primarily as observation posts. Fortifications like the Tongan and Samoan ones are known both archaeologically and historically from East Uvea (Burrows, 1937: 44-45, 83-84). Rather similar examples are known from East Futuna (Burrows, 1936: 123, 126).

CONCLUSION

Certainly the history of fortifications and their development and distribution is more complex than what we can now trace, but the evidence is much better than that available to Best. In fact it would appear that basic fortification devices such as stone walling, terracing, ditches and banks, palisades, and fighting stages have fairly wide distribution throughout Polynesia. This distribution and in particular their appearance in East Polynesia, from whence much of the rest of New Zealand's prehistoric culture derives, would seem to cast doubt not only on those theories which claim for the Maori the independent innovation of these devices, but also on those theories which cite their failure to reach the same level of development in the

rest of Polynesia as evidence of Maori contact with Fiji or islands farther to the west. Rather, the evidence would seem to indicate that these devices were part of the general pattern of Polynesian warfare, and where that aspect of warfare which required them was elaborated, one also finds their development into various sophisticated types of fortification. Thus New Zealand represents a peak of their development in East Polynesia and Tonga a peak in West Polynesia, and one that is obviously related to Fiji. This phenomenon of a cultural peak is, of course, common in Polynesia.

Influenced by theories in the early accounts which they used, Best (1927: 310, 319) and McKern (1929: 81) support the notion that the fortifications of Tonga were derived from contact with the Fijians, and in turn it was the Tongans who taught the Samoans. While a tenable position, it seems likely that basic elements of fortification were present from a much earlier period than Best and McKern assumed, so that it may equally well be the pattern of development in very similar ways from Fiji to Tonga, Samoa, and East Futuna and Uvea that is the result of this later contact. As in New Zealand many of the known fortifications are late, belonging to the historic period, so that their elaboration and number has been influenced by gun warfare. Also these island groups were, unlike many in East Polynesia, in continual contact over many centuries and this included inter-island warfare. As a result, any innovation in one island group would have fairly quickly spread. For this reason the fortifications of West Polynesia, including those of Fiji, impress one as forming a single cluster which include features like elaborate entrance gaps with log gates not found in East Polynesia. Moreover, they employ a single term for their forts, kolo, which is found with this meaning only in Tonga, Samoa, East Futuna, East Uvea, and Niue. The word with this meaning is lacking, however, in Easter Island, Hawaii, Tahiti, the Marquesas, Tuamotus, Mangareva, Tikipia, and West Uvea, while the word, with a related meaning, appears only in Rarotonga where it supposedly means enclosure or palisade. In short, the term as a reference to a fortified site is almost completely lacking in East Polynesia, and is probably not well known in many of the Outliers. In Fijian it has a primary meaning of village, but has taken on the strong secondary meaning of fortified village (Walsh and Biggs, 1966: 37, and Walsh, personal communication). This distribution may be contrasted with the Polynesian-wide distribution of paa meaning enclosure or fence, a form which is also applied in some island groups to a palisade and in others may mean a wall, usually of stone (Walsh and Biggs, 1966: 80). The use of paa without a following qualifier to refer to a fortified site is seemingly restricted to Tahiti, the

Marquesas, and New Zealand, while pare with the same restricted meaning is found in Tahiti and Rapa.

Therefore, to return to the initial contentions, if the New Zealand forms of fortification are postulated to be a later introduction from somewhere in West Polynesia, rather than explained as convergent lines of development, only certain of the ideas and none of the terminology would seem to have been introduced. Moreover, an introduction from West Polynesia or Fiji means using convergence to explain not only the more exact parallels between the Marquesan ridge fortifications and those in New Zealand but also the use of the same meaning for the term paa. In view of the fact that most of New Zealand's basic culture initially derives from East Polynesia, and that certain items are found in the early assemblages of the Marquesas and New Zealand that are lacking in those from the Society Islands, a far more economical explanation would be to posit an origin for Maori fortification in East Polynesia as well, with the Marquesas being the most likely source on present evidence. In such a view the ancestral form which could have given rise to both the New Zealand and Marquesan forms is not too difficult to predict. The problem is to demonstrate this or some other theory archaeologically.

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