SITES AND SETTLEMENT IN HANE VALLEY, MARQUESAS

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PREFACE

I am indebted to the Bishop Museum and to the Librarian, Miss Margaret Titcomb and to Mrs. Elizabeth Ann Larsen of the Hawaiian Mission Children's Society who made available unedited manuscripts and letters written in the Marquesas in the late 1700's and early 1800's.
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INTRODUCTION

The Marquesas, characterized by a prevalence of steep slopes, separated valleys, and a lack of coastal plain and fringing reef, are different from most of the other high islands of Polynesia. Remnants of the oldest culture in Eastern Polynesia are to be found there since they were the first islands to be settled east of Samoa and Tonga. Later migrations established the first settlements on Tahiti, Easter Island, Mangareva, Hawaii and New Zealand.

The material for this study is limited to the one valley of Hane on the island of Uahuka. It was chosen not because it was thought to represent a typical Marquesan settlement, but to complement the excavations of well-stratified coastal sand dune site at the head of Hane bay. The island of Uahuka probably never achieved the importance of Hivaoa and Nukuhiva in terms of population size and historical developments; therefore, the Hane settlement can not be considered typical. When the surface structures are compared to other ones in the Marquesas reported in the literature (Linton 1925 and Suggs 1961)—especially to those on Hivaoa and Nukuhiva—the Hane structures appear to be much simpler and less varied. Previous visits to all the remaining islands and field work on Hivaoa and Nukuhiva confirm this impression.

The original plan was to do a comparative study between the Hane Settlement and the settlements of Opunohu on Moorea (Society
Islands) and of Vitaria on Rurutu (Austral Islands). The material gathered in Hane and in Vitaria is somewhat comparable, but that from Opunohu, gathered and presented differently, is much less, so the project was rejected for two reasons. On the one hand, the three areas of study represented an arbitrary choice since the selection was based on the opportunity of doing field work rather than by a pre-established research plan or hypothesis. On the other hand, such a comparison would have been premature when it is taken into consideration that the results for the numerous other settlement pattern studies in Polynesia, some still in process, are not yet available (Roger Green for Mangareva 1959 and for Moorea in 1960 and 1962, Jose Garanger for Tautira valley on Tahiti, 1963, Peter Groube for New Zealand, 1964, Janet Davidson and R. Green for Samoa, 1964-68, and Peter Chapman for Maui, 1967-68).

This study is the first attempt in the Marquesas to survey all the sites within a localized area, to form a typology of these sites, and to reconstruct the settlement pattern; the immediate goals beyond these are in this instance very limited. One aim was to try to connect the inland settlement with the very early occupation of the coast. This has been only partially successful because no vertical time depth scale has yet been established for the inland structures. Another aim, was to trace a continuity between the past settlement and present settlement. This was found to be difficult because of a radical breakdown in Marquesan culture following European contact.
One hundred and seventy six sites were surveyed in the Hane valley. A site is defined as a distinct surface structure complete in itself. Some sites may be composed of several structures each having special features but together forming one site. Several sites in close proximity can form a cluster of a site complex and many complexes form the settlement. The overall placement of these sites to one another and to the physical features is the settlement pattern. K. C. Chang distinguished between the two by defining the settlement pattern as "the manner in which human settlements are arranged over the landscape in relation to the physiographic environ" and community pattern as "the manner in which the inhabitants arrange their various structures within the community and their community within the aggregate" (1958:299). ("An aggregate is the gathering of a certain number of communities which are bound by close social, political military, commercial or religious ties") (ibid.:307). In this study settlement pattern refers to both of these aspects.

According to Chang, the primary determinant of community pattern on the Neolithic level is the economic adjustment of the community (ibid., 1958:300). This refers to the means of subsistence, the production of immediate needs and food surpluses. Other interrelated factors are the ecology, population size and the socio-political organization of the inhabitants. In the Marquesas the physical environment (including land forms, soil, climate, vegetation water supply and their interaction) is less favorable than it is elsewhere in Polynesia. The fragmentation of the areas suitable for agriculture and settlement into valleys, separated by sheer and
rugged barriers, tends to set narrow limits upon separated population groups. The climatic conditions are characterized by recurrent droughts, the effects of which could last several years. A relatively high proportion of the land had to be excluded from any assessment of available resources. In these adverse circumstances the agricultural production seems to have remained marginal without ever going greatly beyond the level of subsistence. What little surplus that was produced was used during the periods of famine, which were too often a reality. The absence of a lagoon made the procurement of marine resources more difficult and the quantity and variety much more restricted. Therefore, the inhabitants were always very rigidly dependent upon the natural land resources over which their technology, as a whole, did not give them a great control. Furthermore, physical form of the islands in promoting separation and isolation did not encourage the development of culmative processes which would have enabled the Marquesans to gradually build a more elaborate social organization and division of labor accompanied by the emergence of a real class of specialists having a more refined technology. Undoubtedly, this 'stagnation' is connected to the chronic state of insecurity which in turn must have been linked to the high population density. The characterization of stagnation is debatable. It is not known to what extent and at what length of time it existed in the Marquesas culture-history. While the technology (for example adzes) shows a general regression, in isolation, in spite of some fluctuations, the surface structures on the other hand indicate, in general, the reversed tendency towards a growing size and complexity.
It can be said, on the whole, that a relationship does exist between the past and present conditions. Handy, in 1923, verified the reality of a Marquesan culture by his description and discussion of such topics as the history and the social and political structure. Generally speaking, the traditional culture continues to affect that of the present day. This is as true in the realm of settlement pattern and material culture as it is in social structure. However, even though there is a certain continuity, it is difficult to trace at the level of isolated or particular examples. This can be explained most of all by the catastrophic depopulation of the islands which until about 1926 seemed to threaten the complete annihilation of the Marquesan population. This decline in numbers caused a discontinuity in the sense that entire sections of the ancient culture were discarded and were irretrievably lost. In the realm of oral traditions, the more generally known legends were transmitted (Handy, 1923; Lavondes has collected over 1000 pages of legends from the island of Uapou—now, in process), but the traditions and genealogies of individual social groups, of critical importance in a reconstruction, have for the most part been completely forgotten. The study of the continuity of such groups and of settlements by the use of archaeological and ethnographical methods would be more profitable in other polynesian island groups such as the Tuamots, the Australs or in Samoa where there was not such a severe demographic decline. In the Marquesas, the discontinuity was further accelerated by the impact of westernization. Roman Catholic ideology has left its strong imprint on the present culture and social organization.
In addition to the field work, the main source material for this study has been assembled from literary sources and from archaeological reports, unpublished field notes and personal communications. The literary material is composed of three main kinds of documents: 

a) early manuscripts and missionary letters and records (Crook 1797, Lawson 1867, and Lailoa 1867); b) the ethnohistorical accounts by the early explorers and residents, and c) anthropological studies and interpretations (Handy 1923 and Sahlins 1958). Regarding archaeology, until very recently, all the studies were oriented towards a survey and description of individual surface structures and to the excavation of these sites as well as caves and open coastal sites. In these excavations, the initial aim was to establish a local chronology based on the occupational levels, the sequences of artifacts, and carbon dating. The eventual aim was to fit this data into the framework of Polynesian archaeology and history in order to reconstruct the time and order of migrations and settlement of the different island groups. Settlement was not a major consideration.

In the 1920's Ralph Linton of the Bishop Museum was the first person to carry out a systematic archaeological investigation of the Marquesas. His comparative study of Marquesan structures is based on a survey of 186 sites distributed on the six main islands plus Eiao. However, this survey is by no means complete for any one valley; and house sites, the principal units of settlement, are omitted from the general discussion. It is useful as a general reference because it lists and describes sites on all the islands at a time when the sites were less disturbed than they are today. Many still had wooden objects
(tiki and posts) remaining in position, and Linton's guides could often identify individual sites by name and relate something about their function. Today, there is very little carry-over of such knowledge.

The first excavation of Marquesan sites was done in 1956-1957 by Robert Suggs of the American Museum of Natural History. He made two field trips and spent over a year on the island of Nukuhiva where he surveyed or recorded 46 sites (25 architectural surface structures, 8 caves and rock shelters, 2 coastal dune sites, 6 petroglyph sites and 5 miscellaneous sites). These were scattered around the island in eleven principal areas. Twenty sites were excavated, or at least tested, and five were dated by radiocarbon. The latter did not include any surface structure, although thirteen were at least partially excavated (Suggs 1961).

Suggs, on the basis of radiocarbon dates and artifact seriation, divides the Marquesas prehistory and history into five developmental periods commencing at 120 B.C. These are the Settlement Period of 250 years, the Developmental Period of 1000 years, the Expansion Period of 300 years, the Classic Period of 390 years and the Historic Period from 1790 to the present. Each period is described in terms of the socio-political organization, settlement, economic base and technology to the extent that these may be reconstructed from the archaeological data (Suggs 1961:174-192).

In 1963, Arne Skjolsvold and Gonzalo Figueroa of the Oslo University surveyed and excavated surface structures in Puamau and a coastal shelter in Hanapeteo, both on the island of Hivaoa. Their
report is not yet published.

The Bishop Museum recommenced its archaeological investigations in the Marquesas in 1963 and until 1966 undertook three field trips which were directed by Dr. Y. Sinoto. The first work was done on Hivaoa where two rock shelters and four open sites were excavated in Atuona. These sites turned out to be very poor but a general surface collection of artifacts was made in the valley (Sinoto and Kellum 1965). In 1964 the MUH1 coastal site in Hane was excavated and in 1965 these excavations were continued by Sinoto. At the same time the inland sites were surveyed by this writer. At the end of this field season, weeks were spent in Nukuiva reworking Suggs's Ha'atuatua site. This was Suggs's earliest site and the results of the work there clarified a number of points, primarily regarding his dates and chronology, which up until then had posed some serious problems.

In this study, Chapters II and III provide information on the physical and cultural setting of the Marquesas. Chapter IV contains a classification and summary description of the inland sites and of the artifacts which can often give a clue to relative dates and past activities of the sites and settlements. Individual site descriptions have been omitted to reduce the volume of this report. Data from Chapter IV are reviewed in Chapter VI to reconstruct the ancient inland settlement pattern. Chapter V, the present village settlement, is described in order to provide a basis for comparison between the past and present situations which is the topic of Chapter VII.
Fig. 1. Hane, Uahuka
Fig. 2. Marquesas Islands
CHAPTER II
THE PHYSICAL SETTING

The two words that best convey the impression of the Marquesas are isolation and ruggedness. To many, the islands, due to their formation, are pervaded by a feeling of oppressiveness and inhospitableness. There are no other islands like them in Polynesia.

The Marquesa islands, in their location in the central Pacific ocean are isolated from all other island groups. Tahiti lies 800 miles to the southwest, the Tuamotus 300 miles to the south and southwest, and Hawaii over 2000 miles to the northwest.

Secondly, the islands are isolated from one another. In the chain that extends northwest-southeast for 360 kilometers (or 230 miles) there are ten islands. Geographically, and, to a certain extent, linguistically and culturally, they are divided into two groups: the Northern or Leeward Islands (Eiao and Motu Iti (uninhabited), Nukuhiva (Uahuka and Uapou) and the Southern or Windward Islands (Fatu Uku (uninhabited), Hivaoa, Tahuata, Motane (uninhabited) and Fatuhiva). Distances between the islands run from about 30 to 60 miles of open ocean except between Hivaoa and Tahuata which are only four miles apart.

For the total land area of the Marquesas many different figures can be found. (Some of the confusion seems to stem from
equating square miles with square kilometers.) The correct figure must be about 1200 kilometers square (490 sq. mls.) which is not much larger than Tahiti and Moorea. The largest islands are Hivaoa (390 kilometers square) and Nukuhiva (320 kilometers square). The remaining inhabited islands are approximately the same size with Uahuka being about 166 kilometers square. Mountain peaks range from 1200 meters on Hivaoa, Uapou and Nukuhiva, to 1100-1000 meters on Fatuhiva and Tahuata, down to 740 meters on Uahuka (Deschamps and Guiart 1957:84). Uapou and Nukuhiva are visible from Uahuka and on a very clear day the island of Hivaoa can be discerned. Sleek slopes and rugged divides between valleys have contributed to the fragmentation of settlement and the isolation of one valley from all others. There are no barrier reefs, no lagoons, on coastal plains. High mountain ridges extend across the central part of each island and branching from this are narrow ridges that extend down to the sea so as to divide the island into a multitude of small V-shaped valleys or forming an occasional larger amphitheatre-headed valley. Overland communication between two adjoining valleys is often hazardous or difficult and sometimes impossible.

For miles along the coastline there are only high vertical cliffs fully exposed to the open ocean: landing would be impossible. It is usually only at the embouchures of the valleys in a semi protected bay that sand or shingle beaches can be found. And it is precisely here that occur sites indicating earlier habitation.

The natural conditions are generally not suitable for coral growth though some coral does occur in sheltered areas, usually in
bays facing north. Pearlshell also occurs.

**Uahuka:** Uahuka is a crescent shaped island 1 1/2 by 8 kilometers with a central mountain ridge running the length of the island in a semi-circle. The northern side of the island from Tetutu point on the west to Ha'avave on the southeast is now dry, barren and deforested from sea level to about 1 1/2 kilometers inland (Adamson 1935:65). It is presently said that there are no permanent flowing rivers along this northern side. Much of the destruction was caused by goats which still roam over the northern slopes. South of the ridge, the vegetation changes to a very lush and dense forest. The only valleys that are inhabited—the long, narrow valley of Vaipaee, the amphitheatre-headed valley of Hane, and the smaller adjacent one of Hokatu—are situated along the southern coast. The overland distance between Hane and Vaipaee is seven kilometers, between Hane and Hokatu 1.7 kilometers. There are also other trails that connect these valleys with other bays.

**Climate:** The Marquesas climate is tropical and the temperature range is between 70 and 90 degrees F. The two main seasons—the rainy and the dry—are not as well marked in the Marquesas as they are elsewhere in the central Pacific (N.I.D. 1945:266). Rainfall tends to decrease from south to north. Each island has a wet southeast and a drier northwest side, a difference clearly shown by the vegetation. Recurring droughts are characteristic. Annual rainfall can vary from about 90 cm. to over 270 cm. (ibid.:265).

The prevailing winds, the southeast trades, blow regularly during the months of April through October and bring fair weather.
During the remaining months the winds are more variable and may move between the east and north-northeast and become of gale force.

The winds, apart from their effect on the weather, were important to the Marquesans as they in turn effected the conditions for fishing and for voyaging. At one time they could differentiate thirty-two winds, but by the 1860's this knowledge was lost and they could only distinguish six (N, NE, E, S, W and NW) (Lawson MS 1867:n/p).

Within a section of the island and even within a single valley, there exist micro climates. On Uahuka, the plateau region between Hane and Vaipae is rather dry but the road is paved with stones. According to informants this was done at a time when the climate was wetter and this area was prone to becoming very muddy. The stream bed of Tekomako valley which adjoins Hane valley to the west is presently completely dry yet one generation ago there were shrimp in this river and taro gardens on the valley slopes. Goats may be partially responsible for this change by having destroyed the original vegetation which in turn would effect the amount of precipitation or the degree of runoff. In Hane valley the moisture increases as one goes inland; the coastal zone is rather dry. However, the difference here is not due to goats or to the vegetation but to the differential distribution of rainfall and to the soil characteristics in the two zones.

Tidal waves: The Marquesas are prone to tidal waves. There are records of several occurrences. Because of the bay-head formations, and the flat floors of the typical valleys, low-lying areas at the valley mouths are likely to be inundated and great destruction
has been recorded in several instances. Andean generated waves are apt to be particularly destructive.

Effect of the Environment upon Marquesan Culture: Isolation implies cultural differentiation (Vayda and Rappaport 1963:135). That cultural differentiation did exist between the northern and southern group—and even between islands within each group—can be confirmed by the accounts of the early explorers and missionaries, and continues to be noticeable today. The use of horses for overland travel and outboard motor boats for sea travel have not entirely overcome the natural barriers which have a similar effect today as they had one thousand years ago.

When people live for generation after generation in such environments with severely limited room for expansion within the valleys, there is bound to be an effect upon population size, culture, social organization and even the temperament of these people.

Vayda and Rappaport then ask the converse: Can appreciable cultural differentiation develop only in isolated communities? (1963:136). This question, however, they do not fully answer; nor will it be answered here. In the Marquesas there was an overall unity of culture which would suggest that either all the islands were settled at approximately the same time by the same Polynesian migrant group or that there were more than one migrant group but that they were quickly assimilated into the already existing culture. (Handy has suggested that there was a later second wave that settled in the northern Marquesas and slightly modified the local culture (1923:19)). In general, however, the people adapted to their environment in the same
way throughout the different islands and valleys. It was probably only with the passage of time that local differentiations arose and it is on this scale that it should be considered in the Marquesas. Isolation was not complete.

Though the theory of environmental determinism is not generally accepted today, in the Marquesas the environmental limitations must have had a direct effect in the formation of the Marquesan culture.

The marked influence of environment on the people and on their culture may be briefly noted. The isolation of the deep valleys, inaccessibility by land and by sea had much to do with the tribal development, continuous warfare, and the lack of a nationalistic tendency in political organization such as that which developed in Tonga, Tahiti, the Cook group, and Hawaii... Indeed, one has become acquainted with the ruggedness, the stupendous rock structure and the unprotected coasts of these islands cannot help feeling that much that distinguished the natives of the Marquesas and their culture from the peoples and cultures of other groups in Polynesia... is a direct result of the nature of the islands in which they lived. The environment is massive, strong, and vigorous; the people and their culture are to be characterized by the same terms. (Handy 1923:8,9)

Historical Descriptions of Settlements: Archaeologically it is known that sites occurred both inland and near the coast. The aim in doing a historical research was to find additional ethnographic information on these settlements in terms of location, size, individual site descriptions, the arrangement of the sites or any other miscellaneous items that could be used in the reconstruction of the settlement pattern. Unfortunately, however, few details were found other than those regarding house descriptions. (This will be included later in the section on House sites.) The following is presented as a tentative reconstruction of some of the changes that may have occurred prior to and during the main period of European contact and
is based on fourteen accounts written between 1595 and 1814 and one in 1842.*

1600-1775 Sometime during these 175 years, there was an abandonment of the coastal settlement of Vaitahu, Tahuata followed by a movement inland.

1775-1790 The palisades seen by Cook in Vaitahu could no longer be found by two later explorers, therefore suggesting that warfare had diminished, the methods had changed, or that it was carried on elsewhere.

1790 Coastal sites were seen around another bay on Tahuata, and on Uapou.

1795-1814 During this period only inland settlements are mentioned.

1842 The Vaitahu settlement had reestablished itself and consisted of thirty to forty houses scattered near the coast and on the sides of a ravine.

Little, or usually nothing, was ever mentioned about the size of the community or settlement, or of its plan. Houses were said to "be scattered" implying that there were several houses but that they were in no particular arrangement to one another. Only in the earliest historical account of the Marquesas by Quiros in 1595

*These are Mendana 1595, Cook, Clerke, Wale & Forster in 1774 (from Beaglehole 1955), Ingraham 1791, Marchand 1791, Vancouver 1792, Roberts 1793, Crook 1797, Fanning 1798, Krusenstern 1804, Langsdorff 1804, Porter 1814, and Du Petit-Thouars 1842. Date given is the date in port.
is a mention made of a planned village, this being the settlement of Vaitahu in the northern cove in which the structures were laid out around a square.

Neither Mendana, nor any of his crew, ventured into the Vaitahu valley; so it is not known if the inland area was settled at this time. For Fathuva, he is quoted as saying that the habitations were dispersed in the valleys (Marchand 1796:70). During the 175 year period between the visits of Mendana and Cook there may not have been any real division between the coastal and inland settlements. However, by the late 1790's it seems, on the basis of historical accounts, that the main coastal settlements had been abandoned and that the people were living at least a mile or so inland (Crook 1797:cxlv, Fanning 1798:210, Krusenstern 1813:124). Even earlier in 1774 Forster had written that the further inland he went in the Vaitahu valley, the more numerous were the habitations, and that some appeared to have been built very recently (Forster in Beaglehole 1955:25).

More frequent warfare may have been a reason for this change from coastal to inland settlement. In 1774 pallisades were seen high up on a ridge in Vaitahu by Captain Cook and other members of the expedition and "a net of sling stones in every house" (Clerke in Beaglehole 1955:761). On the island of Nukuhiva, high upon a ridge overlooking the valley of Taiohae, trenches had been cut across the narrower sections of the ridge (these served as a defensive measure) and two fortified villages had been constructed nearby. A similar fortified village had also been built in the nearby valley of
Taipivai (Porter 1822:1059).

Ceremonial sites on Nukuhiva which were probably tohua, were first mentioned in 1804 and again in 1814. (Krusenstern 1813: 133, Porter 1822:105). The religious or me'ae sites are mentioned in the accounts dating after the 1840's.

Plantations on the scale that some of the early explorers had seen in the Society Islands appear not to have been associated with the Marquesas settlements. Cook mentions plantations only in passing to say that the houses were built near them. However, from the time of Crook in the late 1790's onward, more frequent and detailed references are made to the plantations growing taro and paper mulberry (for tapa cloth) and to the groves of breadfruit and coconut trees.

Conclusions: In the smaller bays and valleys the people may have continued to live near the coast but in the larger, ecologically more favorable valleys, there definitely seems to have occurred a shift in the later period to the inland areas at some distance from the coast. The move was probably associated with warfare and the need for better protection from coastal attacks.

Agriculture never seems to have been very extensive in the Marquesas but it may have developed more during this later period as a result of the European contact and the demand for provisions or due to a change in the basic subsistence of the local people because of this movement away from the coast and the marine environment.

Population: At the time of European contact the Marquesas were densely populated but the actual population size did not seem
as great as it was for the Hawaiian islands which were settled after the Marquesas. This raises a number of points: time is not necessarily a determinant factor for the formation of a larger population; population size may be related to the culture as culture is to the population size; the effects of the physiographic-ecological environment and of territoriality may eventually have had acted as a restraint on the population size in terms of what the island could support. (The Hawaiian islands are over fifteen times larger than the Marquesas so even though her population was greater, the density was undoubtedly considerably less than it was for the Marquesas.)

The grouping of the population into tribes and their distribution over the island is related to the same factors as the three just stated. The population was large but the areas suitable or desirable for settlement tended to be small and physically divided and confined. Therefore, the overall settlement pattern consisted of tribal groups scattered about the island in all the suitable valleys, and denser settlements perhaps of several tribes in the larger, more favorable valleys.

Just how large the Marquesas population was at the time of European contact is not known. The early estimates are unreliable because they are extrapolated from the number of people seen in one bay on one island and these bays visited by the explorers were generally the larger, most densely populated valleys of the islands (Vaitahu, Atuona, Taiohae, and Taipivai); thus they are not representative of the rest of the island.
However, these estimates do give a relative idea of what the population may have been. Mendana in 1595 made no population estimate other than saying that about 400 men in 70 canoes surrounded his ship in Fatuhiva (Belknap 1795:238). Cook, in 1774, spent four days in Vaitahu and estimated that the three islands in the southern group had 100,000 inhabitants. Forster Jr., on the same expedition, felt that the islands were incapable of supporting such a large number so reduced the figure to 50,000.

Marchand in 1791, thinking both of these figures were too high, suggested 20,000 (Fatuhiva 6000, Hivaoa 6000, Tahuata 7000, Motane and Fatuhuku 1000) (Marchand 1796:153).

After the northern Marquesas were discovered in 1797, another method to estimate or calculate population size was to multiply the number of warriors (according to local informants?) by two or three. However, such a high ratio of warriors seems unlikely. According to the L.M.S. missionary Crook, a two year resident on Tahuata and Nukuhiva in the 1790's, the total number of warriors on all the islands except Fatuhiva was 19,200 (Tahuata 1200, Hivaoa 10,000, Uapou 1200, Nukuhiva 6000 and Uahuka 800) (Crook MS 1797:cxlvii, clxv). This would therefore equal somewhere between 40,000 and 60,000 inhabitants.

The first actual count, referred to optimistically as a census, was taken by Du Petit-Thouars in 1842, the year that he declared the islands a French possession. The total for this year was 20,200. All of the censuses that followed for many years afterwards showed a depopulation rate that was so rapid that there was the
actual threat that the Marquesan population might be completely
annihilated. However, since the all-time low according to the official
census of 2,225 in 1926, the trend was reversed, and in 1962 the
population had climbed to 5588.

The population of each island as it was recorded on the
censuses from 1842 to 1962 was plotted on semi-logarithmic graph
paper. If it is assumed that the depopulation proceeded at the same
rate from 1790 to 1842 as it did during the 80 years that followed,
by extrapolation the approximate population of each island may be
estimated: Fatuhiva 4000, Tahuata 1250, Hivaoa 20,000, Uapou 1500-
3500, Nukuhiiva 20,000 and Uahuka 1500. This represents a total of
48,500 to 50,000, a figure which lies midway between the estimates
of Crook and equal to the more conservative estimate made by Forster
for the southern Marquesas alone.

However, it seems unlikely that the depopulation could have
continued at such a high rate for 110 years. Smallpox which is said
to have caused an extremely high mortality rate did not hit the
Marquesas until 1863. Therefore, these estimates may still be too
high except for Tahuata; 2000 to 2500 would seem more likely.

The Special Case of Uahuka: For the past one hundred years Uahuka
has had the smallest population in the Marquesas. For approximately
forty-five years during the later 1800's and early 1900's, her popu-
lation remained constant at 190. All the other islands during the
same period were suffering a rapid population decline. This would
seem to indicate that Uahuka was always the least populated and that
the 1842 census figure of 2000 by Du Petit-Thouars was grossly ex-
aggerated.
If the population had been this great, and it is assumed that either the 1856 or 1863 census is approximately correct (a discrepancy exists between the two), then it would have meant that there was a 75% to 85% population loss during these 15 to 20 years. This would have been the highest rate of decline on any island in the Marquesas. If, on the other hand, the 1856 and the 1872 censuses are accepted, and the same rate is extrapolated into the past, the population in 1842 would have been around 500, a much more likely figure.

In 1867, a very interesting census was done by Lawson for the island of Uahuka. At this time there were four tribes residing in three valleys. Every person was listed by name, sex and sometimes approximate age; couples were distinguished from single people and foreigners and their children were listed separately. The total population was 287; excluding the outsiders it was 264 (Maku-oho 73, Atikau 32, Nai-iki 48, Vaitahi 111). Men outnumbered women by 55. Among the local inhabitants there were 75 couples; in the valleys of Vaipaee and Hokatu (apparently the two main inhabited valleys at this time) children and single people accounted for 33 to 40% of the population.

If the population in 1790 had been 1500, partially on the basis of this census it could have been distributed as follows: Hane 200-250, Hokatu 300-350, Vaipaee 700-750 and the remaining smaller inhabited valleys 150-200. This relatively small population for the valley of Hane is consistent with the what can be interpreted from the archaeological surface remains.
Marquesas Social Organization: The socio-political organization of
the Marquesas described by Handy (1923:1-61) was recently reevaluated
by Sahlins (1955) and by Marauder (1964). However, in preference
to drawing heavily from these better known authors, I have chosen to
dwell primarily on the earlier historical accounts, some of which
are unpublished.*

The political unit was the tribe. The tribe was composed of

The paramount chief (hakaiki), the tribal priest, the heads
of a few high-ranking families, and the households of these men
which formed the chiefly level. The remainder of the popula­
tion comprised the lower status (mata-ei-nana). The practice
of priestly or craft occupations did not affect status as as­
signed by birth. The tribal priest was a close relative,
usually a younger brother, of the high chief. (Sahlins 1955:72)

Later the same author classified the Marquesas in terms of social
organization as a ramified society and stressed the importance of the
mechanisms of primogeniture and of the "seniority principle which per­
vades all unilineal groups and sometimes the entire society; the
status of a given person is thus a function of his distance from the
main line of descent in his kin group and community" (1955:197). In
actual practice this model was probably much less clear cut.

Lawson describes a tribe as being "composed of several family clans
with independent chiefs and cadets belonging to each family" (Lawson
MS 1867 n/p). Each tribe had a name and some of these tribal names
were preceded by ati ('ati) which is the Society Islands and in the

*The earliest and one of the most informative accounts was
written by the L.M.S. missionary Crook, 1798. Material regarding
government is taken from a later manuscript by the L.M.S. missionary
R. Thomson, 1815. The two published French sources used were that by
B. Dumoulin, 1842 who was in the Marquesas when France took possession
of the islands and that by des Verges, a naval officer stationed in
the islands from 1868 to 1874.
Western and Central Tuamotus refers to a group having a territorial as well as a kinship base (P. Ottino, personal communication; Sahlins 1955:178).

On each island the separate valleys "were usually occupied by one tribe only" (Marander 1964:311) but sometimes one tribe could inhabit several valleys or several tribes the same valley (Handy 1923:35). The island of Hivaoa had twenty-one tribes and nineteen sub-tribes which was more than that of any other island of the Marquesas. This might mean the largest population and the longest period of occupancy. Politically the island was subdivided into two divisions each named after the first inhabitant. In contrast, Uahuka had only eight tribes, the least of any island.

**TABLE I**

**UAHUKA TRIBES**

<table>
<thead>
<tr>
<th>Tribe</th>
<th>Valley</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Tuhipipi</td>
<td>Ha'avei</td>
</tr>
<tr>
<td>2. Vaitahi</td>
<td>Vaipae</td>
</tr>
<tr>
<td>3. Papahakaiki</td>
<td>Vaipae</td>
</tr>
<tr>
<td>4. Na-iki</td>
<td>Vaipae</td>
</tr>
<tr>
<td>5. Tititea</td>
<td>Tepona and Hane</td>
</tr>
<tr>
<td>6. Maku-o ho</td>
<td>Hokatu</td>
</tr>
<tr>
<td>7. Noho-kea</td>
<td>Hanatete, Tohapu, Hanahoua, Hanaei, and Kato-o ho</td>
</tr>
<tr>
<td>8. Atikau</td>
<td>Vainaonao</td>
</tr>
</tbody>
</table>

The three tribes residing in Vaipaii, the largest and deepest valley on the island, each had their defined territory within the valley.
In 1861 the Na-iki, that lived the greatest distance inland, was the most numerous tribe. They were also represented on the islands of Hivaoa, Nukuhiva and Uapou.

Politically, the tribes of Hane, Vaipaee and the intervening smaller valleys were allied against the Hokatu valley tribe (Handy 1923:30).

Social Stratification: Regarding social stratification, Sahlins writes, "The ranking system in Marquesas was relatively undifferentiated" (Sahlins 1955:72, each tribe being an autonomous unit. Within the tribe the Marquesans recognized two broad social groupings: the tapu, or the restricted class, and the non-tapu, or the commoners, each of which was further subdivided into several smaller groups. The commoners were the most numerous and, according to Crook, included "all females without distinction, however otherwise respected; and all men employed in their service" (Crook MS 1797:cxv). This did not prevent women from becoming chiefs. Dumoulin (1843:230-232) described the social groupings and sub-groups as follows: (Handy's spelling is in parenthesis)

**Non-Tapu:**

A. Pekeio (Pekio—secondary husband or wife): the chief's retainers. Their work was to cultivate the land, gather the fruit and prepare the food.

B. Averia (Ava-ika): the fishermen. This was their only occupation as distinct from others who could fish as supplementary activity.

C. Hoki or Kaioa (Ka'ioi): the entertainers. They traveled from valley to valley to perform at large gatherings. They whitened their skin and tended to be rather feminine.
D. Nohoua (Vainoa?, Tupenoa? or Maunoa?): These people were considered as belonging to the lowest rank. They made their living from the land and were a source of victims for the Taoua.

Tapu:

A. Ariki: the chiefs. Every tribe had a chief, but no exterior mark or respect was given to him (a phenomena also noted by the early explorers). They possessed a hereditary right to the land and could also be warriors. A woman could become a chief either through her father or her husband.

B. Taoua (Tau'a): the inspired men. According to Crook, either men or women could become a taoua; and as a class they were completely distinct from the tahouna or priests. They were supposed to possess the inspiration of a prophet and the powers of a sorcerer. The ability to become possessed by an atua, a god or spirit, was thought to be hereditary (Crook MS 1797:cxxv). The Taoua were said to have had a big influence on the spirit of the population which they could direct as they pleased. At the death of a taoua a human sacrifice was required; victims were obtained from neighboring valleys.

C. Tahouna (Tuhuna): the priests. The priests, more numerous than the taoua, were ordained to their position by their predecessors—not by heredity. Their duties and services revolved around sacrifices, funerals, warfare and medicine (primarily first aid, as the taoua attended to the internal ailments) (Crook MS 1797:cxxi). Unlike the chiefs they wore certain distinctive signs. The two sub-groups associated with the priests were the:

1. Ouhou who assisted in the human sacrifices, and
2. Nati-kaha, individuals who could cast evil spells.

D. Toa: the warriors. The title of warrior was distinct from that of chief though some people could be both. In battle each warrior had the liberty to fight or to flee.

According to all observers, social stratification in the Marquesas did not appear to have been very rigid (recent works: Handy 1923:53-55; Sahlins 1955:74-77; Marander 1961:335-337).

Individuals at birth were not ascribed into any one sub-class and
there was a certain amount of mobility from the non-tapu to the tapu class, especially by warriors and artisans. In the same way one’s position within the tapu class was not necessarily hereditary. Chiefs seemed to have held title to the land but not always to the right of succession. A strong political solidarity and organization apparently did not develop in the Marquesas. According to the missionary Thompson, 1845:

The government of these islands is feudal. The chief who holds the most land has generally the most dependents, and consequently is the strongest; rank is held according to power. Sometimes one is regarded as principal chief, as upon Tahuata; generally, however, there are two to three in each valley. Every land owner being independent; in case of attack or to punish their neighbors for any offense, all would unite, but without giving a chief to command to anyone. (Friend, May 1845:71)

This multiple chieftainship within a relatively small confined geographical area was also noted by des Verges, 1877:

Chieftainship within the tribe was usually hereditary (father to son or by a collateral line). These chiefs were numerous; they still are today; each district or bay has one, two, three and even up to seven or eight chiefs depending upon the number of tribes... (des Verges 1877:17)

The matrimonial alliances allowed the spouses a large amount of liberty. According to Lawson, marriage was theoretically a means to strengthen families and to adopt children but it did not bind the parties to live with each other (Lawson MS 1867). Could this be an allusion to a form of marriage without co-residence? It certainly seems to be a possibility if not an inevitable consequence because of the general practice of polyandry. Marriage was not confined to members of the same tribe or people from the same island. In fact, among the tapu marriage was often non-tribal and thereby
served as a political tie. On Nukuhiva, the island that had attained the greatest political unity after European contact, Tomoana, the highest ranking and most powerful chief had acquired his position—apart from the hereditary privilege—by marriage and by the adoption of two boys belonging to chiefs of neighboring tribes. (Lawson MS 1867). Undoubtedly, these alliances and adoptions were one means of establishing some ties between the autonomous socio-political units which were the tribes.

Warfare: Recurrent and ferocious wars were one of the most characteristic cultural traits of the Marquesans. The reading of the unpublished letters by Lawson is in this respect very revealing. A study of these documents could throw a new light on the relations between this custom of warfare and the particularly characteristic Marquesan social and political structures. Lawson gives three main reasons for warfare: "First, the native religion requiring human sacrifices, second, quarrels about land and third, causing the death of each other by witchcraft or spells" (Lawson MS 1867).

In pre-contact times, wars were carried out in close combat and seldom were very bloody. Surprise attacks seemed to have been a common tactic. Wars could occur between different islands, between hostile tribes residing on the same island or even valley, between smaller tribes that were generally allies or between different families within the same tribe. A consequence of some of these wars was the rampage destruction of breadfruit and coconut trees and of taro plantations. This could have had a more dire after-effect on the settlement than the death of a few individuals.
Sometimes, also, the attacking tribe could resettle in a new valley after forcing the original tribe to flee elsewhere.

**Subsistence:** Subsistence, the primary need of any community, is presented here primarily to provide background information to be later used in interpreting the Hane sites and in relating them to their setting. The means of subsistence and the amount that the community can produce or obtain regulate the size of the settlement. Generally speaking, it seems either that the Marquesans did not, by any means, fully exploit their terrestrial environment as can be reconstructed archaeologically, or that they depended primarily upon breadfruit for which no artificial alteration of the land was necessary other than the excavation of pits for breadfruit storage.

The extent to which the environment was exploited was related to the social organization. (It is Sahlin's thesis that "Polynesian cultural differentiation was produced by processes of adaption to a variety of ecological niches under varying technological and environmental conditions" (Sahlina 1957:291). The Hawaiians who had at their disposal a wider range of ecological environments, distributed over a larger area, developed a much more stratified social organization which according again to Sahlins was related "to the surplus output." (Sahlins 1958:5).

The Marquesans, too, were able to produce more food than was immediately consumable as can be judged by the numerous, large breadfruit storage pits found in many, if not all, the previously settled valleys. This surplus, however, seems to have been reserved for the tribe and was not for redistribution to other islands or for
other tribes. There must not have been a great excess in relation to the population size as food shortages and famines did occur, and on a more disastrous level than elsewhere in Polynesia.

Relatively little land area seems to have been altered for the construction of taro terraces; yet the land was available, and the Marquesans had a knowledge of irrigation. In Hane Valley the tohua and me'ae sites tended to be larger than the agricultural sites (either terraces or enclosures) with one tohua having nearly twice the area of the most extensive series of agricultural terraces. This would indicate a preference for breadfruit which required considerably less effort to produce and, in addition, could be preserved.

Food Plants:

Breadfruit: At the time of European contact, breadfruit was in all likelihood the most important food plant. It was easily grown, required little care, and could be produced in sufficient amounts to obtain a surplus which could be preserved in underground pits for use during the off-season or famines.

According to Crook the breadfruit was seldom planted (Crook MS 1797:cxxix); but according to Handy, the planting of breadfruit was done with great care. Porter found the trees in extensive groves scattered throughout every valley (Porter 1823:57).

Trees around the houses were owned by individuals, but the larger groves belonged to the chief. The picking and gathering of the fruit was a communal enterprise. The first crop went entirely to the chief, but he used it to fill the tribal pits and the second
crop was used to fill the smaller family, or household, pits (Handy 1923:182,183).

The breadfruit yield seems to have been rather variable as it depended a great deal upon the climate as well as the soil and general environmental conditions. Ripe fruit were generally available during six months of the year with the main season commencing in January. It was at this time that, "... each family generally gather and preserve a mano 4000 of fruit and sometimes two mano 8000 and at the mataiki September from a few hundred up to a mano." (Lawson MS 1867). The counting system went as high as four to eight million (Crook MS 1797:cxxix) which is indicative of the very large quantities of breadfruit that were available.

**Coconuts:** Coconuts were also very widespread on all the islands. Crook mentioned that they were always planted; and later Porter reported that they were "cultivated with much care" (Porter 1823:53). When Cook visited Tahuata he found that coconuts were available only in small quantities; Marchand, seventeen years later, was able to get a large number and, therefore, reasoned that the coconuts must have been plentiful inland, though not near the shore.

Hostile invaders sometimes destroyed the coconut by beating out the heart which would kill the tree. (Breadfruit trees were ring barked.)

**Bananas:** At least twenty varieties of bananas were named and recognized in the Marquesas (Porter 1823:55). Sometimes they were planted (Crook MS 1797:cxxx), although once planted they could repropagate themselves. During the famine periods, the banana roots
were sometimes eaten (Crook MS 1797:cxxx). Porter mentions the use of a round or square pit three feet deep, and lined with a layer of broken candlenuts into which the bananas were placed to hasten ripening (Porter 1823:55).

Sugar cane: Sugar cane was cultivated on a small scale and in enclosed areas (des Verges 1877:66). According to Jardin, it was reserved for feast days (Handy 1923:182).

Tubers: Root crops were probably second in importance to breadfruit. The large marshy areas suitable for taro growing and such as exist in the Austral Islands and in the Society Islands are not to be found in the Marquesas. Here the land surface had to be transformed. Taro (Colocasia esculenta) as a food may have been more important during the earlier period of Marquesan history than during the later. Crook wrote that it was "in some measure cultivated as it will only grow in water" (Crook 1797:cxxx); Porter claimed that "much pain was taken in its cultivation" (Porter 1823:56); and Thomson noted that irrigation was practiced upon parts of Hivaoa (1841:xxcviii). In des Verges's opinion, taro was of less value in the Marquesas where the people would not bother to cultivate it than in Tahiti where it was grown on a larger scale (1877:65).

The sweet potato at the time of Crook was common and was regarded by Langsdorff in 1804 to be one of the staple foods. It can grow in drier soils than taro so would not require the specially built terraces, as did the taro. Up until 1868, it was cultivated in rather large quantities, but when the whalers stopped coming, most gardens were abandoned. Its use was replaced by the potato
coming regularly from America (des Verges 1877:65).

Miscellaneous: Yams, des Verges saw only growing wild, although it seemed to him that the Marquesas preferred it to the sweet potato.

Other plants cultivated in the Marquesas, but probably on a very small scale, were kava (Piper methysticum), paper mulberry for tapa cloth, tobacco and ti leaves which were used to line the breadfruit pits.

Animals: At the time of European contact the only animals in the Marquesas were the pig, rat, and chicken. The dog, which they had at one time, had been exterminated probably due to overkilling. (Two dog skeletons were found in the MUH1 excavations.)

Pigs were important as an item of food, though their use seems to have been limited more or less to special or ceremonial events. When Marchand visited the islands, he saw many pigs around the houses, but the people would not part with them. Sometimes a tapu was placed upon them to permit them to multiply freely. In Tahuata, at the time of Crook, pigs ran loose in the valley; only sows that had just given birth were put into enclosures. The piglets were then distributed among different families for raising. The number of pigs a family was likely to possess ranged from none at all to about twenty. (Crook 1797:cxxviii)

Chickens apparently were not a part of the general diet. Marchand saw tame hens and roosters and thought they were raised for their feathers. Langsdorff and Porter were of the same opinion. (No chicken bones, though many bird bones, were found in the midden from the MUH1 excavations.)
Fishing: Fishing was not as simple as it was in the Society Islands because the Marquesas have no lagoons. Some of the earlier Europeans who visited the islands were of the opinion that not much fishing was done and that fish were not abundant. This is an impression that might easily have been formed because of the numerous restrictions associated with fishing in the Marquesas.

In the Marquesas social organization, fulltime fishermen were averia and professional fishermen were ava-ika. They were not esteemed members of the tribe because they did not go to war. Krusenstern in 1804 wrote:

Fishing is however an occupation despised by those who possess a piece of land of any extent: and only the poor class of people who maintain themselves in this manner, give themselves up to it. Although they knew that we would pay them well for fish, they only brought us twice seven or eight bonitos: a proof that there are but few who employ themselves in this way, and who have not land to cultivate. (1813:163)

The real reason may not have been the lack of fishermen but that bonito, as well as a number of other species of fish and octopus, were allowed only for the tapu class (Crook MS 1797:cxviii). Another possible explanation is that fish were regarded tapu during certain seasons.

Almost all fish are at the time when the breadfruit is not ripe tabooed and must not be eaten. A superstition idea prevails that by transgressing this law all the young breadfruit would fall from the trees, which must inevitably occasion a scarcity... (Langsdorff 1813:137)

In archaeological sites along the coast, fish midden and artifacts associated with fishing are found in great quantities so that it would seem that fish were an important item in the diet and the main source of protein. A number of ceremonies and special
structures were also associated with this occupation. Fish caught on an expedition were distributed among the tribe either on the beach, on the tohua (the chief’s feast place or a sort of community structure) (Handy 1923:168) or, as reported by Melville for the valley of Taipival on Nukuhiva, by foot throughout the valley to certain houses where they were redivided and redistributed to other houses in the general area (Melville 1876:23  in Handy 1923:168).

Famine: In the Marquesas the treat of famine was so real that preparations were made. In dire circumstances the inhabitants may have been compelled to search for food outside of their valley or territory—perhaps even in other islands, and such movements could well have had an effect on the population distribution, tribal contacts and even the settlement pattern. Temporary camps may have been set up along the coast in less frequented areas where fishing could supplement the diet until better times.

It was probably primarily in the later period of Marquesan prehistory, when the population had reached a high density and warfare had become more frequent, that the necessity to have reserves of food was felt. Breadfruit was the best solution for it could be obtained in surplus quantities with relatively little effort and preserved in underground ma pits for many years. Within Polynesia, the obvious need to prepare for famines seems to have been limited to the Marquesas. In the Society Islands small ma pits did occur, but generally, food was more abundant, both from the land and the sea; in New Zealand semi-underground caves were dug in which to store sweet potatoes during the winter months (D. Yen, per.
comm.); in Hawaii, sufficient food seems to have been produced, dur in part to the tighter social and political organization and to land use.

The principal causes of famine in the Marquesas were the deliberate destruction of food plants by adversary tribes and the droughts. Tidal waves, for which there are numerous historical references, were also a potential cause. Low lying coastal areas on the exposed side of the island, and especially bays bordered by high cliffs were particularly vulnerable for destruction. On Uahuka, in 1946 a seismic wave obliterated houses on the coast of Hane and a garden of sweet potatoes planted high upon the dune; in Vaipaee, the lower valley was inundated and the people, for their own future safety afterwards moved further inland. A less serious wave struck the Marquesas in 1960, and there are records of others in 1922, 1902-3 and 1804 (Sheanam 1955:20).

According to the geophysicist C. Blot of Noumea, in the Pacific area large seismic sea waves from Japan have been recorded since the VIIth century and from the Andes since the XVIth century (Ottino 1965:92). In 1687 and 1746 very violent earthquakes in Chile generated seismic waves (ibid.:91) which could have reached the Marquesas.

The oral traditions of Rangiroa, an atoll in the Tuamotu, refer to a sudden catastrophe 14 to 15 generations after 0IO, the eponyn ancestor of Rangiroa, when the western end of the atoll was covered by huge waves. The reconstructed geneological date for this event matches closely to the date of a tidal wave caused by an
underwater explosion in the New Hebrides in 1560 (Ottino 1965:92). The Marquesas were probably in the path, too, and this wave may even tie in with the stratigraphy of the Hane coastal site. (The cultural level of Layer III, radiocarbon dated between A.D. 1535-1600, is superimposed over a meter thick layer of sand, sterile except for a number of human burials. The occupational level below this was dated A.D. 750-950). (Dates are from Sinoto and Kellum 1965:35)

The earliest famine in the Marquesas for which there is a specific historical reference occurred about 1797-98 as the result of a drought (Lescure, SEO VII:3,120). Captain Fanning who passed through Tahuata around that time noted that the natives were eating their fish as soon as they were caught, and he was informed by Crook that food at that time was scarce due to a famine.

A far more disastrous famine that lasted four to six years commenced a short time later in 1804 or 1806. It is said to have been caused by a tidal wave on Nukuhiva which destroyed the breadfruit and other food resources in the lower valleys—especially on the southern coast. Fish, too, remained scarce for some time afterwards. Once all the available pigs and chickens had been consumed, the people reverted to cannibalism. The population dropped from 16,000 to 9,000 (Rollin 1929:231).

Des Verges writes of a less severe famine that took place in 1820, and of another in 1862, which he said was localized to Taipival, Nukuhiva. Again the people sought a release in cannibalism (des Verges 1877:38). This is certainly the same famine that was felt on Uahuka (Lawson MS 1867:n/p) and on Hivaoa. Two Hawaiian
missionaries describe well some of the effects of the disaster:

For two years whaleships have not visited us as formerly; the famine extends through this whole group—Fatuhiva, Tahuata, Hivaoa, Uapou and Nukuhiva; we have very little rain; the breadfruit trees are all drying up and the natives steal very badly . . .

Kauvealoha writes:

The head of the sun is very great; it seldom rains; the streams are very low, the land is parched with drought; the breadfruit and coconuts are drying up; and the natives steal all the vegetables which the missionaries have planted in their gardens; and they charge enormous prices for everything which they have to sell; and they say, by-and-by we shall have to kill one another to get something to eat. (Hawaiian Mission Society Reports, May 1862:6)

Lawson at this time was not on Uahuka, but on the north shore of Hivaoa. Thousands of breadfruit trees in flower had died and people were forced to go up the valley for water since not a drop was to be found along the coast. Humans were sacrificed to bring rain, apparently without success. Inter-tribal feelings were tense; Lawson found it difficult to get a boat crew to take him to the nearby bay of Hanamenu because they were afraid of being captured and probably killed. (Lawson MS, letter of August 12, 1862)

The Hawaiian missionaries on Hivaoa found it difficult to get enough food for themselves. Breadfruit and coconuts were brought in from "other lands" (this probably meaning other parts of the island) and therefore the price was high—two bunches of breadfruit were exchanged for "two fathoms of cloth" and the same for coconuts and pigs. (Laioha MS, letter March 27, 1865; HMCS)

In the early 1900's there was a drought on Uahuka. The Vaipaee stream went dry and pigs and dogs are said to have died (Christian 1910:173). This may have been the cause of the Uahuka
population decline which recommenced in the 1920's.

In addition to these famines brought about by tidal waves and droughts, there were those caused by the intentional destruction by man of the food plants, done as a means of revenge or attack by enemy tribes. The best example of this was given by Lawson, who wrote that when Nukuhiva tribes invaded Uahuka they mercilessly ringbarked the breadfruit trees, mashed or cut out the hearts of the coconut trees, destroyed all the taro, kava, and paper mulberry plantations, and killed the pigs and chickens. (Lawson MS 1867). For further details on this incident see Appendix B. If the destruction was as complete as Lawson claims, it would take from five to ten years to reestablish the equilibrium, or near-equilibrium, that the settlement must once have had. Taro and other root crops could, of course, be replaced quicker than the breadfruit and the coconuts, but sufficient amounts probably could not be cultivated if the population was large.

Culture History of Uahuka: Within the Polynesian culture, the Marquesan culture is distinctly unique especially in its social and political organization. This is due as much to cultural factors of isolation (Murdock 1963:57) as it is to the geographical and ecological conditions of insularity (Bates 1963:110). The hostility that isolated the islands from one another, also isolated valleys and tribes on the same island. This isolation favored a cultural differentiation which was apparent in the dialects as well as in items of material culture.

At the same time, even though the forces of differentiation
were at work, the geographical proximity of the islands (all were in sight of one another) led inevitably to interisland relations and contacts, hostile though they may have been. This tendency is, to a large extent, verified by the evidence gathered from ethnohistorical accounts, legends and archaeological data.

The cultural development of Uahuka seemed to have received the greatest influence from Hivaoa and Nukuhiva. Hivaoa, the largest and most fertile island in the Marquesas, according to tradition was the first to be settled and at the time of European contact may have been the most populous. Its central position in the Marquesas chain favored and facilitated the possibility of contact with the other islands and it is the only island for which the available ethnohistorical data cites two way contacts with all the remaining Marquesas islands. Its culture is said to have dominated that of the southern Marquesas (Linton 1925:136). The island of Uahuka, not discussed in great detail by Linton or Handy, may have been settled from Hivaoa or at least received settlers who retained their tribal names and transferred place names. Actually, when taking into account the Marquesan conception regarding the ownership of names (of people, places or other property) the distribution of tribal and place names may be taken as evidence of a similar cultural origin or at least of alliances (marriage, adoption) between members of different social groups. Thus, the important Naiki tribe of Hivaoa had branches on Uapou, Nukuhiva and Uahuka.

A large number of Hivaoa place names also appear to have been transferred to other islands, either as place names or temple
names. Some have been noted by Handy:

Vevau, the ancient name of the valley of Atuona, recurs as the name of a temple in Atuona on Hivaoa; in Taipivai, Hakaehu and Pua on Nukuhiva; in Vaipae on Uahuka. It is the name of feast places in Anama'iai on Tahuata, and in Vaipae on Uahuka. . .

Pou Au, the name of the sacred mount and temple in the base of the valley of Vevau (Atuona) recurs as a tribal name on Hivaoa in the valley of Pumau, on Uapou in the valley of Hakahetau; and as a temple name in Atuona on Hivaoa; in Vaitahu on Tahuata, in Omoa on Fatuiva; in A'akapa, Taiohae and Hapa'a on Nukuhiva. (Handy 1923:18)

These are not the only Hivaoa names found on Uahuka. Ta'aoa, a large valley adjoining Vevau where the Naiki had settled is a land name in the Hane valley; whereas Vaipae, the valley on the other side of Vevau, is the name of the largest valley on Uahuka, which at one time was occupied by the same Naiki tribe. Similarly, Atuona, the present name of the Vevau valley, is found on Uahuka as a place name.

These earlier relations as evidenced by the toponymy seemed to have continued into the post-contact period. In 1867, the Uahuka census recorded eight men and thirteen women as being originally from Hivaoa. This was the largest representative population group from another island.

As mentioned, Uahuka seems always to have been the least populated island having only seven tribes. (All the other islands had over 17 tribes and sub-tribes; and Hivaoa had 40.) At the time of European contact all the settlements seemed to have been along the southern coast in the valleys of Hanavei, Vaipae, Hane and Hokatu. The northern and western sides of the island are now very dry and non-productive although there are a few scattered sites
along the coast which may indicate temporary residence by small groups.

The larger valley of Vaipae was occupied by two or three tribes which were allied with the Tititea tribe of Hane and Teponoa. These localized tribes were allied against the Maku-ohe tribe of Hokatu. On Hiva, the Maku-ohe was a sub-tribe of the Naiki; whereas, on Uahuka the two were adversaries. Intermittent fighting and killing continued up until the 1860's between Hokatu and Vaipae with the latter appearing to be the primary aggressor.

According to local tradition, the Naiki tribe, or sub-tribe, originally occupied the Puamau valley on the north coast of Hiva but were afterwards driven out by the Pa'ahe tribe, which, according to Handy, may have come from Nukuhiva (1923:18). Eventually, the Naiki reestablished themselves in Vevau (Atuona) on the south coast of Hiva and then were attacked by the Pepane, the eastern political division of Hiva, so that they were forced to seek a temporary refuge on Tahuata. It could well have been at this time that the tribe split, with one section going to Uahuka. Unfortunately, there are no genealogical dates for this invasion and defeat, but it would have to have been some time after A.D. 875 to 975, the date of settlement of Hiva based on what Handy considers the two most reliable genealogies (Handy 1923:15).

The indications of Nukuhiva contact on Uahuka date from a later period. Soon after European contact, the Taipi tribes of Hatiheu and Anaho on the north coast of Nukuhiva wished to try out their arms so made a successful attack on Uahuka and occupied one
of the valleys (probably Vaipaee) for three months. Later the Uahukans were able to make a counter-attack, and eventually an agreement was reached between the two islands. For some time afterwards Nukuhiva seems to have made frequent trips to Uahuka, and much intermarriage undoubtedly resulted. In about 1827 a tribe from Hapaa (a valley on the south coast of Nukuhiva between Taiohae and Taipivai) visited Uahuka, again armed with guns, but this time to support the Naiki and Vaitahi tribes of Vaipaee in an attack on the Tuhipipi tribe of Haavei, a large valley just west of Vaipaee. The Tuhipipi were defeated and the tribe, on bamboo rafts, left Uahuka and landed in Hoomi, on the south coast of Nukuhiva (Lawson 1867 MS). Here they must have been absorbed into other tribes for they lost their identity as a single tribe.

For a certain period after European contact Hane bay seems not to have been inhabited. Lawson refers to it as the "tapu bay." (See Chapter VI and Appendix B.) The notion of tapu and the power to enforce it were inseparable from the Polynesian authority system.

The Archaeological Evidence: In addition to the ethnohistorical and traditional material, the archaeological data, too, can be used as an aid in reconstructing the culture history. Out of the sites excavated in the Marquesas, the best documentation exists for the Hane MUHI site on Uahuka. This was an open dune site situated at the head of the bay. Excavation showed the existence of seven distinct superimposed cultural layers; the lowest was 1.80-2.00 meters below the surface. Over 3400 artifacts were cataloged (1576 hooks, hook fragments and hook blanks, 309 adzes, adze fragments and blanks, and
other miscellaneous items) and constituted the largest number re-
covered from any single site in the Marquesas.

On the basis of the archaeological data, some interpretations
and comparative studies can be made between MUH1 and two other exca-
vated sites in the Marquesas.

At MUH1, Layers I, III and V (numbered from the surface
down) were stone pavements. I and III were separated by only a thin
lens of sterile sand 7 cm. thick. Layer IV was a meter-thick de-
posit of sand, also sterile except for twenty-three human burials
placed primarily in flexed and semi-flexed positions. No grave goods
were found associated with them. Artifacts were most plentiful in
the lower levels, or below Level IV.

When these artifact assemblages are compared, "... a clear
distinction can be noted in the material contents of Levels I and
III and Levels V to VII" (Sinoto MS in press). The hooks, adzes
and octopus lure sinkers found in the lower layers showed a greater
resemblance to those of West Polynesia, while those in Levels I-IV
were more typical of what has been called East Polynesian types
(Sinoto 1966:MS in press).

More studies and excavations will be needed to substantiate
further and explain this discontinuity. The area possibly could
have been abandoned and later resettled by a group from Uahuka or
elsewhere in the Marquesas; or perhaps it indicates the arrival of
a second migratory group such as Handy has suggested for the
Marquesas.

Turtle bone (turtle as a food was reserved for the tapu
class), pearlshell, hooks and other artifacts found on Level V in Area B were burnt, thereby, possibly suggesting a raid by another tribe followed by perhaps a temporary abandonment of the site.

Charcoal and shell samples, taken from the various levels and submitted to laboratories for dating, have given dates that are fairly consistent with one another. These are:

<table>
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<tr>
<th>Level</th>
<th>Date</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level III</td>
<td>A.D. 1770</td>
<td>(modern)</td>
</tr>
<tr>
<td>Level V</td>
<td>850 ± 100</td>
<td></td>
</tr>
<tr>
<td>Level VI</td>
<td>700 ±</td>
<td></td>
</tr>
<tr>
<td>Level VI</td>
<td>350 ±</td>
<td>(shell)</td>
</tr>
<tr>
<td>Level VII</td>
<td>(no date, pottery level)</td>
<td></td>
</tr>
</tbody>
</table>

If these dates are accepted as a guide, a rather long time interval can be noted to have occurred between the Levels V and III. The burials in Level IV are probably intrusive and associated with the upper level; and the otherwise sterile sand would have accumulated during the 500 years or so when this section of the coast may not have been inhabited. Hane inland area seems to have been inhabited about this time.

Relation of the Hane Site to Other Sites: Artifacts from different areas that are morphologically or typologically similar are often taken as evidence for culture contact through the processes of direct or stimulus diffusion. Independent invention is regarded as the cause if the possibility for contact is remote or if the similarities occur only on a small scale or among items that are relatively insignificant in the culture.
A much larger and representative sample recovered from other stratified sites is needed to assess the degree of variation that can be expected to occur in relation to the factors of time and isolation or inter-contact. Change, the causes of change and the rate of the transmission of change are topics about which relatively little is known. If cultural drift in isolation was the tendency, perhaps a greater diversity of artifact types could be expected than if this trend is reversed to one or more frequent contacts as may have taken place during the later period. At this time certain types could have been established. For the islands of Hivaoa and Nukuhiva contact is known to have taken place with Uahuka on a large enough scale for items of material and non-material culture to have been transmitted and assimilated into the local culture.

At the northwestern end of Hivaoa, the Kon Tiki Museum excavated the coastal cave site of Hanapeteo. The midden showed a heavy reliance on the maritime environment; artifacts showed fishing to be the primary occupation. The deposit was stratified into five to seven different layers and down to a depth of 1.50 to 2.00 meters which would suggest rather long, but discontinuous occupation. The earliest date, based on carbon, was A.D. 1660 (A. Skjolsvold: personal comm.).

The Hanapeteo fishhooks, in form and head type, resemble those found in the upper levels of the Hane MUH1 site also dated to about 1600 A.D. This more or less simultaneous occurrence of similar hooks on different islands suggests contact (there are
many different ways to make fishhooks) although in no way does it indicate the direction of contact. However, based on what is already known about Hivaoa and its culture history, chances are that in this case the movement was from Hivaoa to Uahuka.

The second site with which the Hane site may be compared is Ha'atuatua, excavated first by Suggs and later by the Bishop Museum, on the north coast of Nukuhiva. Here the comparison is more difficult due to the greater amount and diversity of the material from Ha'atuatua as well as to the erroneous dating and interpretation of the site.

First, regarding the dating, according to Suggs's report, two carbon samples from Area A, both from 4 feet below the surface (neither the distance apart nor the stratigraphical relationship is given) differ in age by 800 years. Two other samples from Area B—80 feet apart, one 11 inches deep, the other 23 inches deep—also differ in age by 800 years. The two earliest dates of these four are $2^{1/2}$ B.C. ± 150 and A.D. $46 ± 180$; Suggs, unquestioningly, accepts the first as the date of the first settlement of the Marquesas. Not only does he accept this, but he pushes it back nearly one standard deviation so that the period which he calls the "Settlement Period" extended from 150 B.C. to A.D. 100. His "Developmental Period" extends from the end of the Settlement to A.D. 1000—one thousand years, an extremely long time span which is difficult to accept taking into account.

Marquesan Culture Change: Artifacts similar to the Ha'atuatua artifacts (hooks, adzes and pottery) assigned to the Settlement and
Developmental Periods were also found in Hane in the lower levels of MUHL. If the Hane radiocarbon dates are more closely correct, it would then seem permissible, on the basis of the artifacts, to discard the earlier Ha'atuatua dates and replace them by the second set of dates. In this way, Ha'atuatua can be said to have been occupied from about A.D. 750-850.

Dr. Sinoto's opinion is that since the earlier material from Ha'atuatua is matched in the lower levels in Hane, with each site having items not present in the other, it thus indicates that "... the Nukuhiva sequence should begin probably during the later part of Level IV between A.D. 850 and 1600 at Hane" (Sinoto 1966 MS: in press). Though the argument as presented is not clear, the main point is that, on the basis of artifact seriation, Ha'atuatua is a later site than Hane.

In the excavations done by the Bishop Museum of the Ha'atuatua site, a carbon sample was collected from the fire pit, which supposedly belonged to Suggs's Settlement Period, and was sent to Japan for dating. The result was A.D. 1330 ± 90 (Sinoto: personal communication) which means that there is a two-out-of-three chance that the correct date falls somewhere between A.D. 1240 and 1420.

A very interesting fact regarding Ha'atuatua and Marquesan culture history is that of the close correspondence of these dates, one based on artifact seriation and the others on radiocarbon, with a geneological date. Porter, who resided in the Marquesas in 1812-1813 was told that Ha'atuatua was settled by the god Ha'i who brought with him chickens and pigs twenty generations ago (Handy 1923:10).
Allowing twenty-five years to a generation, this would give a date of A.D. 1300.

In summary, to account for the similarity of the artifacts from three coastal sites on the islands of Hivaoa, Nukuhiva and Uahuka, contact is the best explanation. Between the two islands, Hane first received Nukuhiva influence from the north coast. Intermittent contact may have extended over a very long period since it was tribes from the same area that invaded Uahuka in the late 1790's, early 1800's.

Similarly, a relationship with the island of Hivaoa undoubtedly also extended over a long period and perhaps provided the first settlers of the island, since two tribal names, plus numerous place names are the same; however, the specific case of north coast Hivaoa contact with Uahuka occurred well after the initial Nukuhiva influence seen in the Hane site.
Figure 7.—Map of Uahuka (reproduced from Handy, 19).

Fig. 3. Uahuka, Marquesas
PART II. THE HANE SETTLEMENT: TYPOLOGY AND DESCRIPTION

CHAPTER IV

ARCHAEOLOGICAL SURVEY

Introduction

Hane is a valley 2½ kilometers deep by one to one-and-a-half kilometers wide and 327 hectares in superfice. Beyond the village, which extends 700 meters inland, level land is very limited. The main valley is divided by twelve steep narrow ridges into numerous smaller valleys each watered by a stream. There is evidence to indicate that the course of two or three of these streams has changed since the area was first occupied. Everywhere the land is rocky and there are many huge boulders scattered here and there.

Even within a small valley such as this there are climatic variations between the inland and shore area. The precipitation increases as one goes inland due to the condensation of the clouds on the central mountain ridge. The vegetation also changes. In the undisturbed inland valley areas there are primarily mani (Inocarpus edulis) and hau (Hibiscus tiliaceus); and on the drier ridges there are guava, hau and aeho (Eranthus floridulus). Mangoes also grow wild over large areas and breadfruit trees are abundant in some of the valleys. Coconuts have been planted in the coastal area and in the main valley, perhaps about 40 or 50 years ago.

The valley is subdivided into 80 lands the boundaries of which are mainly the ridges. In the village the land is more greatly
fragmented and the pieces smaller. The Marquesans use the land names as place names; the individual streams and ridges have no specific names.

The area surveyed is very small compared to the extent of the valley but it does represent the main settlement area of Hane valley. (See Fig. 3.) This covered an area of approximately 25 hectares, and extended an additional 1000 meters inland along the Keetupu-Taaoa ridge from the north end of the village. (Elevation ranged from 40 meters to 220 meters.) A general search in the adjoining valleys and ridges did not reveal a substantial number of additional sites.

The survey of the sites was done on a plane table with a telescopic alidade at a scale of 1/500. General areas will be referred to by the land name on which the sites are located and sites will be designated by the land name and number, which was assigned to the site in order of survey.

A site is here defined as any structure or complex of structures that form a single unit; a house can be a site or it can be part of another site such as a me'ae or a tohua, in which case it would be referred to only as a structure on the site.

One hundred seventy-six sites distributed on thirteen lands were surveyed. During the two field sessions a general surface collection of 350 artifacts, most of which came from Hane valley, was made.

The need and aim of forming a typology or of making a classification of sites and artifacts is discussed by K. C. Chang; it is not to be done for its own sake.
<table>
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<th>Raised</th>
<th>Paepae</th>
<th>Paepae</th>
<th>Paepae</th>
<th>Paepae</th>
<th>Me'a</th>
<th>Tohua</th>
<th>Unclass.</th>
<th>Agric. terraces</th>
<th>Misc.</th>
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<td>-</td>
<td>2</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>Kohau (ko)</td>
<td>17</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>3</td>
<td>4</td>
<td>23</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL:</strong></td>
<td>95</td>
<td>11</td>
<td>9</td>
<td>5</td>
<td>3</td>
<td>4</td>
<td>2</td>
<td>7</td>
<td>18</td>
<td>24</td>
<td>176</td>
<td></td>
</tr>
</tbody>
</table>
An archaeologist classifies in order to serve at least the following purposes: (1) to summarize his data and make them manageable by translating quantity into quality, expressed economically, effectively, and meaningfully; (2) to delineate units of archaeological facts according to their mutual relations within a culturally meaningful system and in order to reveal them; (3) to locate cross-cultural boundaries of the attributes of archaeological facts in order to obtain categories that are comparable across cultural systems, which in turn are indispensable for the discovery and/or formulation of cross-cultural patterns and regularities. The first aim can be an end in itself and can be done without regard to the cultural context, but the second and the third must be related to cultural systems. In the present discussion the first is to be regarded as an initial step toward the second and the third, and all classifications in archaeology are considered to be explicitly theoretical in intent and are, therefore, typological. (Chang 1967:71,72)

At present so little is known about the range of Marquesan sites and their function that the classification done is based on both form and function and is only tentative. No chronological sequence can be discerned, except possibly for the house sites.

On the other hand, artifacts, particularly the adzes, are useful in relatively dating a site and the general settlement area. Those found in the Hane valley will be discussed in some detail.

**Hane House Sites**

**Number:** Ninety-four, or slightly over one half of the 176 sites surveyed in Hane valley, were classified as house sites. This does not include the sixteen habitation sites on the tohua or other more specialized structures which were not for contentious dwelling. Whether this number represents a relatively small or large proportion compared to other Marquesas settlements cannot, at the present time, be said due to the lack of other similar surveys.
Top View: All of the Hane house sites, observed from top view, are one of four basic floor plans:

A.1

Rectangular with no partition or pavement

A.2

Square with no partition or pavement

B

Rectangular with pavement extending the length

C

Rectangular with the pavement extending the width

D

Square with a pavement

The condition of the sites was such that only on fifty sites, including the dwelling sites on the tohua and other more specialized structures, was it possible to take fairly exact measurements of the paved and unpaved sections. The width of the pavement shows a greater range than the width of the unpaved section; on nine sites it was less than two meters, on 26 sites it was from 2 to 3.50 meters, on 13 sites 4.00 to 5.00 meters and two sites had front pavements 6.00 meters and 9.20 meters wide. The stones used for the pavement were usually large, flat, often water-worn, and partially embedded so as to form a level surface.
The widths of the back, or unpaved section of the houses serving as the sleeping quarters, were mostly confined within a two meter range. A direct relationship does not seem to exist in size between the paved and unpaved sections of the same site. The house sites with the widest terrace did not also have the widest sleeping section. In fact, sites having a wider unpaved strip tended to have a smaller or equal sized front pavement. On 23 sites the unpaved strip was narrower than the pavement, on 14 it was wider and on nine sites the two were about the same.

House sites of Plan A having no pavement at all were delimited by a stone curbing.

Side View: In the valleys of the Marquesas where the people had settled, level land was rather limited; this necessitated a form of construction amenable to the varying terrain. In Hane valley six alternative ways were observed as the following cross-sections will show:
Land is flat. Houses may be of Plan A without a pavement or of Plan B, C or D with a low pavement at ground level.

Land is gently sloping. A stone terrace is built but the unpaved section is on the natural ground level.

The land may be steeper. The paepae is elevated on all four sides.

The construction of this paepae is somewhat similar to #3 except that it is built on level ground or on an artificially made terrace (ex. tohua).

The land is sloping. In addition to a raised stone paepae, the hill is partially excavated so as to form a sufficiently large level area.

The land is steep. Rather than filling, the entire area is leveled by cutting into the hillside. The house foundation is usually of Plan A without a pavement, though sometimes it may be added.

Fig. 5 House Cross-sections

In any attempt to set up a working typology of Marquesan house sites, one based on cross-section or form, rather than on top
view or plan, would seem to be much more meaningful. The six forms presented here cover all the Hane house sites and probably would serve equally well for Marquesan house sites in general.

The order in which the diagrams have been presented is not to be regarded necessarily as the evolutionary sequence. Houses of the construction form 1 or 2 could well have continued in use up to the historic period. However, on the other hand, the first development of these house forms may well have taken place in the sequence presented—all except for #5 which could have occurred before.

Exact figures cannot be given for the occurrence of each of the six house cross-sections because, due to disturbances, it is sometimes difficult to draw the line between them. To give a relative idea, though, the commonest house form was #2—perhaps up to 75%. Sixteen were of form #4, 12 of #6, about four of form #3 and the remaining ones of forms #1 and #5.

**Construction:** Because of the slope of the land and the orientation of the house, the front face of the paepae was usually higher, the stones larger, and the fitting better than on the back or side faces. None of the Hane house sites, however, were of any considerable height when compared to that of some of the house sites seen on the island of Nukuhiva. The maximum in Hane was 1.60 meters (Hat 23); and seven were around 1.50 meters. The lowest raised paepae over a single layer of stones thick (Tall) was 60 cm. high. In contrast were some of the sites in the adjoining valley of Hokatu. Though no surveys were made, eye measurements showed a tendency for them to be higher and more massive.
A special feature occurring on some of the house paepaes (Figs. 3, 4) and typical of the historic period Marquesan house is the alignment of what I have termed 'sitting stones' along the back edge of the front terrace between it and the unpaved section. Sometimes these stones were cut blocks of red tuff but more often they were simply specially selected large stones of a suitable shape. Their horizontal surface was about 50 cm. higher than the front pavement. The unpaved section behind could either be of the same height as these stones or slightly lower. Sometimes a second pavement—always relatively narrow—was added along the inner edge of these sitting stones.

House Size-Population Estimates: The area of the 92 house sites and 16 house structures has been computed and the results tallied on a 5 square meter interval scale (Fig. 7) in order to get a better idea of the house sizes in Hane. Thirty-two sites were incomplete and so the recorded area was only approximate, but was probably in most cases an underestimation.

The range of house size was from under 10 square m. to 140 square m. (the S.E. end of the Hat 30 tohua). One half (55 sites) was between 15 square m. and 30 square m. inclusive. The second concentration was between 50 and 70 square m., there being 17 sites (34%) here represented. Five of these were on the land Haturuiki. Haturuiki had not only the greatest number but also the greatest number of large house sites—eight out of eighteen were over 60 square m.
Twenty house sites (18%) were ten square m. or under. Many of these were incomplete so could probably fit into the next grouping of 15 to 30 square m. Eight sites were between 80 and 140 square m.

Knowing the number and size of the house sites within a confined area, one may be tempted to make a population estimate. There are at least two deterrents in doing so. The most obvious one is that it cannot be expected that all the sites were occupied at the same time. They cover a time span of at least several centuries or maybe more. Some sites would have been abandoned due to population changes, war, famine, infringements of certain tabus, etc.

The second problem is to assign a number for household size. House size varies, as probably did also the household size, but the larger houses did not necessarily provide shelter for more people. The length of the house might be a better index since the sleeping position was side by side with heads on the coconut log against the back wall and the legs sometimes extending over the other log laid parallel. The head was considered tabu—nothing was to pass over it, and according to Tautain, 1898, it was a serious offense to stride over a person, especially by a woman; and above the head, the part of the body that was very tapu. (1898:545) Therefore, it would seem that the longer the house, the more people it could sleep. The size of the front terrace and pavement was more aptly at least partially determined by the social prestige, and wealth, of the household as well as by the special functions that the terrace might have served. The construction of these larger elevated
Fig. 6 Sketch of Marquesan house
(Tautain 1897:544)

Fig. 7 Frequency-area graph of Hane house sites.
N= 108
paepae certainly would have demanded a sizeable working force, and specialists probably directed the work.

Returning again to the question of estimating population size, it is here thought at the most only 75% of the house sites were in use at the same time. If there were five to seven people per house, this would have added up to a settlement of between 350 and 500 individuals. (See Conclusions.)

House Location: Low lying coastal plains are very rare, or altogether absent, in the Marquesas, and particularly at Hane. The inland area is rugged with many long ridges and river valleys descending from the head of the main valley. The various locations where the Marquesans could build their houses and settle were along the coast (excavations having shown this to be the case in Hane), inland where for a short distance the land was relatively level, on the tops of ridges, if they were not too steep, on their sides, or in the valleys by the river where sometimes only a small amount of land was directly useable.

In Hane valley the house sites surveyed were distributed rather evenly into three ecological-topographical areas, all over 3/4 km. inland. One third were on the summits of relatively narrow ridges with steep valley walls. This location, the farthest inland, may have been preferred to the rather open areas further toward the coast for reasons of defense. It may have also been a later settlement area associated with a population increase and a change in land use. The lower lying areas, having at one time habitation sites, may have been reused for cultivation.
Approximately another third of the house sites were situated along the river at the base of a hill. Useable land here tended to be very narrow. Often agricultural terracing was associated with these sites.

The remaining house sites were scattered in the more level valley floors closer to the coast, plus twelve built on the valley sides. The land was generally too steep for more to have been constructed here.

**Historical Accounts of Marquesan House Sites:** A Marquesan house plan of the late 1800's shown in Figure 6 is similar to the ones described and illustrated by Handy and Linton in the mid 1920's. As can be seen, the house is built on a stone platform elevated on four sides; the pavement is stepped and the length of the unpaved back strip is bordered by coconut logs. This area was filled with grass covered with mats and served for sleeping.

The ridge pole, in proportion to the width of the house, was very high and the back side of the roof descended practically vertically to the house floor and thereby also served as a wall. The roof slope on the front side was more gradual and terminated three to five feet above the pavement. The material used for roofing and sides was pandanas, palmetto or breadfruit rather than coconut fronds. The front was left open or partially enclosed by an open screen work of bamboo or small poles with a door in the middle.

This house plan seems to have been basically the same during the previous one hundred years or even perhaps two hundred years.

(Quiros 1595, Forster 1778, Wilson 1797, Fanning 1798, Krusenstern 1804, Stewart 1829, V-Dumoulin 1843, des Verges 1860, Melville 1876
and Tautain 1898). Size and degree of elaboration seem to have been the main variables. The house visited by Fanning in Taoiohae, Nukuhiva was a "king's dwelling" situated in a grove of coconut and breadfruit trees. It is of special interest not only due to its very large size (about 27 meters by 7 meters) but to the subdivision of the interior by suspended mats. Four equal sized rooms were thus formed and the ones on the end were further subdivided into two which served for lodging. The house must have been constructed on a hill, or on a very high platform, for there were four rows of seats of faced stones that extended the entire length of the front side. They also served as steps. This feature was not duplicated in any of the other house descriptions nor among the house sites seen in Hane.

Another chief's house seen by Wilson in Vaitahu, Tahuata, also in the 1790's, was much smaller; it measured 8 meters by 2 meters and was about 3 meters high in back and 1.30 meters high in front. The width, as quoted by Wilson, probably does not include the front terrace, but even so the length is about two-thirds less than the Taiohae house site.

Nukuhiva is said to have lead in the quality and massiveness of her stone work while Fatuhiva was at the other extreme. However, as far back as 1595, Fatuhiva had houses raised above the ground.

There exist some differences between the descriptions of Marquesan houses prior to 1900 and the ones surveyed in Hane valley. Regarding shape, the historical accounts always refer to them as rectangular and Linton in 1925 writes,
As all the native houses were rectangular, this shape was appropriate for house foundations and its persistence in ceremonial structures, to the exclusion of all other shapes, lends some support to the theory that the house foundation is the basis of all Marquesan stone work. (Linton 1925:6,7)

Yet a number of the Hane house sites as well as other structures were square or nearly square. This is probably not as significant as the fact that two thirds of the 94 house sites were on ground level or on a very low foundation, one stone thick and having a maximum height of 35 cm. From reading the historical accounts, one is led to believe that all Marquesan houses were elevated on stone platforms. The size of the Hane sites fits into those described historically except for the site seen by Fanning having an area of 189 meters square. The largest in Hane was 140 square m.

Raised Paepae: "Raised paepae" is a descriptive term tentatively assigned to stone platforms elevated above the ground on four sides. Their original function is not known. They may have been house sites or me'a (in Nukuhiva the typical me'a and house site were of similar plan (Linton 1925:112)) though none had, perhaps on account of destruction, the surface plan of a house site.

In Hane valley there were eleven raised paepae. In shape they were both square and rectangular, and in size they ranged from 25 square meters, to 110 square meters. The facade of all but one was over a meter high, and the maximum was of 1.80 meters. The back side was always lower because of the slope of the land and the orientation of the site. Only scattered traces of pavement remained on the sites.
### TABLE III

**RAISED PAEPAE IN HANE VALLEY**

<table>
<thead>
<tr>
<th>Site</th>
<th>Dim. m.</th>
<th>Area</th>
<th>Max. H.</th>
<th>Tuff</th>
<th>CpSt</th>
<th>GrSt</th>
<th>Artif.</th>
<th>Misc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Po 11</td>
<td>8.5 x 4.5</td>
<td>38</td>
<td>1.50</td>
<td>-</td>
<td>1(1)</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ta 8</td>
<td>5. x 5</td>
<td>25</td>
<td>(low)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hav 3</td>
<td>12 x 7.</td>
<td>84</td>
<td>0.95</td>
<td>-</td>
<td>2(6)</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hav 11</td>
<td>6. x 5.5</td>
<td>33</td>
<td>1.50</td>
<td>-</td>
<td>2(6)</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hav 13</td>
<td>7. x 6.</td>
<td>42</td>
<td>1.00+</td>
<td>-</td>
<td>1(1)</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hat 1</td>
<td>10-15 x 7.</td>
<td>70+</td>
<td>1.00</td>
<td>x</td>
<td>2(12)</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hat 26</td>
<td>7. x 5.</td>
<td>35</td>
<td>1.50</td>
<td>-</td>
<td>1(3)</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hat 28</td>
<td>13 x 8.5</td>
<td>110</td>
<td>1.60+</td>
<td>x</td>
<td>4(11)</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ke 9</td>
<td>5. x 5.</td>
<td>25</td>
<td>1.25</td>
<td>x</td>
<td>4(7)</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ke 10</td>
<td>8. x 8.</td>
<td>64</td>
<td>n/r</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Taa 8</td>
<td>11 x 9.</td>
<td>99</td>
<td>1.80</td>
<td>-</td>
<td>2(5)</td>
<td>-</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*ma* pit nearby

*ma* pit

penu
The proportion of raised *paepae* having cupstones (nine out of eleven) was much greater than it was for the ordinary house sites which would suggest that these sites served a particular function. Five also had grinding stones and cut tuff had been used in the construction of three of them.

A number of raised *paepae* are located in the general area of ordinary house sites, others are near taro terraces, *tohua*, *me'ae*, or raised *paepae* with square pits. Topographically, they occur in the lower valley and on ridges. It has not yet been possible to note any direct associations in regards to the relative placement of these sites to other sites or to geographic areas.

**Paepae with Circular Pits:** Sites of this classification can either be raised *paepae* or semi-raised *paepae*, house sites or non-house sites but all have the special characteristic feature of one or more circular pits in the front terrace or pavement. Among the seven such sites in Hane Valley, five had the definite plan of a house, and three of these occurred on a *paepae* elevated on all four sides. In addition to these five, there are two variant sites which had a detached circular pit on the ground level (Te 2 and Hat 27). The house structure at one end of the Poiotona *tohua* which also had circular pits in the front pavement is not included in Table IV.

In eight out of nine cases, these *paepae* with circular pits occur near, or adjacent to, taro terraces which by corollary means that these sites were built in the lower valleys near a stream. In size they tend to be larger than the ordinary dwelling sites. Heights range from 50 to 60 cm. (*Va 9*) to 1.60 m. (*Hat 23* and *Te 3*). (See Fig. 8.)
### TABLE IV

**PAEPAE WITH CIRCULAR PITS IN HANE VALLEY**

<table>
<thead>
<tr>
<th>Site</th>
<th>Dim m.</th>
<th>Area</th>
<th>Pit</th>
<th>Tuff</th>
<th>CpSt</th>
<th>CrSt</th>
<th>AgTr</th>
<th>Artifacts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pe</td>
<td>5.5 x 5.0</td>
<td>28</td>
<td>1</td>
<td>1(2)</td>
<td>1</td>
<td>x</td>
<td>K.adze, i'i.</td>
<td></td>
</tr>
<tr>
<td>Ta</td>
<td>6.5 x 6.5</td>
<td>42</td>
<td>1</td>
<td>7(2)</td>
<td>-</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Va</td>
<td>6. x 6.</td>
<td>36</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>x</td>
<td>i'i</td>
<td></td>
</tr>
<tr>
<td>Va</td>
<td>15. x 8.9</td>
<td>133</td>
<td>2</td>
<td>2(3)</td>
<td>4</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Te</td>
<td>9. x 8.</td>
<td>72</td>
<td>2</td>
<td>1(1)</td>
<td>1</td>
<td>x</td>
<td>i'i</td>
<td></td>
</tr>
<tr>
<td>Te</td>
<td>9. x 3.</td>
<td>27</td>
<td>2</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Hat</td>
<td>10. x 7.5</td>
<td>75</td>
<td>1</td>
<td>1(1)</td>
<td>1</td>
<td>x</td>
<td>iron pot frag.</td>
<td></td>
</tr>
<tr>
<td>Hat</td>
<td>7. x 4.</td>
<td>28</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pu</td>
<td>9.5 x 8.5</td>
<td>85</td>
<td>2</td>
<td>1(1)</td>
<td>-</td>
<td>x</td>
<td>i'i, pounder, petro.</td>
<td></td>
</tr>
</tbody>
</table>
All of the pits were faced with stone on the sides and bottom but absolutely no attempt was made to fit them. The diameter ranged from 1.00 meters to 1.80 meters, and the average was 1.40 meters. The depth seems to have been regulated by the height of the paepae and varied from 0.40 to 0.80 meters.

Shell scrapers were found on four or five of the paepae, as well as a broken pounder and a complete koma adze. Cupstones occurred on five sites, and grinding stones on four of these same five sites.

Regarding the function of these sites and pits, in the early historical accounts no reference has yet been found to them, nor did Linton mention the occurrence of such a feature in his Marquesas archaeological survey. In Nuku hiva, Suggs noted what seems to have been a similar feature, on the veranda of a tohua in Taiohae, which he describes as follows:

A circular area about 5 feet in diameter, edged with natural slabs and paved with small, vesicular, basalt pebbles, was noted on the southern veranda and excavated. This feature proved to be an earth oven, filled with oven stones and charcoal-stained earth. Some pig bones and iron fragments were found in the base of the oven that had been dug into the dance floor fill to a depth of 3½ feet from the veranda surface. . . (Suggs 1961:47)

That these pits were used for ovens is a possibility though charcoal and the typical porous stones used for cooking were not seen in the Hane examples.

Another possibility is that the pits were for the storage of breadfruit, but this would seem unlikely. According to Linton, "The ma pits are always dug in clay soil and are never stone lined, although one or two tiers of stone may be laid around the top to keep
earth from falling in" (Handy 1923:189). If the pit were not water tight or air tight, the breadfruit undoubtedly would rot.

In order to reconstruct the function of these pits, all the sites, structures and features that might be related (house site, agricultural terraces, shell scrapers and grinding stones) ought to be considered together. In this way, I think it can be assumed that these sites were directly related to agriculture. My original proposition was that the pits were for the storage of tubers—either of wet land or dry land taro. If so, this would be the only place outside of New Zealand in Polynesia where roots were preserved. Taro takes eight to ten months to mature; once having reached maturity, the tubers could have been removed and put into storage, and the terraces replanted. This method would represent the maximal use of the terraces which otherwise were small and not numerous.

However, according to D. Yen and P. Pirie (personal communication) taro will not last longer than somewhere between a week and a month when removed from the ground. If this is the case also with Marquesan taro which was probably grown in a drier soil, then this hypothesis will have to be revised or discarded. More needs to be known about the taro plant itself; in the Austral Islands, a variety of taro (Taro Raratonga) which thrives only in drained soil may be stored for six months (Seabrook 1938:3).
Fig. 8. Hat 23, Paepae with circular pits

Fig. 9. Pa 1, Paepae with square and circular pits. Front wall.

Fig. 10. Pa 1, Pavement and square pit
<table>
<thead>
<tr>
<th>Site</th>
<th>Dim. m.</th>
<th>Area</th>
<th>Max. H.</th>
<th>Tuff</th>
<th>CpSt</th>
<th>GrSt</th>
<th>Artifacts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Po 24</td>
<td>5.5 x 5.5</td>
<td>30</td>
<td>1.60</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>penu, cut P.S.</td>
</tr>
<tr>
<td>Ta 5</td>
<td>8.5 x 6.5</td>
<td>55</td>
<td>1.20</td>
<td>x</td>
<td>1(1)</td>
<td>-</td>
<td>i'i, adze frag,</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>compl. adze</td>
</tr>
<tr>
<td>Va 1A</td>
<td>9.5 x 7.0</td>
<td>66</td>
<td>1.50</td>
<td>-</td>
<td>2(2)</td>
<td>-</td>
<td>2 koma adzes,</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>petroglyph</td>
</tr>
<tr>
<td>Hat 29</td>
<td>8.0 x 6.5</td>
<td>52</td>
<td>1.70</td>
<td>-</td>
<td>4(10)</td>
<td>x</td>
<td>penu, file</td>
</tr>
<tr>
<td>Ke 11</td>
<td>10.0 x 9.5</td>
<td>95</td>
<td>1.80</td>
<td>x</td>
<td>1(3)</td>
<td>-</td>
<td>penu</td>
</tr>
</tbody>
</table>
Raised paepae with Square Pit: In the Hane valley there were five raised paepae that were different from the other raised paepae by the presence of a square pit in the front terrace. These sites may be regarded as a distinctive type on the basis of plan and function and were also recognized as such by the Marquesans.

The importance of these sites in Marquesan culture lay in their ceremonial and religious uses. They are always found near a tohua, me'ae, or a special site.

In plan these paepae were square or rectangular and the size varied from 30 to 95 square meters. All were over a meter high. Tuff was not extensively used (nor does it appear to have been recently removed). Two of the paepae (ValA and Ke 11) may also have had a house structure, but it does not seem like a definitely associated feature.

The pits were usually square (one was rectangular) and ranged from 0.90 meters square, to 1.60 meters square. The pit descended to the original ground level so that the depth was determined by the height of the paepae. This could be from 0.60 meters (shallow) to 1.50 meters deep. The pits were walled with selected, fitted stones so that the faces were vertical. Very little close inspection was done of the pit floors since all contained damp trash, sometimes a coconut tree, and all are a haven for centipedes.

All those sites had a grinding stone, and four had cupstones. A broken pounder was found on three sites, a cache of two koma adzes on another, and a shell scraper and a complete adze on the remaining site.
The presence of these kinds of artifacts on a paepae with square pits is interesting and raises some questions. It is curious that pounders, theoretically a domestic implement for mashing breadfruit or taro, should be found on what undoubtedly were ceremonial sites. On the other hand, no pounders were found on the ordinary house sites. Could it mean that the use of pounders was restricted to certain people or to certain sites?

Two other tendencies which may have significance in the interpretation of these sites concern the occurrence of grinding stones and cup stones on these paepae and on the paepae with the circular pits. Grinding stones occurred more frequently on the latter, but more koma adzes were found on the former. This is contradictory, and it would suggest that the paepae with circular pits served a more utilitarian purpose while the paepae with the square pits more of a ceremonial one.

Cupstones were present on both types of paepae, but shell scrapers were more numerous on the paepae with circular pits--only one was found on a paepae with a square pit. This indicates a change of function of the cupstone on the latter site type. It is quite possible that in this stage that they were used as dye cups for tattooing which is the traditional and present day explanation.

Other Archaeological Accounts: The Marquesan term for these pits was pakeho meaning a wall (pa) faced with keho, a naturally occurring slabular basalt. The pits lined with these slabs were always rectangular--never round. (Tautain 1897:549,550)

According to Linton, pits of this sort could occur on dwelling sites "of the better sort" me'ae or certain ceremonial structures.
In Nukuhiva "they seemed to have been a nearly constant feature of the normal temple structure" (Linton 1925:13). These pits were "used either as refuse pits in which tapu objects and the remains of sacrifices were thrown, or as repositories for the skulls and bones of members of the tribe" (ibid.:14). Some informants told Linton that the pits on the house sites were for the storage of ma. However, this does not seem very likely, for the pits would not be air tight or water proof and would cause the breadfruit to spoil.

In Uahuka, Linton saw no sacrifice pits nor skull pits, and, therefore, it seemed certain to him that they were not in use there (Linton 1925:37). Nor did he see any in Uapou, Tahuata, or Fatuhiva, but his survey on those islands was very brief. However, in Puamau on the north coast and in Atuona on the south coast of Hivaoa he describes a number of me'ae closely resembling the Nukuhiva ones built on the plan of a large dwelling site with a pit on the front terrace (ibid.:37). If this distribution is correct, it is interesting for it shows further cultural ties of Uahuka with Hivaoa and Nukuhiva.

In Nukuhiva, Suggs excavated some of these 'skull pits' or what he calls "veranda pits." Some yielded nothing, others pig, dog, fish and/or human bones usually along with some European material. He concludes that these pits, "... were used for burials, cooking, disposal of tapu objects, general garbage, and breadfruit paste storage" (Suggs 1956:161). In Hane most of the pits would have been too deep and narrow for use as ovens though Suggs's contention is that the heated stones were brought in from elsewhere.
Suggs noted the occurrence of these pits on dwelling sites, me'ae, and tohua. A tohua of Hatiheu (NHe3) had four such pits. However, he does not directly associate them with such but with a stage and form of paepae construction, the "megalithic paepae" which "represents the culmination of the architectural ability of the Marquesans" (Suggs 1956:161) and dating to the middle and late Classic about 1600 A.D. Though this approximate date fits in well with the inland Hane chronology as reconstructed on the basis of adzes, the pits themselves are not necessarily associated with the megalithic, or elevated, stepped paepae. In Hane, none of the tohua had a square pit (though a paepae with a square pit was associated with two of the tohua) and no site had more than one square pit.

Tautain wrote that these structures were used only for certain religious ceremonies which for one reason or another, were not held on the me'ae (Tautain 1897:551). Therefore, according to this, they could exist along with a me'ae though not necessarily replacing it.

Raised paepae with Circular and Square Pits: After the preceding discussions and descriptions, this site category is self explanatory. Few generalizations can be made concerning these paepae since only two such sites were seen in the Hane valley. Va 1 is a variant form since the pits occur as separate structures and have already been commented upon but are included again here for an overall view since the paepae are built within the same enclosure.
RAISED PAEPAE WITH CIRCULAR AND SQUARE PITS IN HANE VALLEY

<table>
<thead>
<tr>
<th>Site</th>
<th>Dim. m.</th>
<th>Area</th>
<th>Sq</th>
<th>Cir</th>
<th>Tuff</th>
<th>CpsT</th>
<th>GrSt</th>
<th>Artifacts</th>
<th>Misc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Va 1</td>
<td>33 x 34</td>
<td>(1122)</td>
<td>1</td>
<td>1</td>
<td>-</td>
<td>3(5)</td>
<td>3</td>
<td>Koma adzes Petrog.</td>
<td></td>
</tr>
<tr>
<td>Va 7</td>
<td>12 x 11</td>
<td>132</td>
<td>1</td>
<td>3</td>
<td>x</td>
<td>4(7)</td>
<td>2</td>
<td>3 i'i</td>
<td></td>
</tr>
<tr>
<td>Pa 1</td>
<td>10 x 8.6</td>
<td>88</td>
<td>1</td>
<td>3</td>
<td>-</td>
<td>1(1)</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>

Va 7 and Pa 1 were both large and well constructed sites, elevated on all four sides with the back face measuring two meters or more in height. (See Figs. 9,10) Each had one square pit located about in the center of the front terrace and three circular pits along one side. A well-preserved house foundation remained on the former paepae along the south side so that the house would have faced inland. On Pa 1 it was impossible to make out any definite features though if there had been a house it, too, would have had to face inland. (Most houses in Hane face the sea or are perpendicular to it.)
Neither Suggs, Linton, nor the earlier historic accounts mention any similarly constructed sites having both circular and square pits. They undoubtedly represent a culmination of the functions of the separately occurring structures. These three were within close proximity to agricultural terraces, but not to tohua. They may have served a religious and economic function.

Me'ae: Linton defines a me'ae as "any tribal sacred place at which regular religious rites are performed. . ." (Linton 1925:31). In the Marquesas, they are the most difficult sites to identify because they vary a great deal in plan and they do not have any single characteristic feature such as the uprights on the Society Islands marae. Furthermore, the local people themselves rarely know which site is a me'ae or what constitutes a me'ae. When Linton visited

### TABLE VII

**ME'AE IN HANE VALLEY**

<table>
<thead>
<tr>
<th>Site</th>
<th>Dim. m.</th>
<th>Area Tuff</th>
<th>CpSt</th>
<th>GrSt</th>
<th>Artifacts, Miscellaneous</th>
</tr>
</thead>
<tbody>
<tr>
<td>Po 22</td>
<td>22 x 12</td>
<td>264</td>
<td>-</td>
<td>2(3)</td>
<td>i'i, shell chisel</td>
</tr>
<tr>
<td>Ke 1</td>
<td>30 x 25</td>
<td>750 x</td>
<td>3(5)</td>
<td>2</td>
<td>i'i, adze; sacrifice slab, petro.</td>
</tr>
<tr>
<td>Taa 1</td>
<td>23 x 18</td>
<td>414 x</td>
<td>6(14)</td>
<td>-</td>
<td>-; ma pit</td>
</tr>
<tr>
<td>taa 5</td>
<td>23 x 13</td>
<td>300 x</td>
<td>?</td>
<td>?</td>
<td>file, ii, P.S., bullet; tikis</td>
</tr>
<tr>
<td>Meai-aute</td>
<td>20 x 13</td>
<td>260 x</td>
<td>?</td>
<td>?</td>
<td>-; tiki</td>
</tr>
</tbody>
</table>
Uahuka in the 1920's he recorded five me'ae for the island, only one of which was in Hane (Meaiaute). At that time, the people told him that there were no me'ae in Hane, but that all were inland in the next valley to the west (Linton 1925:125). This would have been Toponoa which was inhabited by the same Tititea tribe.

Five sites in the Hane valley have here been classified as me'ae, though there may well be additional ones. All are characterized by a number of pavements or paepae (serving as the foundation of a house structure) usually built upon a larger semi-artificial terrace. Me'ae are relatively large sites; all were over 250 square meters. An intriguing feature was for one dimension of all five sites to have been between 20 and 25 meters. (This would have been equivalent to 12 or 14 fathoms.) There were only six other sites in the Hane valley that approached this dimension and these were between 23 and 25 meters; all were ceremonial or special sites so this measurement would hardly seem accidental.

Cut blocks of red tuff were used in the construction of all the me'ae except Poioiona 22 which I regard as an earlier site. Cupstones and grinding stones were not recorded on two sites. Artifacts were not numerous; the only specially significant one was a complete koma adze from Ke 1.

On Meaiaute there are three large standing tikis and one carved in relief on a tuff slab. It is a site which the Government wishes to preserve, however in the process of clearing the site in 1963, the tikis were rearranged. Two tikis were also found on Taaoa 5, a site which was partially excavated. It is the farthest...
inland of the sites in Hane valley and is built on a narrow, steep ridge. Near by are a banyan tree and a tamanu (Calophyllum inophyllum) tree, both of which are often associated with a me'ae. The site is thought to be fairly recent because of its location and the presence of a bullet found semi-buried near what was probably an altar. Taaoa 1, located 100 meters down the ridge from Taaoa 5, was classified as a me'ae because it was greatly similar in plan to Ta5. Adjacent to it was a large deep ma pit, four meters in diameter, three meters deep. The special feature of Kel was a large basalt slab 1.50 by 1.00 meters placed horizontally along the edge of the raised paepae. (See Fig. 11) Informants today say it was a stone on which sacrifices were performed or presented. The Poiotona me'ae, not far from the Poiotona tohua had at one time, also according to local informants, skulls placed along one edge.

Other me'ae accounts: Suggs in his Nukuhiva report makes a reference and describes eight me'ae though he gives no overall description or analysis of these structures. Human skulls and bones were found associated with all but one. One site was excavated and two were tested. Cowry shell scrapers, pierced whale's teeth and some European items were uncovered in the excavation. (Suggs 1961: 22-77).

According to Linton,

... Marquesan temples were divided into two main classes, public me'ae, used for ceremonies in which the whole tribe participated, and mortuary me'ae which were used primarily for the disposal of the dead... Images of wood or stone were placed in some public me'ae...
The mortuary me'ae were intended primarily for the disposal of the dead, though they were also the same of some of the most important religious sites, and many more human sacrifices were offered there than in the public me'ae. . . Almost all mortuary me'ae are built on high ground and at some distance from the village . . . " (Linton 1925:31-33)

This brief description ties in well with the Hane me'ae. Po 22 and Ke 1 would be mortuary me'ae and the other three public me'ae.

Again drawing from the data collected by Linton when comparing the Nukuhiva and Hivaea me'ae and how they relate to the Uahuka me'ae, it can be seen that the Hane ones have traits from both islands.

"In the northeastern part of Hivaea many of the mortuary me'ae were of the form common on Nukuhiva, but elsewhere they were either series of platforms, like those of Uapou and Uahuka, or series of superposed terraces. In them skull pits were rather common, but sacrifice pits were rare." (Linton 1925:40)

In Hivaea, found within the precincts of a number of me'ae were pits for ma, used as food by the priests; some of these pits are said to have also been used as repositories for skulls or for the debris of sacrifices (p. 39). Two of the Hane me'ae had ma pits close by.

Already in 1897, Tautain wrote that most of the Marquesan me'ae were so much in ruins that it was often impossible to reconstruct their ancient form (Tautain 1897:667). A me'ae that he saw in Nukuhiva and another in Hivaoa each consisted of a series of platforms. The Kukuhiva one was built on a ridge and had two square pits in the front terrace pavement.

Lawson in 1844 participated in a ceremony conducted on a me'ae located up in the Hatihiu valley on Nukuhiva. The site he describes as follows:
The Heahu (ahu or me'ae) was a large building of stones about four feet from the ground and about 100 yards in length by thirty in breath. On one side was built up some stone alters about six feet high and ten yards square. The whole place was shaded over by large trees and a house was built on one end. . . . At the back of the house on Heahu assembly ground, there was three rows of skulls lashed fast to the rafters. The two upper rows each contained 105 skulls and lower row 103—in all 313. These were the skulls of victims that had been killed in battle at various times and sacrificed to the gods. (Lawson 1876 MS)

Some of the points of interest in this account are the association of a me'ae to a large terrace and house site, human skulls and the 'large trees.' These were often banyans; the bones and skulls were placed in the roots and branches. One was growing near the Taaoa 5 me'ae in Hane. The other tree often found around me'ae is the tamanu (Calophyllum inophyllum)—as on sites Po 22, Taaoa 5 and Meaiaute.

Tohua:

Tohua is a Marquesan term to designate:

. . . the tribal assembly place at which feasts were given and certain classes of ceremonies performed . . . The tohua were essentially secular and could be visited by all classes of the population. . . The essential and only constant feature of the tohua was the dance floor, a piece of level ground large enough to accommodate the assembled tribe. (Linton 1925:24)

TABLE VIII

TOHUA IN HANE VALLEY

<table>
<thead>
<tr>
<th>Site</th>
<th>Dim. m.</th>
<th>Area</th>
<th>Max. H.</th>
<th>Tuff</th>
<th>CpSt</th>
<th>Artifacts, misc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Po 23</td>
<td>52 x 13.5</td>
<td>702</td>
<td>1.70</td>
<td></td>
<td></td>
<td>1(1) 1 circular pit; 3 1/4</td>
</tr>
<tr>
<td>Hat 30</td>
<td>65 x 16.</td>
<td>1040</td>
<td>1.80</td>
<td></td>
<td></td>
<td>?</td>
</tr>
<tr>
<td>To  1</td>
<td>23 x 8</td>
<td>(500)</td>
<td>2.50</td>
<td></td>
<td></td>
<td>1(3) sq. pit on ground</td>
</tr>
</tbody>
</table>
Fig. 11. Ke'etupu Me'ae  
(Front wall and sacrifice slab)

Fig. 12. Tohua 1 (Front wall)
In Hane there were three tohua. The plan of each was simple and basically the same (a house structure at either end of a long, unpaved terrace) but the time and effort required to build one must have been considerable. In order to obtain a sufficiently large leveled area, a great amount of cutting, building and filling had to be done. Two of the Hane ones were built near the base of a hill, parallel to its contour lines and the other (Po 23) was placed on top of a small ridge and oriented in the same direction.

Tohua are the largest sites in the Marquesas. The Hane ones are small compared to the very large ones on Nukuhiva ranging from 100 meters to 190 meters long (Suggs 1961:30-69). Linton noted that the length ranged from two to four times the width. Among the Hane tohua, on two sites it was four times and on one three times (four times if the lower terrace wall is taken as the length) the width. This would hardly seem coincidental.

Po 23 and Hat 30 had a small paepae built along one edge of the tohua and which do not appear to have been house sites. Perhaps they were a form of stage.

A special feature on Po 23 which did not occur on the other tohua was a circular pit 2.00 m in diameter by 40 to 70 cm. deep. Near by, in the pavement, a cache of three cowry shell scrapers were found.

The Tol tohua consisted of three artificially made terraces (land was very steep) with the tohua floor being on the middle one. The terrace wall that supported the lowest terrace was the highest
stone wall seen in Hane and also unusual because it was constructed with such relatively small stones. (See Figure 12.) On the courtyard of the tohua between the two end houses there was a squarish pit 2 meters wide, 60 cm deep that contained a few scattered stones.

The Hat 30 tohua was the largest in Hane and was slightly trapezoidal in shape. The houses at both ends had double-stepped front pavements. Just above the tohua on the hillside, there are eight large ma pits, one to seven meters in diameter with the latter being over three meters deep. Linton remarked upon a similar association in Hivaoa, but there the ma pits were within the tohua. (Linton 1925:27)

Cut red tuff was not used in the construction of Po 23 and To 1 and was not recorded for Hat 30. Cupstones were rare and therefore must not have been a necessary or important feature of tohua. Artifacts were practically non-existent.

It is difficult to equate the Hane tohua with those reported by Linton. In his 1920 archaeological survey of Uahuka he listed and described four tohua in Hokatu, four in Vaipae and three in Hane. His Site 55—the tohua of Oneei is probably Poilotona 23; Site 56—the Tohua of Vaitukuahi is Hatueki 30. Tohua he did not see. Site 57—the Tohua of Keetupu is probably Puikau 1, here described under Unclassified sites. Forty-five years later it in no way resembles a tohua, nor is it situated on the land Keetupu, but just below it. When Linton visited this site it consisted "... of a long dance space with a house paepae at either end, a rear terrace, and several small paepae for seats ..." (Linton 1925:126). An associated
enclosure which has been built over one end of this site Linton thought was a fortification. I suggested it was a pig pen.

The Hokatu and Vaipae tohua are of the same basic plan as those in Hane. The largest one was in Vaipae, and it had numerous associated structures, including a me'ae and a paepae with a "skull pit" or square pit.

Since the tohua was the main feast and dance area of the Marquesan tribe (Handy 1923:46), and the residence of the chief was close by, it can be considered the nucleus of the settlement. However, not enough is known about how the tohua tied in with the social organization and community activities and about why new ones were built. Any chief could probably build a new one if he had sufficient influence, men and food to feed them while they were engaged in this activity. In places like Hane where there were only one tribe and several tohua, it could mean that all the tohua remained in use (which seems unlikely unless the population was very large) or that as the settlement areas changed and new chiefs ruled, the older tohua were abandoned upon the completion of a new one. Suggs found that in Nukuhiva a tohua could be abandoned and later reused (Suggs 1961:43). The sequence of the Hane tohua is not known; the problem is primarily posed by Tohua 1, which either be the earliest or the latest.

Agricultural Terraces

On islands regarded to have been densely populated and where there was the need to produce surplus food to overcome the periods of famine, it is surprising that a greater part of the valley land was not developed for taro growing. In Hane valley only eighteen agricultural
<table>
<thead>
<tr>
<th>Site</th>
<th>L.m.</th>
<th>W.m.</th>
<th>Area</th>
<th>Elev.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Po 3</td>
<td>22</td>
<td>18</td>
<td>396</td>
<td>30m.</td>
</tr>
<tr>
<td>Po 12</td>
<td>30</td>
<td>19</td>
<td>570</td>
<td>33m.</td>
</tr>
<tr>
<td>Po 25</td>
<td>14</td>
<td>10</td>
<td>140</td>
<td>57m.</td>
</tr>
<tr>
<td>Po 26</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tan 9</td>
<td>15</td>
<td>13</td>
<td>195</td>
<td>37m.</td>
</tr>
<tr>
<td>Tan 10</td>
<td>14</td>
<td>5</td>
<td>70</td>
<td>50m.</td>
</tr>
<tr>
<td>Va 8</td>
<td>55</td>
<td>17-18</td>
<td>548</td>
<td>45m.</td>
</tr>
<tr>
<td>Va 11</td>
<td>35</td>
<td>17</td>
<td>595</td>
<td>50m.</td>
</tr>
<tr>
<td>Pa 2</td>
<td></td>
<td></td>
<td>500</td>
<td>65m.</td>
</tr>
<tr>
<td>Tev 1</td>
<td>38</td>
<td>10-12</td>
<td>380</td>
<td></td>
</tr>
<tr>
<td>Hat 18</td>
<td>18</td>
<td></td>
<td></td>
<td>70m.</td>
</tr>
<tr>
<td>Hat 23</td>
<td>12</td>
<td>3.5</td>
<td>42</td>
<td></td>
</tr>
<tr>
<td>Hat 23</td>
<td></td>
<td>5</td>
<td>4</td>
<td>20</td>
</tr>
<tr>
<td>Hat 23</td>
<td></td>
<td>6.5</td>
<td>4.5</td>
<td>29</td>
</tr>
<tr>
<td>Hat 31</td>
<td>16</td>
<td>9</td>
<td>145</td>
<td>95m.</td>
</tr>
<tr>
<td>Hat 32</td>
<td>4.4</td>
<td>2.4</td>
<td>18</td>
<td>90m.</td>
</tr>
<tr>
<td>Pu 2</td>
<td></td>
<td></td>
<td>300</td>
<td>110m.</td>
</tr>
<tr>
<td>Taa</td>
<td></td>
<td></td>
<td></td>
<td>(not surveyed)</td>
</tr>
<tr>
<td>Kohau 1</td>
<td>30</td>
<td>10</td>
<td>300</td>
<td>120m.</td>
</tr>
<tr>
<td>Koh 13</td>
<td></td>
<td></td>
<td>300</td>
<td>157m.</td>
</tr>
<tr>
<td>Koh 22</td>
<td></td>
<td></td>
<td>450</td>
<td>225m.</td>
</tr>
</tbody>
</table>
sites were surveyed and their total area was not much greater than that of the tohua and me'ae sites combined. The actual size of each ranged from under 100 square meters to between 500 and 600 square meters. None remains in use today.

There were two principal types of agricultural sites in inland Hane, each of which was partially dependent on the land form. One was an enclosure which was limited to relatively level land, and the other consisted of terraces built on sloping land, though these too could be enclosed. Both are found on the valley floor near a stream. No irrigation ditches were found, such as were seen by Handy in Uapou, Linton in Hivaoa and Tautain in Nukuhiwa. The Puikau terraces, due to their favorable placement, seemed to have received enough water through natural seepage. *Taru*, a dry-land taro, grows there in great profusion. If actual flooding of the terraces was necessary, other alternative methods would be by damming the stream above the terraces thus permitting the water to spread out and seep down from one terrace to the next or by the use of bamboo pipes. Linton reports a site employing the former alternative in Puamau, Hivaoa (Linton 1925:101) and a young woman in Hane told me that bamboo pipes were used for the Vaiapa 8 and 11 sites.

All the agricultural sites occur in close vicinity to the habitated areas; they are not found isolated from other sites. The three most impressive terrace sites in terms of size and manner of construction were adjacent to or near raised *paepae* with circular or circular and square pits or to a tohua with circular pits. Three
smaller terrace sites also situated along side of paepaes with circular pits and others were near tohua, and raised paepae.

Earlier accounts of taro terraces:

The general consensus of Europeans in the last century was that taro was relatively unimportant in the diet and was grown only on a small scale. In fact the cultivation of any food plants was not one of the main occupations of the Marquesans. Marchand, 1797, writes, "Agriculture doesn't seem to have merited their attention; one sees only some regular plantations of bananas and breadfruit." (Marchand 1796:139) According to Krusenstern 1804, "... As the Nukuhivans know but few wants, cultivation has made very little progress among them; and less attention is paid to it in this island, than, according to account, in any other part of this ocean. There are plantations of cloth mulberry, taro root and the pepper plant; but, comparatively speaking, very few ..." (Krusenstern p. 164). Des Verges, 1877, wrote that taro was found only in the wild state in the Marquesas and that the natives did not bother to establish plantations which demanded too much care. (des Verges 1877:65)

By the time of Tautain in 1897 these terraces seemed to have gone completely out of use, for his references are only to the structural remains in Nukuhiva. According to him they are to be found in every valley but are of very small size and unable to produce a sufficient crop in times of need. There were two methods to get water for the plants; one was through seepage and the other was through irrigation ditches which were always rather well made. In this case the
terraces were built perpendicular to the flow of the river, the height of each terrace augmenting as the slope of the land increased.

Linton's survey in the 1920's did not bear out Tautain's statement that agricultural terraces were to be found in all the Marquesan valleys. Instead, "They probably were constructed on all the larger islands but were nowhere very numerous." (Linton 1925:101). (What he probably meant was the larger valleys—not islands.) Furthermore, they tended to be small. An elaborate terrace site complex with stone irrigation ditches which went out of use in about 1850 was mapped by Handy in Uapou around this same time.

TABLE X
UNCLASSIFIED SITES IN HANE VALLEY

<table>
<thead>
<tr>
<th>Site</th>
<th>Dim. m.</th>
<th>Area</th>
<th>Tuff</th>
<th>CpSt</th>
<th>GrSt</th>
<th>Artifact</th>
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<td>33 x 25</td>
<td>825</td>
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<td>4(5)</td>
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Unclassified sites:

After having categorized most of the 174 Hane sites into house sites, raised paepae, paepae with circular and square pits, tohua, me'ae, and agricultural terraces there remained seven principal sites which did not seem to fit into any of these categories nor did they resemble one another.

Most were rather large sites and it can be noted that four had a length or width of 23-25 meters. All were made up of a number of pavements or platforms within the main site. Cut red tuff was observed on four of the sites and cupstones on all seven. Other special features were a petroglyph on Hav 21, cut coral blocks on Paupiu 3, and an accumulation of basalt flakes on and around Puikau 1 and kohau 5.

The function of these various sites cannot be ascertained though conjectures can be made. Katueki 9 may have been the site for a 'warrior's, or men's house, Hav 21 may have been a me'ae or tohua, Paupiu 3 was a tokai (a tokai being a place sacred to the memory of women who had died in childbirth—Linton 1925:40), according to Linton (see Figure 13), Kohau 5 may have been a sort of workshop and settlement center, and perhaps the others were also me'ae. The one certainty is that all seven sites were important ones in the community and served a ceremonial role of some sort.
Fig. 13. Paupiu 3 (Unclassified site)

Fig. 14. Cupstone, Hatueki 1
Cupstones:

In Hane valley among the sites surveyed there were 101 cupstones, distributed on 45 sites and having a total of 170 to 180 cups. All the lands surveyed had at least one site with a cupstone and Natueki had twelve sites (a single stone on a Natueki site had ten cups—see Figure 14).

Cupstones were generally incorporated into the pavement of a site. The texture of the basalt on which the cups were made varied from fairly fine-grained, dense to slightly vesicular to relatively coarse textured. The cups were round with a concave base and absolutely symmetrical. Their diameters remained within a 9 to 11 cm. range and their depths were mainly between $3\frac{3}{4}$ and $5\frac{1}{2}$ cm. though some could be as deep as 8 to 10 cm. This consistency suggests that the size was regulated by the object with which they were made.

Approximately one-third of the sites that had cupstones were the ordinary house sites, though none of the Poiotona house sites had cupstones. This may be of significance if Poiotona was indeed the earliest inland area settled. Cupstones were therefore predominately associated with the non-simple house sites and occurred on all of the other types of sites. Two or three of the cupstones seen were fractured across one cup which would suggest that the stone had fallen and broken probably in transport from another site. Several instances of cupstones having been used in the construction of a paepae wall was also noted; therefore, they could no longer have served as cups.
Marquesans today say that these cups served to contain dye for tattooing; Linton also refers to them as dye cups. However, it does not seem likely that this was their only use since they are so abundant and it in no way explains how they were made. On Va 7 a very shallow cup—apparently the commencement of one—was seen next to a deeper one. Cowry shell scrapers were found on the same paepae, possible association that had already been noticed. It was thus hypothesized that these cups were for making the cutting edge on the cowry shell scrapers and that originally these cupstones were limited to the sites connected with taro or breadfruit cultivation. During a later period these same stones were transferred to the ceremonial sites or to sites where tattooing was done. The absence of cupstones on the Poiotona house sites may have been due to the fact that agriculture was just commencing and the fabrication of scrapers was confined to the Poiotona tohua where there was one cupstone with one cup and several scrapers.

To test the hypothesis that these cups were used to make scrapers, or the grinding edge of scrapers, a new cowry of the same species was obtained and with the aid of water and an abrasive, after much grinding (up and down and around) a circular perforation 1½-2 cm. was made. The finished scraper is identical to the ones found archaeologically which would not have been the case if the hole had been made on a flat surface. (See Artifacts: shell scrapers.)
Grinding and polishing stones:

A grinding stone is here defined as a basalt slab, boulder or rock with one or more grooves for grinding or sharpening adzes and a polishing stone as one with a circular, slightly concave depression formed by a circulatory grinding motion. (In the site tables the two have not been differentiated.) Eleven sites (seven lands) had the former, and eleven sites (seven lands) the latter. As was the case with cupstones, grinding and polishing stones were not definitely associated with any particular type of site since they occurred on all types except the tohua and ordinary house sites. Eight sites had both a grinding and a polishing stone and sometimes one of these was combined with a cupstone.

Lands on which no grinding or polishing stones were found were Puikau, Paupiu, Vaiaoihi, Taaoa and Kohau. The most significant absence is on the land Kohau. When that area was inhabited, steel tools might already have come into use.

Cut red tuff:

Tuff is a soft stone consisting of volcanic ash which can relatively easily be worked with stone tools. It often was used in the Marquesas in the construction of larger or more imposing sites. In Hane the source of the tuff seems to have been on the land Kohau in the east where there is a large outcropping of the material on the lower end of the ridge. (For a description of the quarrying methods, see Linton 1925:9.)
In Hane, cut blocks of tuff was seen on sixteen of the sites surveyed. Eight of these sites were located on the adjoining lands of Hatueki and Keetupu, which may have been—perhaps just prior to European contact—the main settlement area of the valley. Cut tuff was not seen on the land Poiotona, probably an earlier settlement, nor on the lands near by.

Tuff was primarily used in the construction of the me'ae sites—it occurred on all except the Poiotona one. It was not used in the ordinary house sites nor on the paepae with circular and with square pits, though some was present on Va 7 which had both kinds of pits. When used, either a block of it was placed in the front paepae wall or a series of blocks were aligned along the edge of the upper pavement of a house on a me'ae.

Petroglyphs and Tikis

Linton saw petroglyphs on the islands of Hivaoa, Tahuata, Uapou, Nukuhiwa and Uahuka "but /they/ are by no means common in the Marquesans" (1925:96). The local inhabitants did not know of any in Hane valley so it was quite unexpected to find a petroglyph on four sites (Vaiapa 7, Havaiki 21, Puikau 2 and Keetupu 1).

The petroglyph on Puikau 2 (paepae with circular pits) was made on a pavement stone and consisted only of a small circle. The one on Hav 21 (Unclassified site) was also done on a horizontally placed slab but the design was made up of a pair or concentric circles, with one pair being connected to a single circle by a straight line. The
design covered a space of 50 by 20 cm. though the size of the slab was 120 x 90 x 40 cm. and had in addition six cups. An adjoining boulder, slightly smaller, had five cups. The two were located at the west end of the site, and a great deal of turbo shell was scattered around. The petroglyph may have been a tattoo design (face) and cups might have been for the dye; the site itself may have been a me'ae or a tohua.

The other two petroglyphs because of their placement appear to have been made before the construction of the site. One was on the corner stone of ValA, a raised paepae with a square pit. Some circle motifs were first noted on the outer face, and when the stone was moved (it taking three men with poles to do so), three tiki designs were found on the inner sides (see Figure 16). The same stone also served at one time as a polishing stone. This repeated use of the same stone, and the same stone serving a number of purposes, was a phenomenon noted several times in Hane.

The Keetupu 1 petroglyph was very interesting. The slab on which it occurred was also used in construction, this time in the outer wall of what undoubtedly was a me'ae site. This slab measured 100 cm. x 75 cm. Pecked into it was a stick figure of a man with arms extended, hands upright but laying in a horizontal rather than in a vertical position which would suggest that it was not done when the stone was in its present position. The design measured 30 by 25 cm. (see Figure 16). If it has been in Hawaii, it would have been regarded as more or less a typical Hawaiian petroglyph, but for the
Fig. 15. Petroglyph, Vaiapa 1A

Fig. 16. Petroglyph, Ke'etupu 1 Me'ae

Fig. 17. Tiki, Ta'aao 5 Me'ae
Marquesas this linear design was quite startling. My first impression was that it must be recent. However, except for the use of a double line to represent the body, the Ke 1 petroglyph is practically identical to two others on a slab near the mouth of the Haatuatua river on Nukuhiva. This same stone also had two stick figures of dogs (Suggs 1956:Plate 11). It is also similar to petroglyphs photographed by Linton in Haniaiapas, a large valley on the north coast of Hivaoa (Linton 1925:Plate XIII A).

Though there is no way to date petroglyphs other than by associations, it would certainly seem that these simple stick figures originally preceded the more common curvilinear designs and figures. The fact that the former type occurred in juxtaposition with the dog motif is significant because, by the time of European contact, the Polynesian dog had been exterminated. In the MUH1 excavations dog bones were found in Level V which dates back about 1000 years. This is not to say that the petroglyph is equally old, but only that it could be as old. The question that remains unanswered is why should this stick figure occur on a me'ae site as a reused basalt slab in an area thought to be the last main area settled.

Tiki:

Tiki are rather common Hivaoa and Nukuhiva but rare on Uahuka. The small, portable ones have a high market value so that the only ones that are likely to be found in situ on a Marquesan site are those too large to move or those that have not yet been found.
The Bishop Museum was fortunate in recovering two small tiki when excavating the Taaoa 5 (me'ae) site far up in the Hane valley. One was a small unfinished specimen still in block form. The other was larger and had a very unusual form for a Marquesan tiki. It was fashioned from a water worn, oval shaped basalt stone about 39 cm. long by 13 cm. wide. The face consisted of two oval eyes and a broad, thin elliptical shaped mouth; the arms rested across the chest and the legs were not defined. By Marquesan standards this tiki appeared to be rather crude and resembled more the Society Island tikis (see Figure 17).

The second and only other site on which tikis were found or were known to have existed was on the Meaiaute me'ae. When Linton visited the site in the 1920's, it was so overgrown with brush that he saw only one tiki, though his guide did tell him that there were four others. Recently the site was cleared as part of the Government restoration program, and the three tiki can now be seen. The head of one was retrieved from the deep gully below, and the two others have been shifted from their original position.

All were sculptured from a large block or red tuff, which probably came from the outcropping on land Kohau mentioned earlier, and situated not far from the me'ae site. The three tiki are remarkably similar in appearance thereby suggesting that they date from the same period and that they were made by the same person or group of persons. Their height above ground level is 100 to 120 cm., width at shoulders 60-64 cm., at neck 40 to 54 cm., and at the top of the head 55 to 59 cm. The thickness is from 34 cm. to 40 cm. The back sides are practically
straight and there is little or no demarcation at the neck (see Figures 18, 19 and 20).

Of special interest on Tiki A is a small raised design on the left side of the neck which may have represented a tattoo or an ear ornament. All three tiki had a slightly raised band across the top front side of the head, or what Linton terms as a "low flange" (1925: 76). A feature noted by Linton on the tiki he saw, and which the others also shared, was "the rare convention in stone tikis for the ears to be carved in full and standing at right angles to the head" (Ibid:126). The only other instance he saw of this was on a tiki in Atuona, Hivaoa.

The fourth tiki was a small one carved in relief on a tuff slab 1.40m. long and placed along the back side of the me'ae on the inner edge of a pavement. It is now in poor condition.

If sufficient data were available, a comparison could be made of these three Hane tiki with tiki from Hivaoa and Nukuhiva. According to Linton, "the largest and finest stone images are on Hivaoa, those on Nukuhiva being technically inferior" (Linton 1925:75). For each of the two islands, "one facial convention seems to have been common" (Ibid:76). The fact that there is such a contrast between these tiki on Meaiaute and those on Taaoa 5 would certainly suggest that the former may be the result of outside contact, so further research could probably pinpoint the island (most likely Hivaoa or Nukuhiva) from which this might have come.
Fig. 18. Tiki A, Meaiaute
Fig. 19. Tiki B, Meaiaute
Fig. 20. Tiki C, Meaiaute
Hane Artifacts

On Uahuka, during the 1964 and 1965 field trips, 350 artifacts were collected from the interior. Most of these were from the inland Hane valley while others came from the adjoining valley of Hokatu. Over three-quarters of the artifacts were adzes which are amenable to typological classification and consequently useful in reconstructions and comparisons.

Whereas in an excavation, portable artifacts and their stratigraphic placement are often the essential data for the interpretation and reconstruction of a site, in a settlement pattern study the artifacts—generally surface finds—are of secondary importance. If the collection is a large and representative sample, and comes from a localized area, some general inferences can be made regarding the range of activities and the relative age of the sites and settlements.

The main points that will be discussed regarding the artifacts are:

a) a description of the artifacts classified according to function and to material,

b) the distribution of the artifacts in Hane valley,

c) a comparison of the inland and coastal Hane artifacts and

d) a comparative study of artifacts from four areas in the Marquesas.
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Classification and Description

Adzes:

No satisfactory typology has yet been devised for Polynesian adzes. The Duff typology was not suitable for a detailed adze study—especially of Marquesas adzes—because there is too much variety within each of his suggested adze types and subtypes. Suggs did a typology of Marquesas adzes limited to adzes from Nukuhiva. It is incomplete as it does not cover all the Marquesas adze types and what he some of his adze types might better sometimes be regarded as a subtype.

There appears to be a great deal more variation among Marquesas adzes than the Hawaiian and Society Islands adzes. For this reason, until Marquesan adze types are satisfactorily defined, it was decided that an attempt to do a detailed analysis of the Hane adzes would not be very meaningful. Furthermore, the sample, though large, was not good for such purposes. First of all, out of 271 adzes there were only twenty-three complete specimens—seventeen of which were from the Hane valley—so that it left a large number of adze fragments and sections which are not always sortable into types. Secondly, nearly 40 percent of the same collection consisted of adze blanks and rejects.

Regarding the difficulty in identifying adze types among the Uahuka collection, one exception may be made. This concerns the koma adze, otherwise known as the hogback or Duff Type 4C. It is also the one adze that still retains its Polynesian (Marquesan or Tahitian) term koma or 'oma—other adze types are known by the general term toki.
or toʻi. It is generally considered a later type of Marquesas adze, and was in use at the time of European contact since it is to be found in its original hafted form in ethnographic collections made by the early explorers. According to Suggs, "It was definitely not present in the Settlement or Developmental periods" (Suggs 1961:111).

The koma is a tanged adze—typically with a narrow blade face and cutting edge, and seemingly the only Marquesan adze in which the cross-section at the shoulder (triangular, apex upwards) is diagnostic of the type. Because of this special characteristic feature, adze sections and sometimes adze blanks can be identified; so the 272 adzes, adze sections and adze blanks have been tentatively classified as koma, non-koma and questionable.

TABLE XII

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<td>66</td>
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The koma adzes account for at least 51 per cent of the adze collection. This is a relatively high proportion, even though blanks and sections have been included. In two other studies of Marquesas adzes (Kellum, unpublished) among a 200 sample size, 38 per cent were
koma; among a 273 sample size, 25-30 percent were koma. Suggs in his 370 adzes from Nukuhiva identified 113 or 30 percent as being koma.

Koma are generally the largest of Marquesas adzes. In the 200 Marquesas adze study, the mean length for 75 koma was 162 mm. and the range was from 80 mm. to 348 mm. However, the ones found in Hane valley were relatively small; the mean length of the complete ones was 103 mm. and the range was 58 mm. to 171 mm. Sections of much larger koma adzes were found, and if complete they would also have been the largest adze type in the Hane valley.

There are two slight variations of the koma adze in the Hane valley collection; this difference can probably be accounted for by function rather than time. One tends to have a higher shoulder-index (shoulder thickness/shoulder width) and a narrow blade face and cutting edge; the other a lower shoulder index—therefore, a flatter adze—with a wider blade face and cutting edge. Both varieties are tanges as are all koma adzes except possibly for the koma proto-type. In larger collections there are additional variations not noted in this small sample.

As mentioned, the non-koma adzes have not been assigned into types. In the 1965 collection there were only seven complete specimens; five were from the inland Hane valley, one was from near the coast, and one was from the adjoining valley of Hokatu. Table XIII is a list of these adzes along with measurements, shoulder index and cross-section.

MUH-242 and -300 were similar in being small, and slightly tanged to tangless, and in having a rectangular to trapezoidal cross-
### TABLE XIII

**COMPLETE ADZES, HANE**

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<td>(Inc., butt broken)</td>
</tr>
<tr>
<td>- 1</td>
<td>70+</td>
<td>25</td>
<td>19</td>
<td>76</td>
<td>yes</td>
<td>(butt broken)</td>
</tr>
</tbody>
</table>

**Non-Koma Adzes**

<table>
<thead>
<tr>
<th>MUH-242</th>
<th>70</th>
<th>33</th>
<th>16</th>
<th>48</th>
<th>slight</th>
<th>(grd on face and base)</th>
</tr>
</thead>
<tbody>
<tr>
<td>-300</td>
<td>70</td>
<td>30</td>
<td>15</td>
<td>50</td>
<td>no</td>
<td>(over all grinding)</td>
</tr>
<tr>
<td>-396</td>
<td>60</td>
<td>28</td>
<td>26</td>
<td>93</td>
<td>no</td>
<td>(pebble)</td>
</tr>
<tr>
<td>-437</td>
<td>56</td>
<td>27</td>
<td>14</td>
<td>52</td>
<td>slight</td>
<td>(grinding on face)</td>
</tr>
<tr>
<td>- 77</td>
<td>64+</td>
<td>32</td>
<td>21</td>
<td>65</td>
<td>slight</td>
<td>(grinding on bl. face)</td>
</tr>
<tr>
<td>- 97</td>
<td>116</td>
<td>39</td>
<td>25</td>
<td>64</td>
<td>lat.</td>
<td>(chipped &amp; grd on bl face, face &amp; base; side haft?)</td>
</tr>
<tr>
<td>-118</td>
<td>48+</td>
<td>14</td>
<td>13</td>
<td>93</td>
<td>yes</td>
<td>(grd on bl face &amp; bev)</td>
</tr>
</tbody>
</table>
section, a low shoulder index with a wide blade and overall polishing. The remaining adzes and adze sections exhibited a number of different cross-sections, and as is commonly the case with Marquesan adzes, these cross-sections are not always easily definable. This is one reason why the Duff typology is not very applicable, also, adzes with the same cross-section can either be tanged or untanged.

Some of the cross-sections noted in the MUH collection, apart from the upright triangular or koma, are thin rectangular, thin to thick trapezoidal—upright and reversed, reversed triangular, and a few slightly to semi-oval. The later was exemplified by a blade fragment MUH-356 and is equivalent to the 'Hatiheu' type adze as described by Suggs. It is of particular interest for it is considered to be an early form or type of Marquesan adze (untanged, with overall grinding) and one which was later dropped or discontinued.

Regarding the fragments of the non-koma adzes, most were sections of the butt or of the blade. Therefore, until they can be assigned into types, it is not known whether these adzes tended to be tanged or untanged. (Most Hawaiian adzes are tanged.) However, in an previous study (Kellum 1966) it was found that Marquesan adzes, apart from the koma, tend to be untanged.

The remaining fragments and blanks were either so small or in such a rough form that it was not possible to classify them other than as "questionable."
Adze Technology

A characteristic of the island Hane surface adze collection was the high, or what seems a high proportion of adze blanks. They amounted to 40 percent. However, if this percentage is compared with that from the MUHL coastal site (surface and excavation), the difference is not so great. During the 1964 field season 30 percent of the adzes were blanks; during the 1965 field season 38 percent were blanks. This may represent the median range.

Regarding the condition or stage of these adze blanks from the inland area, only about ten out of the 109 were what might be termed 'complete' adze blanks, or in other words, finished adzes except for the final grinding and polishing. The remaining appeared to be principally rejects—adzes that were commenced and then discarded because of faulty flaking or breakage.

The primary methods of manufacture shown in this collection was flaking and chipping. Though the koma is regarded as a later development, it was undoubtedly the easiest and quickest adze to make because it was the least worked. It had three main faces, the level plane base being one which was formed by flaking and chipping. Grinding, for the most part, was limited to the bevel and blade face; occasionally there were traces of grinding along the sides of the blade. This is quite in opposition to the Society Island koma adze whose surface was entirely reworked by grinding, and sometimes pecking. An interesting side feature of the Marquesas koma adze is the tendency sometimes for the bevel to be slightly concave. This cannot yet be accounted for and so far has not been noted on other adze types.
Overall grinding and polishing of the adze surface did occur in the Marquesas, but it is relatively rare. Among the nine Marquesan adze types described by Suggs, only the Hatiheu adze is characterized by overall grinding. This can be enlarged to include a few other types or sub-types from Uahuka but not found or recorded by Suggs on Nuku hi va.

Contrary to some statements, pecking does occur on Marquesas (Uahuka) adzes, though it is quite rare. It was noted on some of the dike stone adzes from the MUH1 excavations, as well as on basalt adzes. Amongst the MUH inland collection, five adze fragments showed traces of pecking (three koma and two of rectangular-oval cross section).

No presently known site or area in the Hane Valley may be identified as an adze quarry or adze workshop. Several sites did, however, have a small accumulation of scattered basalt flakes. These could have been working areas, though the scale is rather small. Grooved grinding stones used to grind or sharpen adzes were not very plentiful; in fact, there were only eleven. The circular, slightly concave grinding stones were more numerous (20) though their use may not have been limited to grinding or polishing adzes.

The stone selected for the fabrication of adzes varied somewhat in material and general appearance but was always a rather fine grained, dense basalt. (This is mentioned so as to note the difference in selection: for pounders, a slightly vesicular or coarser textured stone was used; for sinkers, a very vesicular or coarse-textured stone.)
A number of the Hane valley adze blanks and adze sections were of a similar basalt having small clusters of augite crystals (identified by Dr. McDonald, University of Hawaii) which would suggest that the stone may have come from the same outcropping.

Sometimes river stones were used; this can be determined by the fact that some of the adzes still retain part of the cortex.

The use of dike stone is an interesting feature of the Hane adzes. In the MUH1 coastal excavations such adzes were found only from the lowest level in Area B and from below Level III in area A (Sinoto and Kellum 1965:23) which is to say that they represent a very early form of adze dating back about 1000 years. In Hane valley only one dike stone adze—a blank—was found. A number of other adzes may possibly also be dike stone, but in any case, are not as significant because the workmanship is different. The adze surfaces have been chipped rather than formed by using the natural cleavage faces.

**TABLE XIV**

POUNDERS, INLAND HANE

<table>
<thead>
<tr>
<th>Height</th>
<th>W/base</th>
<th>W/neck</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUH-290</td>
<td>130</td>
<td>92 x 107</td>
</tr>
<tr>
<td>-309</td>
<td>145</td>
<td>70 x 77</td>
</tr>
<tr>
<td>-384</td>
<td>113</td>
<td>52 - 60</td>
</tr>
<tr>
<td>-159</td>
<td>113+</td>
<td>84 - 89</td>
</tr>
<tr>
<td>-380</td>
<td>103+</td>
<td>125</td>
</tr>
<tr>
<td>-308</td>
<td>113+</td>
<td>117</td>
</tr>
<tr>
<td>-349</td>
<td>96</td>
<td>100 x 105</td>
</tr>
<tr>
<td>-314</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
Pounders: (penu)

Seven pounders and pestles were found in the Hane valley. Not listed above are two small pounders or pestles donated by the children of Hane. No blanks or unfinished pounders were recorded. This relative scarcity of pounders is not surprising; they are a utilitarian item and have a market value and are collected whenever found.

In the Hane collection there were three complete specimens, four base sections, and one head. MUH-309 was probably a pestle as was MUH-38 habit. The later was a more unusual specimen and will be described in detail.

These pounders are more or less of the typical Marquesan form—narrow neck, flaring sides and a round or nearly round, slightly convex base. The edges of the base were one to two centimeters higher than the center of the base. The necks were round to oval in cross-section and their diameters confined within a range of 32 to 46 mm., whereas the diameters of the bases was greatly more fluctuable (70 to 125 mm.). The relationship between the two dimensions may be considered as follows: pounders MUH-208 and -308 had bases three times the diameter of their necks; MUH-159 and -349 had bases two to slightly over two times that of the neck; and the pestle MUH-309 had a base twice to slightly under twice the diameter of its neck.

Among pounders, the head is often the most characteristic or identifying feature, but in this small collection there were only three. The head of MUH-290 was undifferentiated from the neck and flat across the top; that of MUH-309 was the same except that the top face was slightly convex. Only the head section MUH-31 habit was in any way embellished.
It is of a form often associated with Marquesas pounders and referred to as the 'phallic type.' The width of the head is about one centimeter greater than the width of the neck and across the top which is fairly flat there is a groove which continues a short ways down either side.

Uahuka is said to have been the island where a special stone was quarried for making pounders (Suggs 1961:103). However, none of the pounders found in Hane seemed to have been made from a special basalt. That used was slightly vesicular. Only MUH-280 and -308 had well finished, smoothed surfaces—at this point it is interesting to note that these two were found associated with the Paepae with the square pits. The surfaces of other pounders were left slightly rough.

The remaining specimen, MUH-38½, found along a river bank about one meter below the floor level of a house site has been unmentioned so far because it seems to be an unworked, naturally shaped stone. It is 113 mm. long, rectangular-to-squarish in cross-section, and its four faces flare out at the base which measures 62 mm. by 52 mm. The sides are smooth (one is slightly darker than the others, perhaps as a result of handling) and the over-all form is such that it fits comfortably into one's hand. The material is an exceptionally dense heavy basalt. Due to its small size and relatively convex bulbous base, this implement probably served as a pestle rather than as a pounder and cannot necessarily be related to an earlier period of taro cultivation.

No typology has been attempted for these pounders because the number is too small and the specimens are not complete. In 1923, Linton did a typology of Marquesan pounders which was used by Suggs for his
Nukuhive material and who added a fourth type. Both of these typologies are based primarily upon the head forms so are of little value when only the base sections are available.

The only exception is the "Conical type" which tends to be a shorter, stubbier pounder lacking the long slender neck of the other pounders. It is suggested that more pounders be studied in greater detail in order, for instance, to note if a particular head type can be associated with a particular body form.

Shell Scrapers:

Next to adzes, the most common artifact, though they were not always found in conspicuous places, in the Hane valley were cowry shell scrapers. The total number recovered was 35, only two of which were found during the first field season. Fourteen were complete, seventeen broken and four unfinished.

The only species of cowry used for these scrapers is the Cypraea Peribolus mauritiana Linn (or hump back), a rather commonly occurring shell in the Marquesas in tide pools along the coast. The same implement referred to as an 'i'i in Marquesan continues to be used in present times for peeling breadfruit and taro, though its method of fabrication has changed with the availability of modern tools.

In an attempt to reconstruct the manufacturing techniques used to make an 'i'i by studying specimens recovered from the inland sites, I experimented by using only the tools that would have been available to the Marquesans in pre-European contact times. After obtaining the shell, the first step was to remove the inner whorl (if the shell is alive, the
animal could be removed at the same time) by knocking out the right side lip (looking at the base of cowry, apex/base downwards) with an adze or basalt flake. The shell was then turned over and a semi-circular hole large enough for the ejection of the vegetable peelings was chipped away on the top side, upper end. Both of these preliminary steps can be done quite easily and rapidly. (Unfinished scrapers occurred in this state of completion.) The final step was to make the cutting edge. This is always placed at the base or apex end of the shell. For a more detailed description and reconstruction of how this was done, see the section on Cupstones. A grinding stone and cupstone are thought to have been used to make the cutting hole. Scrapers made in the field by this method exactly duplicated those found on the sites, which would not have been the case if only a grinding stone, and not a cupstone, had been used. Today a steel file, or preferably a grinding wheel, is used for this last step.

The cowry shell scraper is one Marquesan artifact that cannot be further divided into sub-types simply because no variation is apparent other than size and degree of use. On scrapers that have been greatly used and resharpened, the circular cutting edge descends down to the lip division. It is at this state that the shell is most likely to split. This would account for the numerable 'i'i fragments.

As for size, most of the scrapers ranged from 65 mm. to 83 mm. There were two between 60 and 65 mm. and one exceptionally small one measuring 46 mm. (MU-321). Being too small to be very practical as a scrapper, it must have been a toy one, although it was found on the Polotona tohua.
The other univalve shell used by the Marquesans for vegetable scrapers was a rock shell or the Purpura Persica L. shell (misidentified by Suggs as a tonna shell). A single circular perforation sharpened to form a cutting edge was made on the top or lower side so that the scrapings would be ejected through the mouth. In one instance, on a specimen found in excavation in Haatuatua, Nukuiva (MNH-16-2) the cutting edge was at the apex. However, this specimen was so small—only 26 mm. long—that it can be regarded as an exception.

Two Purpura shells were found in the Hane valley. One was perforated, but it did not have a cutting edge (MUH-261). The other was unworked. This species of shell appears to be harder than the cowry and therefore gives a sharper and longer lasting cutting edge. However, the fact that it is much less frequently found used as a scraper could mean that the shell itself is scarcer or that it is an earlier type. In later times when the population increased and there was perhaps a greater dependency on taro and/or breadfruit, the cowry shell scraper came into use because the shell was more plentiful and easier to work.

**Sinkers:**

Small sinkers which were probably intended for fishing lines or nets were an unexpected find in the interior sections of Hane valley. Similar ones found on the coast were referred to in the Bishop Museum Marquesas report (Sinoto and Kellum, 1965) as "plummet" sinkers. They are somewhat pear-shaped with a groove near the top for lashing the line.
Five were found in the Hane valley but all were broken or partially broken which might suggest that they were rejected in the process of being made. The stone selected was either a very course or a porous lava, a material probably not difficult to work, but also not very solid.

There were three head sections (MUH-389, 425 and -440), one base section (MUH-397), and one nearly complete specimen (MUH-279). All of the heads were made in a similar way—between the small short head and generally a relatively large bulbous base there is a slight groove (i.e., around the neck) with another groove across the top of the head. The heights of the heads ranged from 15 to 25 mm. and their diameters from about 30 to 40 mm.

The base section was rather large for a sinker (75 mm. in height and 87 mm. across the base), and it might have been intended for use as a pestle instead. However, the quality of the stone, the non-symmetry of its form, and the flatness of its base were features that suggested the contrary.

One complete plummet sinker (MUH-407) found nearer the coast during planting of manioc was given to the museum expedition. It had a longitudinal groove across the base and two-thirds up the sides and was the only sinker of the six that had a well finished, smooth surface.

All of these types of sinkers Suggs refers to as "turtle lures." This term, he writes,

... is an adaptation of the Marquesan name Ke'a honu (turtle-catching stone). A different designation would be no more suitable, as there is little ethnographic information concerning their range of uses ... These artifacts, a part of the original proto-Marquesan culture, were in use in all periods up to the historic period. (Suggs, 1961:92)
No octopus-lure sinkers were found in the Hane valley though one was found inland on the north side of the island. It was a well-finished one of coffee-bean type (MUH-399) and was similar to the sinkers found in Hawaii.

**TABLE XV**

**MISCELLANEOUS ARTIFACTS, INLAND HANE**

<table>
<thead>
<tr>
<th>Artifact</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coral files</td>
<td>9</td>
</tr>
<tr>
<td>Grinding stone</td>
<td>1 (fragment)</td>
</tr>
<tr>
<td>Worked P.S.</td>
<td>6</td>
</tr>
<tr>
<td>Core</td>
<td>3</td>
</tr>
<tr>
<td>Worked cassis</td>
<td>3</td>
</tr>
<tr>
<td>Hammer stone</td>
<td>1</td>
</tr>
<tr>
<td>Sling stone</td>
<td>1</td>
</tr>
<tr>
<td>Worked flake</td>
<td>1</td>
</tr>
</tbody>
</table>

Miscellaneous artifacts:

In the coastal sites, coral files are usually associated with the working of pearlshell and sea urchin files with bone; however, it is quite possible that coral files were also used for working weed and they may have served in this capacity in inland Hane. (This does not exclude their use for working shell.)

Five of the files were flat triangular ones (mostly fragments) ranging in length from 32 mm. to 102 mm.; one was an elongated rectangular file 101 mm. long with a diamond shaped cross-section.

A historical typology of coral files does not seem particularly valid. In excavation, particular forms have not been found to be limited to stratigraphic or cultural layers of a site. Sugg's contention that
As the present study demonstrates, they not only have a genuine value, equal to that of fishhooks, but the chronological placement of sites in the Marquesas, but are also more reliable for seriations because they are more numerous. (Suggs, 1961:118)

is not acceptable in reasoning nor in fact. The only significant remark that can presently be made about coral files in relation to their chronological placement is that they were preceded by sea urchin files. Since coral files are not found in West Polynesia, it can be assumed that they were a local development in the Marquesas dating back an unknown number of years to sometime after the first settlement. In excavation it was also noticed that the earlier sea urchin files were associated with worked bone (as in the Hawaii sites) and coral files with shell. No sea urchin files were found inland.

All of the worked pearlshell specimens were incomplete and in poor physical condition due to the tendency of shell—and especially pearlshell—to flake and decay in the moist acid soil. Originally, these artifacts were probably coconut graters or scrapers.

The two cassis fragments from Hane valley were the heavy lip sections, but again the condition of the shell was such that the outside surface had deteriorated. MUH-429 may have been a blank for a chisel or an ornament and MUH-322 perhaps a finished chisel.

In Hane village a symmetrically shaped, coarse-textured stone, but with a smooth surface, was found on the road. It may have been a sling stone. Its size was 83 mm. by 66 mm.

The remaining miscellaneous artifacts—a small piece of a grinding stone, three basalt cores, a hammer stone and a worked flake—are rather self explanatory and not particularly significant except in their scarcity.
Inland Artifact Distribution:

The distribution of artifacts may be discussed in terms of general area such as valley, of the local land divisions within the valley, or in terms of individual sites. Tables XVI and XVII show this distribution. Hokatu is the adjoining valley to the east of Hane, and the other terms are Marquesan names for lands in the Hane valley.

Of the 350 artifacts, 164, or a bit over 50 per cent, are localized to the land on which they were found. Out of this number, 68 artifacts can be further associated with one of 33 sites. The other 167 artifacts are associated only with a valley area. Most of these were collected during the first expedition to Uahuka in 1965 before any systematic field work had gotten under way in Hane valley.

There seems to be no direct relationship between land size, the number of sites, and the frequency of artifacts. Hatueki was the one exception. It was the largest land, had the most sites (35) and also provided the most artifacts (46). But at another extreme, there were four medium-to-small lands (Tevioka'i, Paopiu, Vaia'o'ihi and Ha'akua) with two to four sites and only one, or no artifacts at all; and at the same time the land Puikau had only two sites but 21 artifacts. Haviki was second in the total number of artifacts, but here the figures are known to be misleading because a fair number of artifacts were found there in 1965.

In terms of general areas, the heaviest concentration of artifacts was on the central, adjoining lands of Havaiki, Hatueki and Puikau. As may be noted on the map, this rather extensive area (now
### TABLE XVI

ARTIFACTS FROM INLAND SITES, HANE

<table>
<thead>
<tr>
<th>Adze</th>
<th>Adze bl.</th>
<th>frag.</th>
<th>Penu</th>
<th>I'i Sink</th>
<th>C. file</th>
<th>Misc.</th>
<th>T</th>
</tr>
</thead>
<tbody>
<tr>
<td>Po</td>
<td>33</td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Po</td>
<td>22</td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td>cassis (322) 2</td>
</tr>
<tr>
<td>Po</td>
<td>24</td>
<td></td>
<td>1(314)</td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Po</td>
<td>26</td>
<td>1(319)</td>
<td>1</td>
<td>2</td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Ta</td>
<td>5</td>
<td>1(367)</td>
<td>1</td>
<td>2</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Ta</td>
<td>2</td>
<td></td>
<td>1(384)</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Ta</td>
<td>10</td>
<td></td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Ta</td>
<td>12</td>
<td>1(369)</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Vah</td>
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<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>VA</td>
<td>1A</td>
<td>2(364-5)</td>
<td></td>
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<td>1</td>
</tr>
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<td>Va</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Va</td>
<td>9</td>
<td></td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Va</td>
<td>15</td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>Pa</td>
<td>3</td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Te</td>
<td>1</td>
<td></td>
<td>1(366)</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Te</td>
<td>3</td>
<td></td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Hav</td>
<td>2</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Hav</td>
<td>18</td>
<td></td>
<td>1(397)</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Hat</td>
<td>6</td>
<td>1(242)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1+</td>
</tr>
<tr>
<td>Hat</td>
<td>13</td>
<td></td>
<td>1(423)</td>
<td></td>
<td>1(425)</td>
<td></td>
<td>1(261) 6</td>
</tr>
<tr>
<td>Hat</td>
<td>23</td>
<td></td>
<td>3 flakes</td>
<td></td>
<td></td>
<td></td>
<td>iron pot 1</td>
</tr>
<tr>
<td>Hat</td>
<td>29</td>
<td></td>
<td>1(308)</td>
<td></td>
<td>1(307)</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Hat</td>
<td>30</td>
<td>1(254)</td>
<td>1(253)</td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Pu</td>
<td>1</td>
<td></td>
<td>1</td>
<td></td>
<td>1(350)</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Ou</td>
<td>2</td>
<td></td>
<td>1(349)</td>
<td></td>
<td>7</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Ke</td>
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<td>1(278)</td>
<td>1(277)</td>
<td>6</td>
<td>1(279)</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
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| 6 | 5+ | 12 | 6 | 31 | 4 | 3 | 7 | 74 |

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planted in coconuts), is situated towards the lower end of the valley. Most of the artifacts found here were adzes (four complete and the rest blanks and fragments) and cowry shell scrapers. On lands to the west, artifacts were fairly numerous, but to the east on land Kohau, considering its area and the number of sites, very few were found. Yet very few, or no artifacts at all, were collected on Kohau in 1965. Elsewhere I have postulated that this ridge was the last to be occupied in Hane valley; the scarcity of artifacts could then be partially accounted for by the later and shorter term of settlement.

Association of artifacts with site types: When surveying the inland sites, I made a thorough surface search for artifacts but not to the extent of further disturbing or destroying the sites.* It was soon noticed that some sites were more likely to produce artifacts than were other sites. These more productive sites were the specialized sites such as the me'ae and the paepae with square and/or circular pits.

To better illustrate this artifact-site association, two tables containing the same information but arranged differently have been compiled. In Table XVI the sites have been arranged according to land and site number; in Table XVIII the sites have been classified according to type.

The cowry shell scraper is the most commonly found artifact on the inland sites and, in turn, it is most likely to be found on the

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*This is mentioned because several years ago a couple of tourists landed in Hane, lived there for some time, and according to local sources ransacked many of the sites. This would in part explain why so many of the sites are now destroyed.
paepae with circular pits and on me'ae. This rather high correlation is observable in both the total number of scrapers and the percentage of these two types of sites having this implement. Except for the Kel mehe on top of a ridge, the sites having shell scrapers were in the valley, usually near the river and therefore often associated with agricultural terraces as well. Ordinary house sites rarely had cowry shell scrapers. This is an interesting distribution and would suggest that the use of these scrapers, theoretically a simple household item, was limited to the more specialized sites.

Adzes, adze fragments and adze blanks were the next most frequently found artifacts on individual sites. Most often they were found on the ordinary house sites, though the actual ratio of house sites with adzes to the total number of house sites was quite small. Paepae with square pits and the miscellaneous ceremonial sites were the next most likely places.

Five of the six complete adzes found on sites were of the koma type. A cache of two small koma adzes was found between some pavement stones on the Vaiapa 1A paepae (with square pit). Another one was discovered beneath the corner stone of Tanahia 12, an unclassified site. In general, it seems that the koma adze, supposedly a later type, was fairly well distributed over the entire area surveyed in Hane valley.

Six of the seven pounders found inland were recovered from individual sites. A broken pounder was found on three of the five paepae with a square pit. A complete pounder (MUH-290) was retrieved from within the front face of Tanea 8, a large raised paepae probably
associated to the agricultural terraces near by. The remaining two pounders came from a house site (Tanahia 2) and from a paepae with circular pits (Puikau 2).

Not too much can be interpreted from this distribution of pounders due to the small number and the probable earlier removal from other sites. However, the presence of the broken pounders on the paepae with square pits—a non-habitation site—is rather puzzling. Ordinary house sites, or the larger house sites with circular pits would have seemed to have been a more likely place since they are more directly related to agriculture and to the preparation of food.

The fourteen remaining artifacts (sinkers, coral files, and miscellaneous ones) directly associated with sites are not sufficient to note reliably any particular tendencies or concentration centers other than the fact that only three of these specimens were found on the ordinary house sites—the rest from me'a'e, ceremonial and specialized sites.

A coral file and piece of worked pearlshell was found on the site furthest inland, the me'a'e Taaoa 5 built on a ridge, which would indicate what would have been expected: that contact of some sort took place with the coast.

The two part-European items found inland were the handle portion of a small whaler's iron pot and a 10 centime, Napoleon III French coin dated 1853. The former was found within a few meters of Hatueki 23, a raised paepae with circular pits. The pot could date back to the 1790's when the first whalers stopped at the Marquesas, but of course there is no conclusive evidence that the pot and site are contemporaneous.
In the Society Islands similar pots were used up to recent times to boil pig food. The coin was found directly on the site Kohau 19 at the eastern extreme of the area surveyed, and in excavation a nail was recovered 3-5 cm. below the surface on Kohau 10, a habitation site. Together they would suggest that this Kohau ridge was indeed a later settlement area.

In conclusion, it may be said again that house sites were not the most likely place to find artifacts. Secondly, in searching for artifacts, often the best place to look was in between the pavement stones, in the paepae face, and in the outer wall, if the site had one. For example, on Keetupu 1 (me'ae) the six cowry scrapers found all came from between the stones in the outer terrace wall. The four pounders (MUH-280, -290, -308 and -349) were discovered near the base of the paepae face, but inside the wall and the pounder head (MUH-314) between the pavement stones. Mention has already been made of the adzes also found beneath the pavement and the other beneath the corner stone of the site. It is possible that shells and small adzes could slip down between the crevices, but the large pounders (three base sections and one complete) and the adze must have been deliberately placed in the spot where they were found.

A comparison of the inland and coastal Hane artifacts:

Artifacts reflect the activities of their makers and users. When occurring in sufficient numbers they may be used as an aid in reconstructing certain aspects of the culture and in forming a relative chronology. Here a comparison between the inland and coastal Hane artifacts is
presented to bring into focus a number of additional points regarding the inland settlement that would not be as apparent if either group of artifacts was considered alone. The main points to be covered are: the number and range in artifacts and suggested reasons for the differences; the association of artifacts with sites; and the relation between the coastal and inland Hane settlement. Table XVIII shows the artifacts recorded from MUH (primarily Hane valley), and MUHI, as well as from Hivaoa and Ha'atuatua, Nukuhiva. The latter two collections will be discussed in the following section.

On Uahuka, during the two field seasons, a total of 3402 artifacts were recovered from the MUHI coastal site; 900 or 26 per cent of these were collected from the surface in the general area of the sand dune, and the rest were from the excavations. The surface area excavated was about 145 meters square; and although this may not seem very large, it actually represents a considerable volume since some pits were dug to a depth of two meters. In contrast, over an extensive area inland, only 350 artifacts were collected.

Not only the number, but the variety of artifacts was much greater on the coast than inland. Three main reasons can be suggested for this difference. One centers around the factor of time. Within a relatively small, confined area at the MUHI site there is a tremendous time depth and a clear cultural stratigraphy. The lowest levels were dated by radiocarbon to A.D. 850 ± 100 and A.D. 1110 ± 110 (Sinoto and Kellum 1965:35). The artifacts, therefore, cover a time span of approximately 1000 years. No extensive excavation was done on the
inland sites so it is not known if there is a vertical time depth. However, the inland surface sites alone are not thought to date back 10,000 years. I will return to this point later.

A second reason for the difference in the quantity and range of artifacts is the difference in orientation towards subsistence. Third, at the coastal site the dry sand, for the most part undisturbed by roots and vegetation, is an excellent medium for the preservation of shell and bone. Even if artifacts of these materials did occur inland, they would have rapidly deteriorated in the damp, acid soil.

The two main categories of artifacts absent from the inland area and present on the coast were those associated with fishing and those associated with personal adornment (ornaments and tattooing implements). Unlike fishing equipment, the latter, which must have occurred, remain to be found if they have not already disintegrated.

Adzes or adze fragments can usually be found wherever there originally was a settlement, and they often serve as a good historical marker. Inland, they represented 77 percent of the artifact collection, on the coast only 9 percent. However, in actual numbers the difference was not so great: inland - 271, coast - 309, and this difference was primarily in terms of complete adzes. (See Table SVIII.) Although a thorough study has not yet been made of these MUH1 adzes, a few preliminary remarks can be made.

A striking feature of the coastal adzes was the predominate use of a dike stone (oligoclase andesite). This in turn greatly restricted the form of the adze since this material tended to break naturally into fairly thin slabs. Sometimes just a little retouching along the sides
and the adding of a bevel was all that was necessary to make an adze.
At the MUH1 site these adzes were found only in the lower levels, and therefore date from an early period. A special effort was made to find similar adzes inland, but only one—and this a blank—was found. This would suggest that when the coastal area was inhabited, the inland area was not, or that these adzes were associated with a particular activity or social group which did not exist inland.

The Hatiheu, an easily recognized adze type (untanged, oval to semi-oval cross-section, and overall polishing), is known from other studies to have been an earlier form in the Marquesas (Suggs 1961:110). A small fragment of a Hatihou adze was found inland, and in the coastal excavations about eight were found. One was associated with the lowest cultural layer (Level VI) in Area B, and others from below the Lower Paepae (Level IV) in Area A.* The carbon date for Level V in Area B is A.D. 850, and Y. Sinoto, on the basis of the cultural assemblages, relates this level with Levels IV, V, and VI in Area A (Sinoto and Kellum 1965:36) though a carbon date places this lowest level in Area A as slightly later. The fact remains, however, that the Hatiheu adze does represent an early type and the question now is how long did it remain in use? None was found in the upper levels of Area B. The latest specimens were from Level IV in Area B and from Level II in Area A. These two levels date back to about the same period (A.D. 1100) with Level II in Area A perhaps being slightly earlier. Therefore,

*The MUH1 site is divided by the government road. Area A refers to the section on the seaside, and Area B to the section on the mountain side.
to conclude, the Hatiheu adze, based on its limited occurrence in one
stratified dated site, can be said to have lived a short life, this
being approximately from A.D. 850 to 1000. Regarding the difference
between its inland and coastal distribution, the same conclusions apply
to both the Hatiheu and the dike stone adzes.

Koma adzes, the predominate type inland, were also found on
the coast. Here, however, there was quite a definite break in their
stratigraphic distribution. In the lower levels of Area B (Level V and
VI) adzes number 133 (including fragments and blanks) out of which only
11 or 7.6 percent had a triangular, of sub-triangular cross-section, or,
in other words, were koma adzes. Level IV was a meter thick layer of
sand, sterile except for human burials. In the Upper Levels (I-III)
fifteen adzes were found, all of which were triangular or sub-triangular
in cross-section (Sinoto, personal communication). If the carbon date
of A.D. 1600 for Level III is correct, it implies that it was not until
about this time that the koma adze came into extensive use. This is
very interesting because it would also suggest that the inland settle­
ment also dates back to the same period.

One final comment in regard to the adzes is that the grooved
grinding stone was not found on the coast (MUH1). A possibility is
that the grooved grinding stone was used only for koma adzes which have
narrow blades.

Another interesting question is raised by the presence of
pounders from only the Upper Levels of MUH1. Offhand, it might be
thought that people living on the coast who oriented their activities
towards the sea did not also engage in growing taro or breadfruit (assuming that these pounders were for food preparation and not for medicine). But the fact that these pounders do occur would suggest that either this hypothesis is not so or that the coastal people arranged a system of exchange with people who did grow taro and breadfruit.

The six pounders from MUH1 are from the same level which has been dated A.D. 1600—modern. Does this mean that pounders did not come into use until this rather late period? In general appearance, they are all of rather undefined form and do not resemble the inland pounders which are more or less of the 'typical' Marquesan form. This could be interpreted to suggest that the pounders from the two areas are not contemporaneous, the less developed coastal ones being earlier. If this is so, by corollary, it would seem to imply that the large-scale use and preservation of breadfruit did not take place until rather late.

Directly related to the use of breadfruit and taro is the occurrence of cowry and purpura shell scrapers. Three unfinished purpura scrapers were found in the lower levels at MUH1. By 'unfinished' it is meant that a perforation had not been made, although a section of the shell had been considerably ground down. However, it is possible that these were never intended for scrapers. Turbo shells were also found in a similar condition, yet this species of shell could never have been used for a scraper because of the quality of the shell and its tendency to flake. Both the purpura and turbo shells may have instead served as abrading tools.
Three humpback cowries, the species used for scrapers, were found in the upper levels and on the surface. The inner whorl had been removed and a small perforation made at one end. None had a cutting edge. The question is whether these were eventually intended for use as scrapers or as lures for octopus. (These six shell artifacts were recovered from the bags of refuse material; therefore, they are not recorded on the MUHl artifact list prepared earlier.)

In summary, it may be said that there is no conclusive evidence that cowry or purpura shell scrapers were in use at the MUHl site.

Returning again to the differential distribution of artifacts inland and on the coast, the point was made earlier that inland artifacts were more often associated with the specialized house sites, me'a'e, or ceremonial sites. Even though the number of ordinary house sites was by far the greatest, only a few artifacts were found on them. Since this is the case, could the pavements uncovered in excavation at MUHl have been part of a ceremonial or special site rather than of simple house terraces? The large number and assortment of artifacts and the concentrated midden suggest the site may have been a combination working-feasting area. Such places are reported to have existed.

Apropos is the following passage from the Crook manuscript which applies rather well to the Hane site:

All men of the tabbu general class have houses for eating separately from the women. Any family, however poor, that goes to fish, or for any other purpose, at an uninhabited place, immediately erects a tabbu house which no women must enter. In places of stated residence, the tabbu house is usually situated upon a raised pavement made of large stones, the bounds of which cannot be passed by women; nor, even if it
belongs to any person of a superior class, by men of the general tabbu class. To these houses, the men retire, previous to a journey or hostile excursion, or when at work upon their weapons, ornaments, etc. . . . The houses appropriate for this purpose are commonly near a mari /me'ae/? or repository of corpses; and their boundaries marked by a string . . . (Crook 1797:cxxvi)

If the three main occupation levels of MUH1 did indeed represent tapu eating houses and workshops reserved for men, where did the women live? There would not have been much other choice than inland, but just how far inland is not known since no sites thought to be this early have yet been found.

The possibility that the Hane site may have been for the tapu class is further substantiated by the relatively large amounts of turtle bone (both worked and unworked) found in excavation. In the Marquesas, turtle was a food reserved for the tapu class.

Handy and Linton have described what may be a similar site which was a sacred place for fishermen—sometimes called a mahia. Every community had one of these and it was built near the shore. It consisted of a sleeping house for the fishermen, a cook house, canoe sheds, and a house for the nets, and another for the shrine (Handy 1923:164). Linton adds:

The Tuhuna who directed the fishing are said to have lived continuously within the sacred place but the other men of the tribe remained there only when actually engaged in fishing. At such times they slept within the precincts and had their food brought to them. The places were tapu to women at all times, but in less degree than the me'ae. (Linton 1925:41)

Both of these accounts help to relate the Hane coastal site with the inland settlement by suggesting that the coastal sites such as these were not the ordinary domestic dwelling sites, a possibility
which, therefore, would account for the absence of a collection of artifacts fully representing the range of daily activities. The site—at least at a later stage—was not self-sufficient. The preparation of breadfruit and taro may have been the work of women and probably was carried on elsewhere than on this site that was tapu to them.

Many questions remain unanswered. Two of the essential ones are the approximate date of the inland settlement and how this settlement was related to the coastal one. Hane, was inhabited by a single tribe so there was probably no real barrier between the coastal and inland settlements other than a ceremonial one. (This may not hold for other Marquesan valleys inhabited by several tribes.) On the basis of the koma adzes and C14 dates, it was suggested that inland settlement may date back to about A.D. 1600. The movement inland may have taken place gradually over the centuries with the habitations moving progressively further inland, until at a later period all the settlements were in the valleys. Also, by this time, the population had become relatively large; warfare had become more frequent; and the people felt more secure far from the shore.

In Hane, the present village is located where these earlier sites might once have existed. Excavations could possibly help to solve the problem.

A comparative study of artifacts from four localities:

Table XVIII has been compiled to illustrate the range, frequency and relative percentages of artifact types from two valley areas and two coastal sites on three islands in the Marquesas. These areas are
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*Percentage of total collection.
MUH-general (Hane and Hokatu valleys), MH-general (primarily Atuona valley, Hivaoa though in part the coast), MUH1 (excavated sand dune site in Ha'atuatua, Nukuhiva). All the artifacts listed were collected by the Bishop Museum in 1963, 1964, and 1965.

In spite of the many inherent weaknesses of a statistical comparison of the artifacts from these four localities—the small number of sites, their unequal area, the great difference in size of the collections, the factors of time, and the variability in the sample (the Ha'atuatua site had been previously worked by Suggs, so the Bishop Museum collection is biased)—some rather interesting tendencies may be noted.

The clearest difference is between the inland and coastal collections and particularly between the surface and excavation ones. Though the inland collections represent a considerably larger area, they are smaller and less varied. The reasons for this phenomena have already been discussed.

Among adzes, the main distributional difference was between inland and coast regions but within these two localities the percentages were remarkably close (Inland: 77% and 74%, Coast: 9.0% and 9.2%). The percentage of blanks to the total number of adzes ranged from 31 to 40% in the four collections, with the two lower values being for the coastal sites. No complete adzes were found at Ha'atuatua, though a high number occurred at MUH1, creating a different ratio. The percentage of adze fragments and chips was also close for the two inland areas (51% and 49%).
Possible reasons for the scarcity of pounders on a coastal site have already been discussed, so that their total absence in Ha'atuatua is not surprising. (Suggs recorded three pestles from the upper levels or Developmental Period and one 'opu pounder from an earlier level which he claims is intrusive. Suggs 1961:100) Rather it is their presence at the MUHl site which is more surprising—which also has already been discussed. Not enough pounders were found inland to permit any generalizations.

Just as pounders are not associated with a coastal site, neither are cowry shell scrapers. Nor were any found in Hivaoa, although in Hane they comprised 9.7 percent of the artifact collection. However, this difference is not considered very significant at the present time for it is felt that a more thorough search of the Atuona sites would turn up a substantial number of these domestic items.

The second most notable difference (after adzes) between the inland and coastal sites lies in the distribution of fishhooks. Comparing the two coastal sites, it can be seen that the MUHl fishhook collection is over seven times greater than that from Ha'atuatua, yet the proportionate difference in one-piece and trolling hooks is not so considerable. (See Table SVIII.) The Ha'atuatua hooks as a whole represented a lesser percentage of the total collection. Within the four stages of one-piece hooks, the percentage of blanks was the closest (31.2 percent and 28.3 percent). This was also true for the adze blanks. Perhaps it is only coincidental, but at MUHl and MN1 the proportion of adze blanks to total adzes, and the proportion of fishhook blanks to the total one-piece fishhooks were confined within
a range of 28-32 percent. It would be of interest to compare the frequency of blanks to finished and to broken specimens at other similar sites to see if an actual direct and predictable relationship does exist.

Ornaments were rather scarce at Ha'atuatua as compared to those at Hane. This may be indicative of the type or function of the representative sites, of their chronological placement, of the popularity of ornaments, or due to the fact that Suggs had already collected about 140.

The remaining main difference to be mentioned between the two coastal sites is the large percentage of coral files at Ha'atuatua (numerically more at Hane, but proportionately less) which is somewhat counteracted at MUHI by the large quantities and proportion of shell and bone remnants.

One thing this comparative study shows—and it may already be known—is that a greater range of artifacts can be expected from the excavation of a relatively small, confined coastal site than from a surface search over an extensive area in the valley.

It also shows that in localized collections there may exist a predictable ratio of classes of artifacts. This would in turn mean that the chances of breaking an adze or a fishhook and the rate at which new ones are made remained fairly constant.

If further similar statistical comparisons with other localities would show that the four used here represented the normal, then the extent to which others would deviate from this normal would reflect the local differentiation of this settlement or locality.
At one time the settlements on Uahuka were probably scattered around the periphery of the island either along the coast or inland in all the areas that were favorable for human habitation. Now the population has dwindled and large sections of the island are dry and denuded of vegetation so that the 350 inhabitants are grouped into the three villages of Hokatu, Hane, and Vaipae'e on the south coast.

The picturesque setting of Hane village is at the head of a small bay, bordered by a high sand dune, and the settlement extends 700 meters inland where it joins the zone of earlier settlement. Either side is bordered by a low mountain ridge that descends directly into the sea. Level land is largely confined to the central section of the valley near the two rivers which join a few hundred meters from the coast. This is the location of the present village.

Hane is a village of 118-120 inhabitants distributed in 23 households (Hokatu has 70 inhabitants and 11 households; Vaipae'e 157 inhabitants and 23 households). Most of the houses are built near one of the rivers or along the central road that extends the length of the village. See Figure 21. The dominant structures are a public school completed within the last five years for the children of Hane (55 pupils) and Hokatu (23 pupils), a government dispensary serving the three villages, and a very large Catholic church constructed in 1961. There are no commercial bakers nor stores; when flour is
Fig. 21. Diagram of Hane Village
available, bread is baked in the other two villages. The radio station is located in the larger village of Vaipae.

While the residences are primarily inland, the copra drying racks and copra sheds are along the coast where there is more exposure to the sun and wind and easier accessibility to the trading schooners. There are also six canoe or boat houses.

Plan and construction of the houses: Typical of most of the present-day Marquesan villages are the early colonial style of home and houses—either wooden or bamboo—built on the old stone paepae or house foundations. Of the former there are none, and of the latter there is but one (#17) in Hane. Most of the houses are of fairly recent construction. The earliest seems to be #15, a wooden house with a cement foundation, built in 1941. There are only six houses built with local materials (wood, bamboo and coconut fronds), these being No. 8, 13, 14, 17, 18, and 19, and one of these has a cement foundation and another a corrugated iron roof. The more typical type of construction for the sleeping house in Hane village is a stone and cement foundation, a cement or pressed-board walls, and a corrugated iron roof. The eating and cooking houses which are always separate from the main house (though sometimes these two may be combined into one), are built on the ground (no pavement or platform), and have lattice walls of small poles and a coconut frond or corrugated iron roof. Several houses have in addition a large bread oven.

The coastal sheds and boat houses are very skilfully and neatly made from small wooden poles with a roof of coconut fronds or corrugated iron.
Families

In the 23 households, there are 12 families represented, although all of these are related by blood or marriage to one or more of three families: Fournier, Kave'e and Va'atete. The original Fournier (a French gendarme) and his Marquesan wife were outsiders; the Va'atete are from Vaipaee; only the Kave'e, the eldest being a man in his fifties, claims to have both parents from Hane. How much further this can be traced back was not checked. The point of interest here is the correspondence between the early historical account of Hane valley being tapu (therefore having no inhabitants) and the absence of "feia tumu," or families closely tied to a certain residence area over a long period of time.

On the basis of the available information, the Kave'e family certainly comes closest to being a founding family in Hane. At a short distance from the Hatu Kave'e home (he is the present chief of the village) there is the stone foundation of a large residential site built earlier during the post-European period. It is also of interest to note that the church located in the central part of the village was constructed on Kave'e land. In eastern Polynesia and in the Tuamotus, the sites given for churches were donated by one of the old-time original families of the area. (P. Ottino, personal communication.)

In the administrative yearbooks the earliest references to Fournier were in 1849, "Amant Fournier, Capitaine de Vaisseau in Taiohae Nukuiva," and in 1868 a promotion of "Etang Fournier, Sous commissaire de la Marine." (Annuaire de Tahiti pour 1892:115) Later
references show that a Fournier was gendarme on Tahuata in 1892, on Hivaoa in 1895, and on Fatuhiva in 1902. It was probably during a period between the last two posts that he was on Uahuka. At this time, land must have been easily and inexpensively available, for much of the Hane valley is now in Fournier hands. He had eight children four of which presently reside in Hane, each with his own home in the village, addition to nine grandchildren and one son-in-law.

The Va'atete family is also represented in Vaipaee from where comes Tutai Va'atete, the father of the three older generation Va'atete members in Hane. One daughter is married to Hatu Kave'e and four of their children have established households in Hane. The other daughter is married to Kaihei Surpice, a Vaipaee man whose grandfather was a French seaman. Two of their sons have homes in the village. The brother was first married to a Vaipaee woman and now to a part-Chinese woman from Tahiti.

In contrast to the period when the Marquesas were undergoing such a rapid rate of depopulation, the death rate is now low and the families tend to be large. (Per year, there are one to two deaths for 18-20 births--personal communication from the Hane priest.) Hatu Kave'e has had fifteen children with his present wife, thirteen of which are now living, and four by a previous wife. Matai Ro'otuahine has thirteen children. There are three households composed of over ten individuals: #4 has 12, #6 has also 12, and #16 has 11. Two elderly Fournier men live alone—one is afflicted with elephantiasis and leprosy; the other is separated from his wife. The remaining households range from two to eight residents. The overall average is 5.3.
Households: It is necessary for purposes of clarification to present a number of schematic plans to show the relationships that exist between the families and households. The complete household census is given in the appendix; in the diagrams only the heads of households are indicated and the number refers to the household number. The names of males are capitalized.

Diagram I - Kave'e Family (Figure 22): The relationships here are simple and self explanatory. Taua Pukeani is seen to be a Va'atete.

Diagram II - Va'atete Family (Figure 23): The union of Etienne and Teupo is a bit unclear but it may represent a case of first degree, cross-cousin marriage. According to Teupo, and to two informants in Hane, Tanaoa was only her legal or adopted father. (This practice of registering an adopted child under one's own name is illegal according to French law but consistent with the Polynesian ideology. In the Tuamotu it was not unusual for the children to be asked for before birth (in Tahitian, tamari'i tapa'o) (P. Ottino, personal communication). Hina seems to have been her real mother. A Kaihei in Vaipaee (Kaihei Tuitete?) is said to be her biological father. If Kaihei Surpice were father, then Teupo would be Etienne's half sister.*

In the rest of Eastern Polynesia, a first cousin marriage is considered incestuous and on Rangiroa, in the Tuamotus, unions can only

*Teupo and Etienne now live in Tahiti. When they were questioned on some of the other Hane relationships, Teupo obviously commenced to feel uneasy and hesitant so no direct questions regarding their case were asked.
Fig. 22 and 23. Kinship and household diagram
Kave'e and Va'atete families
occur on the third and fourth levels, though they are still not approved. However, in the Marquesas, according to Handy, only marriage of parallel cousins (the children of a father's brothers or mother's sisters), was tapu; cross-cousin marriage was the most approved "... for social and economic reasons, since it kept the family together as a unit and did not require the distribution of its property" (Handy 1923:68-71).

Diagram III - Fournier Family (Figure 24): Oscar Fournier is separated from Vi'i, a woman originally from Vaipae'e, who now lives with her married daughter, Sophie and son-in-law Mo'I, from Nukuhiva. This is the only case in Hane of a couple living with the spouse's mother. Vi'i was the half sister of Titital, now deceased, who was the first wife of Hatu Kave'e. Teoho's grandfather was Vi'i's mother's brother which would make Vi'i a "Va'atete" through her mother.

The case of Emile and Roti Fournier is very interesting. Roti, now living in Hokatu, was married to Ea. Her brother Emile lives with his son Jean while Emile's wife, Agnes, now lives with Ea, the first husband of Emile's sister. This is an example of alliance of in-laws of the opposite sex, since for Ea, Agnes is the wife of the brother of his first wife or his first wife's brother's wife. This type of union is forbidden in many societies and in Rapa, for instance, was considered very bad (Allan Hanson, 1967) as well as in the Tuamotus, without the informants being able to explain the reason for this repulsion. On the other hand, the union with the spouse of deceased sibling is absolutely admitted and even considered beneficial "in the interest of the children" (P. Ottino, personal communication).
III. Fournier Family.

Fig. 24. Kinship and household diagram
Fournier Family
The successive union of Taua with Koi Fournier and then with the son of his sister Ery is an even more unusual case since Taua (daughter of a man from Raiatea married to a local woman) was first an adopted child of Koi before later becoming the wife of her adopted father. This, too, is forbidden in the rest of Polynesia.

Mauri'i, Taua's sister, lived with Brown, a man of English descent from Tupuai in the Austral Islands, after his first wife, Taipi Va'atete died (See Diagram II).

Diagram IV is an excerpt from Diagram III to illustrate an example of the transmission of names conforming to a general model in Eastern Polynesia. The names of grandparents are seen here to be given to their grandchildren, and generally to the first born:

Kahau—Kahau, Taua—Taua.

Figure 25. Transmission of Names
Residential Groupings

The residential units are grouped into three zones corresponding to the three family groupings. Without further field work, it can not be known whether Household #8 should be regarded as virilocal or uxorilocal. However, the general distribution is clearly apparent and permits some comments.

The Fourniers are spread out from one extreme end of the village to the other. In the northern section of the village, Household #2 consists of Ea and Agnes (a Fournier by marriage) though the land belongs to Ea's first wife, Roti Fournier who is residing on Ea's land in Hokatu.

Households #5 and #6 are those of maternal brothers, Taio and Matai.

The Kave'e and Va'atete households are more tightly grouped. Household #11 has not been included in any of the three residential groupings. It is occupied by Auri'i, now an old man from Raiatea, and a young adopted son from Vaipaee (mother is a Va'atete, father is American). The land belonged to his wife Kahau—now dead—the mother of Taua and Mauri'i. Household #9 (now the residence of Teoho Brown and Eria Pioko'e) is of interest. There is a strong possibility that Brown, Teoho's father lived there uxorilocally with his second wife, Mauri'i. The two cases suggest that Kahau was originally from Hane.

Marriage Pattern: Another interesting phenomenum which may have its origins in the ancient culture of the island is reflected in the marriage pattern. Among the 32 unions possible to reconstruct, ten were between inhabitants of Hane village, eight were between Hane and
Vaipaee, two with Hokatu and twelve with outsiders. Four of these were from the Marquesas, and eight from other islands.

The striking point here is the number of unions occurring with the residents of Vaipaee valley, formerly allied with the Hane valley and thus forming a matrimonial community and the rarity of unions with the people of Hokatu valley, the one time adversaries. Though this fact may have ceased to be conscious, the numerous unions continue to conform to it.

The two cases of alliance with Hokatu were by Fournier girls, a family which has no close traditional ties to the island.

The origin of the two spouses from the Austral Islands can undoubtedly be traced back to the days when Rurutu had her own schooner and made the Marquesas-Tahiti run.

Adoption

In Hane village the relationships between the households developed by the matrimonial alliances are further knitted together by the adoptions—notably between the Kave'e and Va'atete families.

Thirteen households, or 55 per cent, have given away one or more children in adoption, have adopted from the outside, or have at the same time given away some children and adopted others. Fourteen children are involved in these transfers; two have been taken by relatives in Papeete, one is a boy from Vaiapee, and the eleven others are Hane children remaining in Hane.

Following the Polynesian custom, the adoptions generally occur between very close relatives. Among the twelve cases for which there
is sufficient information, four were taken by the mother's mother, one by the mother's father, one by the mother's sister, four by the mother's brother, one by the father's mother's brother and one by the mother's niece. An interesting study could be done on this strange coincidence that in all the reported cases the adopters were maternal relatives to the adopted.

(According to a study done by a Japanese sociologist on Fatuhiva, among 47 cases of adopted children, over 70 per cent were adopted by the maternal kinsmen. His interpretation is, "Maternal preference may result from polyandry, in the past, and reflect matrilineal residence, in the present" (E. Ishikawa 1964:321))

No study was done as to why these adoptions occur. But just by taking note of the cases, it does not seem necessarily related to family size. The first child of Household #13 was taken soon after birth by the husband's uncle or adopted father (#21). On the other hand, Taua Kave'e who had had fifteen children, three of whom still remained in the house, adopted a grandson. Matai Ro'otuahine (#6), the father of thirteen children with only three living away from the family house, had no children out for adoption, but could barely clothe and feed the ones that he had.
Absentees

Movement away from the island home is a present-day phenomenon well marked among the Polynesians. In a village as small as Hane with only 120 inhabitants there were in addition 29 others who in 1965 were residing elsewhere.

TABLE XIX
HANE ABSENTEES, 1965

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<tr>
<td>Total</td>
<td>6</td>
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Papeete was the greatest lure, having attracted eleven girls and give boys of the younger age group. The much higher proportion of females leaving the islands is a general phenomenon in French Polynesia, especially for those under 25 years of age.

The girls in Hivaoa are attending the Catholic girl's boarding school while the boys attend the school in Nukuhiva. (It was quite surprising the degree to which the older generation valued education and regarded it as a necessity for their children or grandchildren.)

The 29 absentees represent nine households: 4 Fournier-Raotuahine, 2 Va'atete-Surpice, and 3 Kave'e-Brown. About half are away for schooling. Most of the others were single individuals when
leaving the island; there is only one young married couple that left the village (Leon Kave'e and Roro Fournier). However, since 1965 two complete households (#21 and #14) have left the island and moved to Tahiti, in addition to Matai and Rea Raotuahine (#6) who left their many children behind, and Toho Surpice who left his wife as well as his young children for an unstated length of time.

Economics

Copra and carvings are the main sources of revenue for the Hane villagers with the two tending to be somewhat exclusive of one another. Families with large productive lands depend primarily upon copra, while the families with less land carve.

The Fournier family is probably the greatest copra producer. They seem to own the most land and four of the eight copra drying racks, and four of the seven copra sheds belong to the Fournier-Ro'otuahine groups. The Ro'otuahines, however, possess little land. One piece which the two brothers jointly own (probably through their mother, a Fournier) they have agreed to operate alternately, but neither one seems to do much with the land. When Tanaoa Va'atete left Uahuka, he put his lands in the hands of Taio Ro'otuahine, much to the dismay of his adopted sons (the Kave'e boys who are also his nephews) who have little land of their own.

The copra is made by small family groups (husband, wife and children) and transported by horseback to the shore where it is spread out to dry on the racks. Trading schooners stop about once every six weeks. The price of copra is subsidized by the government but there
exists a paradoxical element: the further the island is from Tahiti, the metropolitan center of French Polynesia, the lower is the price paid for copra and the higher is the price for imported items.

The Marquesans are renowned in Polynesia for their carvings, with Nukuhiva having traditionally been the island where this art had most developed. (Today, Fatuhiva specializes in tapa, and Uapou in pandanas hats.) With the use of modern tools, the skilled and careful workmanship has greatly deteriorated.

According to one informant carving was introduced into Uahuka about eight or nine years ago by a man from Nukuhiva. He taught one of the Kave'e boys and now there are nine carvers in the village. Some carving is also done in Hokatu, but none in Vaiapaee. Distinction is made between the two forms of carving: one is to "tarai" which is simply to make the form (bowls, lances, paddles, etc.) and the other is to "nanao" which is to add the incised designs, there being a number of typical Marquesan motifs. Hatu Kave'e has been a carver of the first type for thirty some years, wooden saddles being one of his specialties.

The priest in Hane has set up a sort of business with these carvers. A workshop was built near the church and furnished with an electric saw and generator which was purchased with money collected from the villagers. The priest takes orders for particular items and reimburses the carver. The best carvers are Mo'i from Nukuhiva, Hatu and Teiki Kave'e—also Raymond Kave'e (now dead), and Eria Piokoi from Hivaoa. None of the Fournier men carve. Matai Ro'otuahine makes simple
objects such as bowls and stone pounders, but does no decorating. The people rarely use the workshop—they seem to prefer to work alone at home. This sort of individual enterprise in artistic creative work and the small family groups involved in making the copra is in marked contrast to the working group system in Rurutu where all is done by larger groups organized on a more communal basis.

Money earned is primarily spent for houses, household items, food and clothing. Outboard motors are a prestige item. And then there is the money spent for "amusement"—during the 1965 14th of July celebrations in Hane (people had come from the two other villages), 174 liters of wine and 508 65-cl. bottles of beer were consumed representing an expenditure of 44,400 francs or about $500.00.

Subsistence

The Hane villagers appear to be quite dependent upon a number of imported foodstuffs—primarily flour, sugar, milk and canned meat or fish. The staple local foods continue to be breadfruit and fish. Each household has its own ma pit about a meter in diameter for the storage of the breadfruit paste. The trees grow around the house and in the valley. Near a number of houses there are small plots of manioc which is either boiled or prepared into a starch. Auri'i, a Raiatean, seems to be the only person with an attended taro garden; others may have taro but usually it just grows around a water tap that is left open. Few families have vegetable gardens and bananas are not extremely plentiful.
Fish is well liked but it is not always available. The principal method is trolling, or the men still-fish from canoes in the bay or sometimes further out to sea. Outboard motors are not used. As a compensation for their efforts, the fish, when caught, tend to be large. If more than is immediately consumable is brought in, the fish is cut into strips, salted, and dried. Women fish with poles and lines from the rocky shore line and at night, with the light from a gasoline lantern, catch small rock crabs or gather shell fish and octopus.

One of the enchanting sights in Hane is the arrival every morning of a large herd of goats from the adjoining plateau area to the west, and their departure every evening, coming and going on their own accord. They all belong to Auguste Fournier but there are a large number of sub-owners. Kids are kept in pens or tied near the coastal structures, and the nannys milked every morning. This milk is given to babies and children and the nutritional effect it has on the children's teeth from a comparison made with the Hokatu and Vaiapaee children is striking.

In time of need goats are butchered for consumption; wild goats are available in some of the uninhabited valleys. Wild pigs are scarce.
PART III. CONCLUSIONS

CHAPTER VI

PREHISTORIC HANE SETTLEMENT

In a preceding section and in the appendix, the Hane valley sites have been classified and described. Mention has been made of their topographical placement as well as their relative position to other nearby sites. The general physical and cultural settings of the Marquesas have been discussed. Through the incorporation of data from all these sources the final aim is now to reconstruct, as much as is presently possible, the early settlement pattern in the Hane valley.

However, it is emphasized that the scheme presented here is tentative. Unfortunately, there is still too little known about Marquesas sites in general, and the Hane ones in particular. Particularly frustrating is the lack of knowledge concerning time depth, for these structures. Presently, it is assumed that there is very little. (A very small test pit on a site on Poiotona and on Kohau indicated none.)

The procedure here is to present, first of all, some hypotheses based on my own observations so as to clarify and to enlarge upon a number of points which form the basis of the reconstruction, and secondly, to describe the settlement.
a) Inland: The term "inland" as used in this report refers to the surveyed area which commences at about 800 meters from the coast, or at the north end of the present village. Unlike many other Marquesan villages, there are only a few sites that remain visible in the Hane village. The large house platform on the chief's land is probably post-European; some of the smaller and simpler paepae (now largely destroyed) may be earlier. The point is that where the present village is now built, there may have been an earlier settlement which could be tied in with the lower levels at the MUH1 site. As has already been suggested (see section on Artifacts) the change of settlement away from the coast may have taken place gradually and with no physical break between the two. On the basis of artifacts and carbon dates derived from the coastal site, the inland settlement has been provisionally dated to about A.D. 1600.

b) Choice of settlement area: The actual settlement of Hane may have been preceded by temporary habitations along the coast by fishermen. (Level V in Area A, MUH1 consisted primarily of fish and bird bone and represented an occupation of the site prior to the construction of the pavements--Level III and II.)

At a much later period, after the construction of the two pavements, there was an inland settlement as well, brought about by an increase in the population size, the need for a more dependable and greater food supply, and also the desire for better protection from other raiding tribes. It would be reasonable to assume that the better areas were chosen first, though the criteria of desirability may well have changed in time.
c) **Sequence:** This reconstruction of the Hane settlement is based on the premise that all the Hane sites were not built at the same time; therefore, some sites and areas were occupied earlier than others. From this, a number of alternative developments could take place: older sites could be abandoned; new sites could have been built over the older sites; the earlier sites could have remained in use and unchanged while sites in another area were built and put into use; or only certain sites within a confined area may have been re-built.

Here it will be suggested, on the basis of site complexes and construction methods, that there were three main areas of settlement in the Hane valley, each one representing a different chronological period, although some overlapping between the areas can be expected to have taken place. However, by the time of European contact, the earliest may have been abandoned.

d) **Site Complexes:** One means of reconstruction was to attempt to see if a certain range of sites did occur within a certain ecological area, or, in other words, if there did exist site complexes. Handy in his discussion of community structures which was based primarily on traditional accounts, distinguishes between the private establishment and the chief's establishment.

Private establishments consisted of a large sleeping house on a stone platform, a cook house near by, a sacred house for old men, a house for storing food, and in the near vicinity a sacred place.

The chief's establishment was the community center. It included his sleeping house, which was larger and more elaborate than most private dwellings and was built on a stone platform;
his cook house, a storage house, the dwellings of his attendants on stone platforms; a paved dance area . . . ovens; a temple . . . In secluded and usually elevated locations there were other sacred places (me'a'e) which also belonged to the chief and served for tribal ceremonial and burial . . . (Handy 1925:43)

In addition there was a warrior's house near the chief's house, a raised structure with a wooden floor for tapu men and also served as a workshop for home industries, a house for tattooing, and the sacred place for the fishermen.

Not all of these sites could be found, or identified as such, in Hane valley. However, based on the range and distribution of sites within a certain area, it is thought that there were three main settlement areas.

e) Tohua: In the reconstruction of the Hane settlement one problem is posed by the existence of three tohua in the valley. As it has already been mentioned, the tohua is the largest of Marquesan structures and it served as a sort of community center and belonged to the chief. According to Linton, "Each tribe is said to have possessed at least one tohua and valleys having more than one tribe there was one or more main tohua" (Linton 1925:24). Traditionally Hane is said to have had but one tribe—the Tititea; so why are there three tohua?

There are other questions that can be asked but cannot presently be answered. If a new tohua was constructed by the same tribe, did the earlier one go out of use, or could two tohua operate simultaneously in the same valley? What is the chronological sequence of the Hane tohua? Since the community life revolved around the tohua,
more could be interpreted about the settlement if more were known about how it was related to the socio-political organization. For example, a powerful chief might construct a new tohua for purposes of prestige.

f) Sequence of constructional changes: Related to the question of the relative age of these three tohua, and the other sites in general, is the problem of determining the order in which changes took place, there being little doubt that such change did occur. The usual evolutionary theory of change from small to large, simple to complex, etc. may be only partially applicable to the Marquesas. What I suggest happened is that sometime before European in the 18th Century contact or just afterwards, the Marquesan culture had reached its peak and then went into a decline which was greatly spurred on by the prolonged effects of European contact. Accompanying this was the population decline. Therefore, in regard to site construction, the trend probably was from a rather simple to a more elaborate form, followed by a reversal to a simpler, though different, form. This is what happened to the house sites; it could also apply to the tohua. But judgments of what constitutes a 'simpler form' for these sites are more difficult to make—all are megalithic structures.

g) Subsistence: Hane valley seems to have been divided into two main ecological and topographic zones in regard to food resources. In the lower or southern end of the valley, taro terraces are more prevalent, and ma'pits are few; further up the valley there are still a number of taro terraces with a very great increase in the number of
ma pits. If only one-half of these pits were filled half way it would represent a tremendous amount of food in storage because these pits are very large. It would suggest that there had been a great increase in the population, that there was more chiefly control, and that breadfruit had become the staple food.

h) Size of settlement: The number of house sites in round figures was about 100. If all were occupied simultaneously, it would represent a population—at the minimum—of 300 to 350, but more likely between 500 and 700. Handy quotes Garcia (a priest in Nukuhiwa, 1843) as saying that "as many as five or six related families lived in a single establishment" (Handy 1923:61). This would mean from 10-15 people which would hardly seem possible in what seemed like relatively small house sites, as far as sleeping area is concerned, in the Hane valley. (The present average household size in Hane is 5.) Food would have to have been much more plentiful than it is now to support even 300 people.

However, since all these sites were probably not in use at the same time, the population at its peak may not have surpassed 400 to 500. In earlier times the settlement was small, perhaps only 25 to 30 households, with a minimum of three to five people per household.

Once the population exceeded the subsistence resources available in the valley, people may have moved out, either for marriage or for resettlement in another valley.

i) History: Hane seems to be a recent place name. In 1841 and in 1867 Lawson refers to the valley of the Tititea tribe as Hanaina (see
Appendix A); in 1891 the settlement was referred to Ananai (Petit 1891:230) and on a later map the bay was called Hananai (N.I.D. 1945: 293). This would in part account for why specific references to the Hane bay and valley are not to be found.

Lawson in the 1840's and 1860's refers to this bay as the "tapu bay" and he does not include it in his 1867 census of the island. Nor did any of the missionaries stationed on Uahuka in the 1860's ever mention the Tititea tribe or the valley. Therefore, the fact that the bay was tapu would suggest that the valley was not inhabited.

However, at the time of European contact the valley must have been occupied because ships are said to have stopped and "traded in the tapu bay to windward (of Vaipaee)" (Lawson, letter of Dec. 7, 1863) which would contradict the supposition that the valley was not inhabited. Perhaps people from the other settlements went to Hane to trade because the safest anchorage for the ships was in this bay. The first mention of an actual settlement occurred in 1877; at this time a Catholic priest is said to have gathered a grouping of about 30 people in each of the three villages of the island (Delmas 1929:304).

Therefore, there is a period of about thirty years (1830's-40's to 1865-75) during which Hane valley may have been abandoned. No reasons have been found, though there are a number of possibilities. Perhaps the settlement suffered a period of rapid population decline possibly caused by a more extensive contact with Europeans, bringing new diseases, than the other two bays. The remaining people may have decided to move and either were assimilated with the Vaipaee tribes or went to uninhabited areas. Or tapu could have been imposed by the
Nukuhiva invaders and conquerors, however this would have been before Uahuka had had much contact with trading ships. Or the Tititea might have been defeated in a local war and left to seek refuge.

This movement to somewhere else could have been to the central part of the island in the mountainous region. Sites found there, but not mentioned by Lawson, Handy or Linton, are not associated with any tribe. People living in this area had access to the north coast where fishing could be done. The coastal sites seen on that part of the island were small, crude, and not very numerous. (In 1791 Ingraham gave some nails to some Marquesans who came out in canoe to the ship from somewhere along the northwest coast.) An octopus sinker was found near the path that connects the central area with the northern coast. It was of the coffee-bean type, a later form in the Marquesas and similar to the ones found in the Hawaiian Islands.

The three main settlement areas in the Hane valley will now be described (see Figure 26).

1. Polotona and Tanahia: The land Polotona is thought to be the western limit of the inland Hane settlement. Further west across the stream is the land Tukahano (not included in the general survey), an open area at the base of a hill with just a few, small scattered stone walls—perhaps terraces. However, on Polotona which covers a relatively small area there is a large number and range of sites: a tohua, a me'ae, a raised paepae with a square pit, a raised paepae with circular pits (in addition to the circular pits on the tohua), a plain raised paepae, small house sites, enclosures and taro terraces.
Fig. 26. Movement of settlement in Hane Valley
Across the stream to the east on the adjoining land of Tanahia, there are fewer sites although they represent a similar range except for the absence of a tohua and maybe a me'ae. (The Ta 12 site is questionable.) There is evidence of rebuilding on some of the Aanahia sites.

The prevalence of terraces and enclosures and the absence of ma'ae pits (except possibly for a very small one on Tanahia) would suggest that perhaps taro, or other cultivated food plants, was a staple food.

Artifacts—even broken or unfinished adzes were very scarce. However, two complete koma adzes were found on one site, suggesting that this type of adze was in use at the time this area was occupied. Cowry shell scrapers were rather plentiful. A stylized pounder head was found on the paepae with the square pit (Po 24).

There were about 25 house sites and they accounted for 50 and 60 percent of the sites on these two lands. The presence of the tohua and the me'ae would suggest a society stratified at least into the ranks of chief and his immediate family, the priests, and the ordinary people who worked on the construction and in growing food. Warfare at this time may not have been so frequent since there was no site that could possibly be called a warrior's house. On the other hand, the skulls which at one time were present on the Poiotona me'ae may have been those of captives, though they could also have been those of local chiefs and priests (Handy 1923:236).

The time span in which this area was occupied may have been quite long, since some sites have been rebuilt on older foundations.
2. Vaia'oihi, Vaipa, Paupiu, Tevioka'i, and Havaiki:

As the population increased, the settlements expanded and the centers changed. The movement was over to the east on the lands Vaia'oihi, Vaipa, Paupiu, Tevioka'i and later as far over as Havaiki. The greatest range and number of sites was on Vaipa (excluding Havaiki). There was the site with the two raised paepae—one with a square pit, the other with round pits—built inside a large enclosed area (Va 1) may have become the important community center. Not far from it, there were extensive terraces and enclosures, probably for taro. Associated with the terraces is a large raised house paepae with three round pits and one square pit which may have been built at the same time that the terraces were extended.

In the Hane valley there were only two sites which had both square and circular pits on the same paepae, and both of these sites were on the adjoining lands of Vaipa and Paupiu. It probably represents a later site type and served a dual function. Earlier these features occurred on separate sites.

On the first four lands there were 10-15 house sites; and on Havaiki there were 15. Five of the former group were on specialized sites; the total number of house sites there was not as proportionately great as for the lands further west. On Havaiki where there was a smaller range in site types, the proportion of house sites was greater. All of the house sites tended to be slightly larger than those on Poiotona and Tanahia.

This area, low and moist, seems particularly suitable for wet taro growing and the numerous terraces indicate that advantage was
taken of this condition. Many of the sites seem to have been related in one way or another, in this activity.

Artifacts were relatively abundant, but limited to adzes, adze fragments, blanks, and some cowry shell scrapers. A cache of two small koma adzes was found on the paepae with a square pit, and a single koma was found on the surface on Havaiki. Adze fragments and blanks were more numerous on this land. No pounders were recovered.

A number of differences can be noted when comparing this area with the previous one. The construction of the sites seems to have developed to a certain extent, and greater effort was put into the building of house foundations. The raised paepae became higher with that of Va 7 attaining 2.30 meters in height. Cut red tuff was utilized for the first time; cup stones became more prevalent. Specialization is reflected in the occurrence of two petroglyph stones.

In addition, two sites show evidence of having been built over an earlier site or of having been enlarged (Va 1 and Va 8).

When Vaipa and the adjoining area were settled, the tohua and me'ae on Poiotona probably continued to be used. On Havaiki there is a large ceremonial site (Hav 21)—here listed under Unclassified sites—which in a way resembles a tohua, though its plan is slightly different. If it actually were a tohua, the chronological sequence of settlement might have to be revised. The range of sites on this land is rather restrictive there, not being even any taro terraces along the river. Most of the sites are residential. This would suggest that there may have been in the Marquesan settlements a certain area reserved for the special sites and tapu people, and another for the ordinary residences of the non-tapu people.
Hatueki, Ha'akua, Puikau and Taaoa; Kohau:

Hatueki and the ridge above were probably at one time the heaviest settled area in Hane valley. The area is large, and the density of sites is rather high. On the land Hatueki the range of sites is greater than it was on Poioitona, and there is much differentiation among the individual sites. Within a small area of about 150 meters by 150 meters there was a large tohua, a paepae with a square pit, a large raised paepae which may have been a me'ae of the chief's residence, an elongated paepae which was probably a warrior's house, a paepae with circular pits, taro terraces, and a large number of ma'pits. This is the area that best fits Handy's description of a community. On this same land there were 15 house sites (about 50 per cent of the total sites) which tended to be built further down the ridge and over to the east.

On the narrow and steep ridge of Keetupu and Taaoa the concentration of sites in terms of usable land, becomes even greater. There are 25 sites, 15-20 of which are house sites. The ceremonial sites occupy prominent positions on the ridge amongst which there are three me'a'e. The Taaoa 5 me'a'e is the last site on the ridge and the furtherst inland of all the sites surveyed. The house sites are interspersed between the me'a'e and can be considered as belonging to higher class or privileged families. It does not seem likely that the ordinary individual would have lived amongst all these ceremonial sites.

Breadfruit replaced taro as the staple food. On this ridge there are twenty-one breadfruit pits. They occur either isolated or in clusters, and there may have been special sites associated with
them. Taro continued to be grown but on a smaller scale. The Puikau terraces, just above the Hatueki tohua, were the most carefully constructed, though not the largest, and probably were the last main ones to be built.

In construction, the use of cut blocks of tuff becomes more common. The source was probably on Kohau, the adjoining ridge to the east. Petroglyphs were noted on two more sites and two tiki of rather crude form were found when excavating the Taaoa 5 me'ae.

Artifacts were more numerous, and there was a greater variety than elsewhere. Adzes still remained the predominate artifact, and koma the specific type. The other artifacts consisted of shell scrapers—mostly from the Puikau terraces, four pounders, three stone line sinkers, three coral files, and three miscellaneous artifacts.

When this ridge area was in use, the population had probably reached its peak, and the culture its climax. At the time of European contact, the main settlement was undoubtedly in this area and some of the sites were probably rebuilt during this period. (Linton thinks that the Puikau 1 site was reconstructed for gun warfare.) On the Taaoa 5 me'ae a bullet was found partially buried. The socio-political organization probably became more restricted; the range of sites reflect a greater diversity in the culture.

The sites on Kohau ridge are so distinct from sites elsewhere in the valley that it would seem that they were built in a different, probably much later, period. This factor of time associated with the culture change may account for the lack of diversity among these Kohau sites. The land on which they are built is narrow and steep, and the
25 sites extend the entire length of this ridge. There were about 17 house sites and the remaining sites consisted of several small, rather insignificant, terraced areas, one larger more complex site which may partially have served as a work shop, and a relatively larger house site further up the hill which may have been more than just a house site.

The distinguishing feature of these Kohau sites is their method of construction. For the house sites stone terraces and pavements were no longer built; instead, the hill was cut back so as to obtain a sufficiently large level space and the house was outlined with a stone curbing. Some had an adjoining cooking house with fireplaces of post-European form for use with a kettle. One of these fireplaces was excavated and a nail was found a few centimeters below the surface. (On Kohau 19 an 1835 French coin was found.)

Cupstones occurred only on two sites and cut tuff only on one—yet the source of this material, as already mentioned, was on this land. Artifacts were scarce, but of the nine adze fragments, seven were koma. This was an adze type found throughout this inland area. No implements associated with the preparation of food, such as pounders or scrapers were found. However, breadfruit probably remained the main item in the diet for there are three large ma pits on the ridge. Taro might have been cultivated in the lower regions and perhaps sweet potato or dry land taro on the terraces higher up the ridge.

There seems to be but little doubt that the Kohau sites are post-European. Metal tools might even have been used for cutting and shoveling away the hill. The preponderance of resident and agricultural
sites to ceremonial or more specialized sites would seem to indicate that the culture had lost some of its vitality and that the population was on the decline. If the Hane area had been abandoned for a few decades, Kohau may have been the new settlement area. Subsequently, people could have moved back towards the coast.

The inland settlement, as reconstructed here, may be briefly summarized as follows: If the inland (as was defined here) settlement of Hane valley represented three main areas and periods, the western section (Poiotona) is thought to have been the earliest and the eastern section (Kohau) the latest. When only the western section was inhabited, the population was still fairly small and taro may have been the staple food. Breadfruit was also important but the small size of the community did not necessitate the storage of large amounts.

In time the settlement enlarged, first extending to the east and then directly up the ridge to the north. Uru or breadfruit became the main food. The number of households may have increased to somewhere between 40 to 60 and the population from 200 to 400. The culture then reached its climax. The population size may have exceeded what the valley could comfortably support so the tribe split up with one group settling in the adjoining valley of Teponoa. (The Tititea tribe is associated with this valley.) Warfare may have been more common during this period. In addition to what was probably a warrior's house on Hatueki, there is a fort constructed on a ridge in Teponoa valley. A present day informant said that women and children sought refuge there during periods of war. There is also a defensive ditch up on the Hane ridge.
Then, some time after European contact, there may have been an exodus of the Tititea tribe; they may have settled in Vaipae or moved up into the inland area. Eventually, when the valley was re-settled, it was first on the Kohau ridge and later closer to the shore where the present village is now located.
CHAPTER VII

ASSESSMENT OF THE SIMILARITIES AND DIFFERENCES
BETWEEN THE PREHISTORIC AND CONTEMPORARY
SETTLEMENT PATTERN

The two main elements in the study of settlement pattern are the territory and the population. On Uahuka, as in the rest of the Marquesas, the territory has remained basically the same but the population has drastically diminished. The demographic drop, accompanied by a modification of the ecology, occurred during the early period of European contact and resulted in a severe breakdown of the Marquesan traditional culture and social organization. Therefore, for various reasons, it is questionable whether or not a comparison between the past and present settlement pattern is valid and useful.

Undoubtedly, the causes of these transformations can be broken down into a number of inter-related and interacting factors and to the conflict of ideologies (traditional, western and Catholic). In this conglomeration of factors, two seem to have precedence over the others. On the one hand, there is the demographic factor and on the other, a very subtle factor, difficult to define because of the flexible and mobile character of Marquesan society. This impressed the first European observers. In a certain manner, this characteristic facilitated the process of adaption to cultural change.

The first point is the one regarding the population change. Even though some of the early population estimates of the Marquesas may
have been exaggerated (suggested figures have ranged from 200,000 to 50,000), there is no doubt that the islands did suffer an exceptionally large population decline. Modification of the social organization would have been inevitable. This question has not, up to now, received the attention it merits in anthropological research, but it is likely that there does exist in certain pre-industrial societies a direct relationship between population size and the degree of complexity of/in the social structure of the culture. If Uahuka had at one time a population perhaps ten times greater than at present, the inhabitants must have had a much more elaborate social and political organization. What is known and what can be inferred from the Hane inland sites would indicate a division of labor, the organization of production, and the preservation and redistribution of food. Such an elaborate system would have had meaning only for a population much greater than the present one.

The second point, equally important, is that the Marquesas are significantly distinct from other Polynesian islands, and cross-cultural comparison for reconstruction is subsequently very difficult. The individualism of the Marquesans is striking if compared with other Eastern Polynesian groups. In the past it was reflected in the absence or a rigid social stratification and in a rather loose political organization which was more dependent on personal initiative than on an ascribed position in the social stratification. This phenomena appears clearly in the summary by Sahlins who, in discussing this problem of stratification, divides Polynesian cultures into four categories on the basis of economic, socio-political and ceremonial
stratification and places the Marquesas in third position along the outliers of Tikopia and Futuana, after the rest of the high islands (Sahlins 1958:11,12).

Melville, quoted by Sahlins, expresses very well this characteristic trait:

Mehevi was in fact the greatest of the chiefs—the head of his clan—the sovereign of the valley; and the simplicity of the social institutions of the people could not have been more completely proved than by the fact that after having been several weeks in the valley, and almost in daily intercourse with Mehevi, I should have remained until the time of the festival ignorant of his regal character. (Sahlins 1958:75 from Melville 1931:252)

Marquesan chiefdoms were usually limited to a single valley so that the headman could be in frequent contact with the relatively small population (Sahlins 1963:299). However in other Polynesian island groups such as Hawaii, the Society Islands, and Tonga there developed an "unparalleled political momentum /whereas/ in New Guinea and nearby areas of western Melanesia, small and loosely ordered political groupings /were/ numerous..." (ibid:286). In this respect the Marquesas resemble more closely Melanesia. In the inland Hane settlement this looseness is reflected by the absence of a well defined scheme in the organization of space. The houses were grouped into clusters, as they are today, which may have corresponded to extended family groups.

The affirmation of Williamson, presented by Sahlins, stating that "the size of one's house platform was proportional to one's status" (Sahlins 1958:74) is not very convincing. Handy's opinion was that "The house of the chief was of course larger and more elaborate
than that of an average man in the tribe, but other wealthy members of a tribe, and particularly warriors, had houses equally fine" (Handy 1923:46). In Hane valley 25 or about one-quarter of the house sites were 50 square meters or over in area, the average being between 30 and 40 square meters. Though the largest house structures did tend to be on the tohua or me'ae sites, some of the house sites (paepae with round pits) associated with production were also large (see Figure 7).

It can be concluded that the organization of the ancient society was very different from the present one. A variety of sites are the only tangible remains of the rituals and festivals (Handy 1923:203-223) which have totally disappeared from the Marquesan culture. The flexibility of the Marquesan society, which is expressed in one way by the social mobility, is also seen in the settlement or community pattern by what seems to be a rather haphazard arrangement of sites. This stands in contrast to the symbolic planning of, for instance, certain New Caledonia villages which reflect the complexity and elaborateness of the social and political organization. Or, in keeping within the realms of Polynesia, it is seen in the rigorous organization of space, for example in Tahiti which, in the period just prior to European contact, left for the chiefs and nobles the coastal area, by pushing the ra'atira (intermediary class) inland, and the manahune (commoners) to the heads of the valley. Such a system could be maintained partially because "... succession to chieftainship was tightly controlled by inherent rank" (Sahlins 1963:295).

On Uahuka, as elsewhere in the Marquesas, when the ancient conditions persist, it seems to constitute only a survival from the
earlier culture. In such a way, a cross-cousin marriage is accepted (at one time it was the preferred marriage) though none of the informants could give any explanation as to why it was "good." Similarly, in the realm of settlement pattern, there may be a number of survivals that manifest themselves among the many changes that have taken place.

The Hane valley can be divided into three ecological zones: the low, relatively flat coastal zone; a broader and steeper intermediate zone; and the extreme inland zone consisting of a large number of steep, narrow ridges radiating from the main, central ridge of Hane. The vegetation of the first two zones has undoubtedly been subjected to great alteration. Coconuts, planted about fifty years ago (in response to a demand for copra), cover the entire lower valley and coastal areas. Breadfruit trees are more confined to the inland valleys beyond the limits of the coconut plantations. The only inhabited area now is the lower, coastal zone.

In the past, there were no nucleated villages in the Marquesas. The early historical accounts refer simply to the scattered houses. Melville wrote about Taipivai (Nukuhiva) as follows:

The valley is some nine miles in length and may average one in breadth, the houses being distributed at wide intervals throughout its whole extent, principally, however, toward the head of the vale. There are no villages. (Sahlins 1958:204 from Melville 1931:260-261)

Today, the Hane settlement may be called a village though the dispersed houses retain the ancient characteristic pattern of house clusters which appears on Figure 21.
Today, as in the past, the households constitute the local units of production and of consumption. Regarding production, the abandonment of the ancient techniques and of taro horticulture renders useless the need for activity groups larger than that of the household. This point will be brought up again later. Regarding consumption, the relationship between households as revealed by the exchange of food (fish, goat, pig or horse meat) is intermittent. In the Marquesas, as in Eastern Polynesia, food transfers and the sharing of meals is the most certain criteria of family and social relations and the eating house is more important than the sleeping house.

The existence of several sub-units which correspond to descent groups is shown in Figures 22, 23 and 24. Due to the lack of a systematic study, the only observations that can presently be made regarding the relations between households is that there are first of all relations between neighbors and next between first degree parents and children or between families of orientation and procreation.

The alliances in the family Kave'e residential zone are interesting. The three Fournier daughters-in-law of Hatu Kave'e (Household #10) have much more relationship with him than they have with their own families of orientation (Households #4, #22, and #6). This would seem to correspond to the ancient pattern of patrilocal extended families and earlier viri-local rule of residence (Sahlins 1958:159, Marander 1963:341). However, the number of cases in Hane is not sufficient to allow the development of a definite theory on this point.
Adoption, and the alliances it creates between the adopter (or adopting couple) and the natural parents of the adopted probably had as much importance for the two households as the affiliation caused by marriage. The alliances and adoptions which take place in the village bring closer together the ties between the households from which originate the spouses and the households which give and take children for adoption. Apparently, the type of post-marital residence and the custom of adoption, both of which continue to be influenced by the ancient model, serve to reinforce the ties between the village households.

On the other hand, an essential difference between the past and present social organization, lies in the size of the minimal kinship units and residence groups. At one time these corresponded to the extended family (Sahlins and Marander:ibid); today they correspond to individual households containing usually just a couple and their children and in two isolated cases a parent of one of the spouses. Sahlins is clear on this point and writes: "The household was composed of a patrilocal extended family headed by the male junior in descent." He adds that the so-called tribe consisted of a number of households tracing descent from a common ancestor of whom the chief (Hakaiki) was the direct descendant" (Sahlins 1958:159). The Hane inland survey with its characteristic site complexes or groups of houses, some of which were near the taro terraces and breadfruit pits is in accord with this description by Sahlins. It is not possible at present to develop any further this point in the study of the Hane settlement pattern. The pertinent point is that the economic and social relations between
individual households have greatly diminished; the ancient corporate
center of the extended family has disappeared.

In summary, at one time the minimal unit was the extended
family which was sub-divided into several residences at close proximity
to one another. Today as a result of European contact and the de-
population, the Marquesan society has had to reorganize itself along
new lines. The minimal unit became the nuclear family which resides
in a single house. This tendency is in accord with the new economic
conditions and is reinforced by the Catholic ideology with its emphasis
upon the Christian notion of an autonomous couple joined by marriage.

Marquesan social organization has changed along with the
economic conditions and areas of settlement. According to the early
European accounts and to the passage by Melville cited earlier, the
houses were distributed primarily in the inland areas, sometimes
rather far from the coast. This is illustrated in Figure 26 which
summarizes the reconstructed movement of settlement in the Hane valley.

The present location of the village has a symbolic value in
the sense that it corresponds to a fundamental change which not only
separated, but opposes, the post-contact period from the immediately
preceeding period. This change from inland to the coast is principally
a result of the new socio-economic adjustments. Before developing
this point, it is necessary to reconsider the effects of insecurity
on the settlement pattern. All the early authors, treating the pre-
European period, stress the occurrence of savage wars that were waged
between tribes of different valleys in the Marquesas. It is certain
just by judging from the number of terms regarding war and the
associated institutions in the Dordillon Marquesan dictionary (Dordillon, 1904) and to the descriptions by Handy of the tribal relations, combats, warriors, priests, arms and sacrifices, that warfare did have a central place in ancient Marquesan society. Marander regards as a function of these wars "the reinforcement of social cohesion" (1964:309); Vayda, in quoting Wright (1942:71-73) concluded that "primitive warfare 'functions primarily' to maintain the solidarity of the social group and that many Melanesians fought 'without economic or political objectives or consequences'" (Vayda 1961:346). In the Marquesas, the first two points probably were an outcome of the wars which were often fought with a motivation and a consequence (for example, the occupation of Vaipae by a Nukuhiva tribe and the assistance of another Nukuhiva tribe in driving out Tuhipipi tribe on Uahuka). However, Marander's contention that the wars had more influence on the distribution of the population than did other ecological conditions (1964:308) may be an overstatement. Undoubtedly, warfare did cause the settlements to move further inland for reasons of defense (attacks were often made from the sea and the possibility for a greater dispersion of sites inland may have been an advantage,) but this factor was probably of greatest importance in the later period of pre-contact Marquesan culture.

The MUH1 coastal site is interesting in this respect for three main reasons. In addition to indicating a coastal settlement or occupation at a very early period, the presence of turtle bone in the lowest levels would suggest the existence at this time of social stratification (turtle was a food reserved for the chiefs and tapu
class) and the fact that all the material from one level was burnt would suggest that there had been a raiding attack. Fire as a war tactic was reported by Porter in the early 1800's.

Nevertheless, since the readjustment of Marquesan culture after European contact, these necessities for security and defense have disappeared. At the same time, the arrival of the European, and later the Chinese trader, has put an end to the extreme isolation of the Marquesan and to the self-sufficiency of each valley by opening the islands to the outside world on which they are now dependent. A cash economy has replaced the ancient system of production and the inhabitants are greatly dependent on the money they earn either from copra or from wooden carvings which are sold in Tahiti for the purchase of food, clothes and household items. This dependence has become even greater by the abandonment and the loss of numerous techniques and traditional resources. European substitution goods are generally more durable and often cheaper than the traditional good. One of the foremost examples is in that of house construction. Modern materials (cement, lumber, pasteboard, and corrugated iron) have replaced the local materials and at the same time all the ancient techniques connected to the transformation and transport of the local materials which was necessary for the construction of earlier style of Marquesan house have been discontinued or forgotten.

However, the most serious losses are production techniques related to agriculture and to fishing (Handy 1923:164-202). The short time in the field did not permit a study of fishing which is today done
by line from canoes and is an individual activity. Collective fishing for porpoises has disappeared and the people of Hane do not use nets which would require collective effort from more than an individual household. In earlier times in the Marquesas, as well as in the rest of Polynesia, large scale net fishing was a privilege of the chief. Today the inhabitants do not have any remembrance of the big collective fishing and the associated activities which could have assembled 700 to 900 persons (Garcia 1843:70-73 in Handy 1923:107).

Regarding agriculture, the two main crops were breadfruit and taro which necessitated the excavation of pits for the preservation of the breadfruit and the construction of terraces for the growing of taro. The activities were surrounded by rituals and the chief played a part by presiding over the different phases of production and making sure that the collective ma pits for the breadfruit were filled as a guard against famine. This important and essential activity of the periodical redistribution of the ma together with the power to impose economic tapu, would have been sufficient to justify the role and the function of the chief. If one refers back to Handy and to the association that he presents between the collective ma pits and the function of the chief, it would seem to indicate that if all the pits in Hane valley were contemporaneous, there would have to have been simultaneously several chiefs in Hane. However, the local tradition that there was only one tribe and one chief in the Hane valley would contradict this view and would be in accord with a movement of the settlement in the valley.

Breadfruit continues to be a staple food in Hane as elsewhere in the Marquesas, and some of the associated items (ma pits, shell
scrapers, stone pounders and wooden pounding boards) are common items in most households. In contrast, the production in the Marquesas of taro has long been abandoned. On Uapou there is one recorded instance of it being discontinued in about 1880 (Handy 1923:185). The only person who now cultivates taro in Hane is a Raiatean (Household #17) and the ancient means of irrigation has been replaced by piped water. At the time when the inland Hane taro terraces were in use, they were probably operated by extended family groups. After breakdown of the Marquesan culture and social organization, these larger economic activity groups were no longer necessary. The present day, smaller family groups now prefer to devote their time and efforts to copra or to carving than directly to subsistence. Manioc which grows in dry and rather unfertile soil and requires no alteration of the ground surface is the only tuber that is grown by most of the households in Hane in small gardens around the house. It represents a replacement in the diet along with flour, sugar and other imported food products.

To recapitulate: the validity of a comparison between the past and present settlement patterns was questioned due to the great changes that have taken place since European contact. Only certain remnants or survivals of the ancient Marquesan culture are readily perceivable today. Some of these dealing with the social structure as exemplified by Hane village such as the rules of residence, marriage pattern, and adoption were mentioned. The other point made regarded the special characteristic of a loosely organized Marquesan society which, in the past, as in the present, never achieved to any striking degree the
organization of space comparable to that attained elsewhere in Polynesia.

The Hane settlement was then considered in regards to its ecological and cultural settings. At a time when the population was larger, the utilization of the natural environment was much greater than it is now. Occupation specialists in many fields were common. As a result of the depopulation and acculturation there is less dependency on the local resources, and a great deal of knowledge and many techniques have been lost or discontinued. The young people know considerably less regarding their ecological setting than their forefathers.

The reasons for a change in preference of settlement areas within a single valley have changed due to the termination of warfare, population decline and the influence of Westernization. The local people are greatly dependent upon the trading schooners from Tahiti to bring them the new necessities of life which are paid for by copra sales and wooden carvings. This has brought the settlements back to the coast, and the church and school have served as additional stimulus for the congregation of people into settlements more closely resembling villages.

Even with the present population increase, it is unlikely that the people will ever fully exploit their immediate environment for their own means of subsistence. They have become too dependent on substitution foods and materials. The basic social organization will probably not change, since there is nothing to encourage the return to
the larger extended family groups and other forms of self-sufficient
hamlet-like settlements. In fact, the trend is quite the opposite
since it is geared from the replacement of scattered settlements to
a form of a more compact village settlement.
BIBLIOGRAPHY


Annuaire de Tahiti pour 1892. Imprimerie du gouvernement. 1892.


Belknap, J. Collections of the Massachusetts Historical Society for the Year 1795. Boston. (Reprinted 1835)

Beaglehole, John C. (editor) The Journals of Captain James Cook on his Voyage of Discovery.


Chabouis, L. Botanique. Petite histoire naturelle de la Polynésie française. I. Papeete, Tahiti. (not dated)


Chang, K. C. Rethinking Archaeology. New Haven, Conn.


Cook, James. The Journals of Captain James Cook on his Voyages of Discovery. I. Edited from the original manuscripts by J. C. Beaglehole and others. Cambridge, 4 vols.

Cook, James. The Voyages of the Resolution and Adventurer 1772-1775. Vol. II.

Crook, William Pascoe. The Marquesas Islands. (Typed copy from a MS in Mitchell Library, Sydney.) 1797.


Forster, George. A voyage round the world in his Britannic Majesty's sloop Resolution, commanded by Captain James Cook, during the years 1772, 3, 4, and 5. Vol. II. London.

Fanning, Edmond. Voyages Round the world between the Years 1792-1832. Collins and Hannay, New York. 1833.


Langendorff, G. H. Von. Voyages and travels in various parts of the world during the years 1803-1807. London. 1817.


Tautain, Dr. Notes sur les constructions et monuments des Marquises. Ibid. vol. 8, pp. 667-678. 1898b.

Thompson, R. "The Marquesas Islands," Friend (May), 71. 1845.

Vancouver, George. Voyage of discovery to the north Pacific Ocean and round the world; ... performed in 1790-1795 in the Discovery. Vol. II. London (85-95), 1798.


Ingraham, Joseph. Journal of the Voyage of the Brigantine "Hope" from Boston to the Northwest Coast of America 1790-1792. (Photostatic copy of the original manuscript in the Library of Congress.) (not dated)


APPENDICES
Fig. 27. Location map of Hane valley
Fig. 28. Poioletona
Fig. 29. Vai'aoihi, Tanihia, Vaiapa, Havaiki
Fig. 30. Paupiu, Teviokiai, Havaiki, Hatueki
Fig. 32. Keetupu, Ta‘aoa, Kohau
ca. 1800 - Soon after the Nukuhivans were in possession of muskets and gun powder, they decided to go try them out on Uahuka. An invasion was made by the Taipi tribes of Hatiheu and Anaho (north coast of Nukuhiva) and the Uahukans were quickly defeated and fled to the mountains. The Taipis occupied the valley/probably Vaipaee/for three months, returned to Nukuhiva, and then made a second successful invasion. Destruction was done without mercy; they "... cut down all the breadfruit and coconut trees on the island, destroyed all the taro plantations, and the tapa and kava plantations, burnt all the houses and killed all the pigs and fowls." In desperation, the Uahukans made a counter-attack during the night and held their ground lower in the valley. An agreement was then made between the Taipi and the Vaitahi and Nai-iki tribes of Vai-pae; hostages were exchanged and a peace covenant was made in the name of the two high priests or ta'ua.

Fifty or sixty years later the covenant remained unbroken and much intermarriage took place between the people of the two islands. Every two or three months people came from Nukuhiva to visit. (Lawson, 1867 MS)

ca. 1827 - The Hapaa tribes of Nukuhiva visited the Nai-iki and Vaitahi tribes of Vaipaee, Uahuka to bring them arms and powder. The occasion seems to have been to assist the Vaitahi tribe in their attack on the neighboring tribe of Tuipipi of Haavei valley to the west. In the meantime, the Nai-iki drove off the mountain tribes/probably of Haavei valley/and forced the tribes to the east to settle for peace. The Tuipipi tribe was defeated and left Uahuka on bamboo rafts and landed in Hoomi, Nukuhiva.

Forty years later, three old women who represented the last of the exiled tribe, died. (One was married to a high priest of Uapou, and the other two to chiefs on Nukuhiva.) The last man, at this same time, lived in Hokatu. (Lawson 1967:n/p)

ca. 1827 - Shortly after peace had been made between the valleys of Vaipaee and Hokatu, the Maku-oho tribe of Hokatu kidnapped a chief's daughter from off the rocks in Vaipaee, and later sacrificed her to their gods. The girl's father saw the affair and so he stole a pig from the Maku-oho which he put in his canoe and took back to Vaipaee. Forgiveness then was sought: "Two days afterwards the whole of the Nai-iki tribesmen, women and children carried presents over to Hokatu to give to Maku-oho and the gods so the affair apparently ended." (Lawson 1867 MS)
ca. 1830 - Three years after the Nai-iki gift giving, they invited the Maku-oho for a feast and then killed about fifty of them. At this time ships were stopping at Uahuka and the people had obtained muskets and powder in exchange for pigs.

1837-1839 Conditions between Vaipaee and Kokatu must have remained unsettled for about this time the Nai-iki proposed peace and a covenant was made in the name of Ta'ua Tuhi-oa, the high priest of the Nai-iki. /This name is the same as the High priest who made a covenant with Nukuhiwa in the early 1800's/. The two tribes exchanged some of their daughters in marriage, the war ended and peace was maintained until 1856. (Lawson 1867 MS)

1840 - "In 1840 the native population Uauna was not less than 5000" (Lawson 1867 MS). This figure appears to be much too high.

1841 - In 1841-42 there was a massacre in Hokatu following the visit of a British whaler, the Runaway. Nine or so members of her crew had deserted the ship in Hokatu where, at the time, there were living three whitemen—Harry Williams (a trading master), J. Johnson, and Manuel, a Spaniard. All three spoke Marquesan fluently. Williams was married to the chief Tokoa's daughter by whom he had a large family. A friend of Williams was Matia, the eldest son of Noho who had been twice to London on a whaler and who spoke English fluently.

Noho was in need of a whaleboat so schemed to get one from the Runaway by offering fifteen pigs in exchange. The Captain could not part with a boat so Noho threatened to kill Harry Williams and his companion/?. Harry's wife heard the rumor so swam out to the ship to warn her husband. The whaler then pulled up anchor and sailed away after having deposited Harry and his companions "in the leeward tabued bay of Hanahina." /This would have to have been Hame bay/.

In the meantime, Johnson, Manuel and the nine deserters were in a house in Hokatu. The next morning there was a surprise attack by about 100 natives /probably Maku-oho tribe/; two of the whitemen were killed, the rest fled inland with a young Marquesan boy who took them to the house of his uncle, the only son of Hunono, the oldest chief woman of the tribe. There, they were given protection.

The two massacred whitemen were sacrificed to Paua-tuhi-va in Kuaana valley. (This valley is in Vaipaee which would suggest that the attackers came from there.)

At this time the Maku-oho numbered one to two thousand individuals, "but within a year after the massacre there were only two of the murders alive. The rest had all died besides many others and they have been decreasing ever since . . ." (Lawson 1867 MS)
1842 - The Marquesas were declared a French Protectorate by Admiral DuPetit-Thouars.

1844 - In order to make a peace covenant with the Taipi tribes of Hatihetu and Anaho, the Uahukans (probably representatives of the Nai-iki and/or Vaitahi tribes) planned an expedition to the northeast coast of Nukuhiva. The evening prior to the departure a pig was sacrificed. Things taken to Nukuhiva were a "hameva or flag of truce, a large tapu pig, a large loggerhead turtle, and a gourd shell full of blackfish teeth strung two and two together on strips of white tapa. . ." (Lawson 1867 MS)

The Anaho and Hatihetu people had had a tapu on pigs for six years, but this tapu was broken by the visiting party and a big feast and ceremony were given. This took place at the heahu or me'ae with all the males of the two valleys partaking in the ceremonies (Lawson 1867 MS).

1856 - The covenant between Hokatu and Vaipae was broken by Martikiani, the head warrior of the Nai-iki tribe. The war lasted off and on until August 1866 (Lawson 1867 MS).

1856 - In the Fifth Annual Report of the Hawaiian Missionary Society mention is made of Robert Mills of the American Mission Society. He had appointed two other missionaries and the three were to establish the first Protestant Mission on Uahuka. However, when they arrived in San Francisco,

... there the character of Mills had been fully exposed showing that he is entirely undeserving the confidence which had been proposed to him.

The venture was dropped (Hawaiian Mission Society Reports, May 1856:5)

1859 - Though the going was slow, the Roman Catholics seemed to have made better headway than the Protestant missions; this was in part due to their greater numbers, the aid and backing which they received from the French naval ships, and the tactics used to get converts. In January of '59, the Monseigneur Pere Dominique christened a small schooner which carried a crew of three Hawaiians. Also on board was a Hawaiian catechist Toeone and his wife Bifiane. The two were dropped on Uahuka to instruct the people. Later Pere Dominique joined them and taught the local people carpentry and with them built a small limestone chapel. (Delmas 1929:121)

1860 - This chapel was inaugurated on August 28, 1860 under the name of St. John-Baptiste. However, Timeone and his wife fell ill so the poste was abandoned on Dec 1, 1860 and not retaken until 1878. (Delmas 1929:121)
The location of this chapel was not noted by the author and no mention of it was found in the Protestant mission reports and correspondence.

1862 - /The events that follow were in a letter written from Vaipae, but they probably took place in Hivaa where Lawson had been a few months earlier/.

There were wars and rumors of war throughout the island group. Gun powder was becoming scarce in many places. Few or no whalers were calling so the commerce had fallen. A drought had killed "many thousands of breadfruit trees" which resulted in a famine. Coconut trees were being tapped and drunkenness was very prevalent. Recently there had been some rain and potatoes/sweet potato?/ were planted in great quantities to replace the breadfruit.
(Lawson, letter to Rev. Darman, Dec. 20, 1862)

1863 - Small pox hit the northern Marquesas and an embargo was put on Nukuhiva where between four and five hundred people had died. On Uapou the toll was 160. No mention is made of Uahuka.
(Lawson, letter to Rev. Darman, Dec. 7, 1863)

In the same letter, Lawson writes about the contact relationships between Europeans and Uahukans. Traders and ships seldom or never landed or traded in Vaipae, "but traded in the tapu bay to the windward." This must again refer to Hane bay. During the twenty years that Lawson had been on Uahuka,

. . . no ships or ship boats or crews have ever been robbed of anything by the natives of this ?Vaipae or Hane?/valley or ever suffered any injury from natives or had any quarrells. And a few years ago when ships were a plenty, we used to have from 20 to 30 ships annually and this is the only bay in the whole group of the Isles Marquesas where ships boats and crews have not been robbed and otherwise suffered injury. Ever since first settling here, up to this present time, the murderers ov Vaepaehae,/this expression is a translation of the Marquesan term designating the Taipi tribe of Vaepaehae/ district of Kuaana/Vaipae/ have been and now are the honestest tribe of the whole Marquesas . . . (Lawson, letter of Dec. 7, 1863)

It would seem from this account that since 1843 ships were going to Vaipae and that the "tapu bay to windward" must have been tapu for at least twenty years.

1866 - (April): Laioha of the Hawaiian Evangelical Society and his family arrived in Uahuka from Fatuhiva and started their Protestant mission in Hokatu. The chief Timauonahe was an eager student.
1866 - (June): To celebrate the completion of Laioha's house, the chief of Hokatu went inland accompanied by two men, two women and his two younger brothers to fetch some chickens. Quite unexpectedly, forty men of the Nai-iki tribe, armed with a gun sneaked up on them. According to Laioha, they had come to rob. The Hokatu people were attacked and the chief, a man and a woman were shot. Her head "... was cut while still alive." In the skirmish three men of the Maku-oho tribe died and were decapitated, and four were taken prisoners but were rescued by Laioha. (Laioha, letter of Aug. 5, 1866)

1866 - (August): The war that had been going on and off for the past ten years between Vaipaee and Hokatu finally came to an end on August 28, 1866 when the Maku-oho was defeated. "Teiki Noetini was acknowledged king of the island and the French resident died shortly afterwards in peace." (Lawson 1867 MS)

No other reference has been found to this French resident. According to the 1867 census, the new chief was only a seven-year-old child and son to the chief of the Nai-iki tribe of Vaipaee.

" - Kahuoa, the last sorcerer on Uahuka, died. With his death there remained no sorcerers on the three islands of the northern Marquesas (Lawson 1867:n/p)

" - There were ten deaths recorded on Uahaka this year. Hokatu had nine (seven men and two women); five had died in warfare, four due to illness. A man in Vaipaee had "died on the ocean." (Laioha, letter of April 30, 1867)

1867 - (April): The rewards of the first year's work of the Hawaiian Mission in Hokatu were 32 converts who in addition could read and write.

These are good people, friendly, gentle, filled with love, unlike some people in other places ... There are many good activities among the old residents in my knowledge such as taro planting, banana planting, raising cane, potatoes, paperbark trees, also making canoes, fishing, building houses and other good works. There are also many evils—war, idolatry, stealing, making tapus, fornication and other evils. (Laioha, letter of April 30, 1867)

1867 - Laioha did a partial census of the island. The figures are not quite the same as Lawson's for the same year.

There are two valleys where the people live on the island of Uahuka. The number of men in the valley where I live /Hokatu/ is 36, women 20, girls 9, boys 10, a total of 75.
In Vaipae where the foreigners live there are 88 men, 69 women, 16 boys, 9 girls—a total of 172. The total inhabitants on this island of Uahuna is 247.

The strangers that resided in Vaipae were one man from Fiji, one from Africa, and four from England. In Hokatu, Laioha and his family added up to six from Hawaii. (Laioha, letter of April 30, 1867)

1867—(December): A complete census of Uahuka was made by Lawson, the results of which are summarized below:

<table>
<thead>
<tr>
<th>Valley</th>
<th>Tribe</th>
<th>Men</th>
<th>Women</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hokatu</td>
<td>Maku-oho</td>
<td>46</td>
<td>27</td>
<td>73</td>
</tr>
<tr>
<td>Vai-naonao</td>
<td>Ati-kau</td>
<td>18</td>
<td>14</td>
<td>32</td>
</tr>
<tr>
<td>Kua-ana</td>
<td>Na-i-ki</td>
<td>31</td>
<td>17</td>
<td>48</td>
</tr>
<tr>
<td>Kua-ana</td>
<td>Vai-tahi</td>
<td>65</td>
<td>46</td>
<td>111</td>
</tr>
<tr>
<td>Foreigners</td>
<td></td>
<td>11</td>
<td>12</td>
<td>33</td>
</tr>
<tr>
<td></td>
<td></td>
<td>171</td>
<td>116</td>
<td>287</td>
</tr>
</tbody>
</table>

This is higher than Laioha's because it includes Vainaonao, a valley to the east of Vaipae. (Lawson census 1867)

- A heavy rain that lasted for a night and a half caused a flood in Hokatu. Water broke into Laioha's house and washed away the garden of potatoes, bananas, onions and sugar cane which Laioha and others had planted. (Laioha, letter Dec. 1867)

1868—(March): A whaleship from New Bedford stopped in Hokatu for provisions and was supplied with potatoes, coconuts, bananas, pigs and chickens. (Laioha letter of May 7, 1868)

(May): The protestant church now had twenty-two members.

Laioha's life was threatened by H. Tomi /Jose?/, a Caucasian who became "vice-governor of Uahuka."

The details of this incident are not clear but it seems that Laioha was having personality clashes with various people. (Laioha, letter of May 7 and 11, 1868)

1868—(July): "There is no war here on Uahuna, the natives are of one accord and are friendly . . ." (Laioha, letter of July 6, 1868)

1868—The Hawaiian mission on Uahuka was abandoned due to general difficulties.
1874 - According to a missionary report of 1874, Uahuka as well as other islands are said to have desired Protestant missionaries. Three years previously there remained only seven Protestant missions in the Marquesas, and these were on the islands of Fatuhiva, Hivaoa and Uapou.

1876 - "... Uahuna is a desirable station for a Hawaiian missionary, and a good place for a boy's boarding school." (The Friend, July 1876:62)

1877 - In August 1877, the Catholic Mission received two new missionaries from France, so it was decided to send one to Fatuhiva (abandoned by the Catholics in 1855) and the other to Uahuka, abandoned since 1860. Pere Privat Delpuech was assigned to the latter post. The population of the island was then 150. A small wooden chapel was built, a school opened and by the end of two years he had baptized 15 people, delivered five marriages, and gathered a group of about thirty followers in each of the three villages of the island. However, shortly afterwards, Pere Primat returned to Tahiti and again the evangelicalation of Uahuka dropped. (Delmas 1929:304)

An interesting point in this passage is the affirmation of three villages. Ten years earlier there had been but two.

1891 - A French government mission spent four days on Uahuka to make a chart. At this time there were 195 inhabitants. Two deserters from a whaler had installed themselves in Vaipaee for the past thirty years.

Simple roads made with picks and wooden shovels were made to connect Ananai /Hane/ to Vaipaee and to Amamao Bay, the three inhabited points of Uahuka. (Petit 1891:229-231) /Hanamao Bay is just east of Hokatu/. 
APPENDIX C

HANE VILLAGE HOUSEHOLDS
UAHUKA, MARQUESAS 1965

1. Tehau Joseph Fournier, Hane

   Edite Fournier, Tahiti
   1. Ciceraine - f
   2. Pare - m
   3. Johnville Nahau - m
   4. Ea - m
   5. Ea Vecent (died) - m

2. Ea Mohi

   Agnes Vai (Emile's ex-wife)
   1. Agnes - f (adopted from Teiki and Kate Kavee)

3. Teiki Francois Fournier, Hane (Mutoi)

   Teani
   1. Edwige - f (in Atuona)
   2. Edgar - m (in Taiohae)
   3. Esan - m
   4. Hubert - (in Papeete)
   5. Alexi - m
   6. Napoleon - m
   7. Tupe - f
   8. one miscarriage
4. Jean Fournier, Hane

Cerina Fournier, Vaipae

1. Deni - m
2. Sylvain - m
3. Frederic - m
4. Kea - f
5. Tepu Marguerite - f
6. Ma'u - f
7. - m

Children adopted by Emile
1. Cere - m  
   brothers, mother is Kate, father unknown Moitini
2. Emi - m

5. Taio Ro'otuahine, Hane

Taua

Adopted children
1. Aline - f
2. Taua - f (granddaughter)
3. Tahia - f

6. Matai Ro'otuahine

Rea Ro'otuahine

1. Amerita - f (in Papeete)
2. Therese - f
3. Adrine - f (in Papeete, married)
4. Amedi - m
5. Maurice - m
6. Eugene - f (Papeete)
7. Erice - f
8. Raphaelle - f
9. Jacqueline - f
10. Timi - m
11. Dolores - f
12. Charles - m
13. Maeva - f
7. Vi'i Fournier

Oscar Fournier, separated from Vi'i

1. Eri - m (in Taiohai)
2. Marie - f (in Vaipae, married)
3. Pori - f (in Taiohai)
4. Tutu - f (in Hokatu, married)
5. Sophie - f Hane
6. male - deceased

Mo'i

Sophie

1. Patricia - f
2. Sylvana - f

8. Teiki Havanaka Kave'e, Hane

Chatherine (Kate) Kave'e, Hane

1. Marie Louise - f (in Atuona)
2. Teupoo - f
3. Vai - f (in Atuona)
4. Uhe'e - m
5. Tahiaau - f
6. Koomahu - m
7. Hatu - m
8. Agnes - f (adopted by Mohi)

9. Eria Pioko'e, Hivaoa

Teoho Brown Pioko'e

1. Jacqueline - f (in Atuona)
2. Catherine - f (adopted by Teoho's sister in Papeete)
3. Rebecca - f
4. Joseph - m (in Taiohae)
5. Tngnas - m (in Taiohae)
6. Vehine - f
7. Stephen - m
10. Hatu Kave'e (chief)

Taua Pukeani Kave'e

Hatu by previous union to Vi'i's half sister, Tititotai had four children. When she died, he married Taua Pukeani.

1. Mahe - m
2. Teiki - m
3. Ata - f
4. Tahia - f (in Taipivai)
5. Georgette - f (in Papeete, jail)
6. Leon - m (adopted by Tanaoa)
7. Richard - m (adopted by Tanaoa)
8. Kiri - f (in Papeete)
9. Raymond - m (died soon after birth)
10. Raymond - m (died in fall off cliff)
11. Jeanne - f
12. Carina - f (Papeete)
13. Michael - m (in Papeete, adapted by Tanaoa)
14. Ernest - m
15. Marie-Joseph - f (in Atuona)

11. Ani Apee

Ata Kave'e Apee

1. Jean - m
2. Viri - m (adopted by Taua Kave'e)
3. Natche - m
4. Hu'i - m
5. Anihoka - m (adopted by Mahe Kave'e)
6. Hi'o - m
7. Geneviere - f
8. Norbert - m

12. Mahe Kave'e, Hane

Kerita Fournier Kave'e

No children. Adopted:

1. Anihoka Apee
13. Richard Kave'e, Hane

Therese Ro'otuahine Kave'e

1. Maurice Patrick - m (adopted by Tanaoa)
2. Elizabeth - f
3. Raymond - m

14. Etienne Surpice

Teupo Vaatete Surpice

1. Irista - f
2. Desiree - m

15. Kaihei Surpice

Mata Vaatete Surpice

1. Toho - m
2. Etienne - m
3. Louis - m
4. Vina - f

16. Toho Surpice, Hane

Tetua Mahoto, Vaipae

1. Rose-Marie - f
2. Teiki - m
3. Moi - m
4. Hanau - f
5. Tahia - f
6. Te'ai - f
7. Oaumina - f
8. Tekoho - m
9. Marie - f
17. Auri'i Tamihau, Raiatea

Kahua Tamihau (deceased)

1. Taua – f (married to Taio Ro'otuahine)
2. Maurii – f (in Papeete)

Auri'i lives alone with an adopted boy

1. Eric Vaatea, Vaipae

18. Oscar Fournier


19. X

Marie Fournier X

Number of children not recorded. House is deserted; family living in Vaipae.

20. Poni X, Chinese from Taipivai

Kohau Fournier

Poni and Kohau's children adopted by Taio and Taua Ro'otuahine

1. Taua – f
2. Tahia – f

Parents have left Uahuka.
21. Tanaoa Vaate, Hane

Hina (Upoko, first wife)

1. Teupo - f
2. Catherine - f (in Papeete)
3. Ruita - f (in Papeete)
4. Taro - m (in Papeete)
5. Nani - died

Vehine (second wife - part Chinese from Tahiti)

1. Catherine - f
2. Tehau - m

They have adopted

1. Reo Kave'e
2. Richard Kave'e
3. Michael Kave'e
4. Maurice Kave'e

22. Auguste Fournier

Mena, Taipivai (deceased)

1. Kerita - f
2. Joseph - m
3. Carolina - f (in Hivaoa, husband from Uahuka)
4. Antoinne - m (in Taiohae)
5. Riria - f (in Papeete)
6. Itara - f (in Papeete)
7. Roro - f (in Papeete, husband is Reo Kave'e)
8. Marcelle - f
9. Damas - m
10. Eric - m (died at birth along with mother)

23. Henri Fournier

No present wife nor children. Is suffering from leprosy and elephantiasis. Lives in a shack near Matai Ro'otuahine's.

24. Charles T Tahiti - government nurse
Murielle T Tahiti - school teacher