

ARCHAEOLOGY OF THE MARQUESAS ISLANDS

BY

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CONTENTS

	PAGE
Introduction	3
Stone construction	5
Walls	5
Terraces and platforms	6
Kinds and sources of material	7
Methods of construction	10
Passages, vaults, chambers, and pits.....	13
Steps and stairways	14
Structural forms not represented	14
Comparison	15
Fortifications	20
Comparison	15
Ceremonial structures	24
Tohua	24
Tohua on Fatuhiva	25
Tohua on Hivaoa and Tahuata	26
Tohua on Nukuhiva	27
Tohua on Uahuka	29
Tohua on Uapou	30
Comparison	30
Me'ae	31
Mortuary me'ae	32
Me'ae on Nukuhiva	34
Me'ae on Uapou	36
Me'ae on Uahuka	37
Me'ae on Hivaoa	37
Me'ae on Tahuata and Fatuhiva	39
Summary	40
Tokai	40
Places of circumcision	41
Sacred places of fishermen	41
Comparison	41
Mortuary structures	54
Mortuary practices	54
Comparison	62
Sculpture	70
Images	70
Wooden images	70
Stone images	74
Stone caps	79
Architectural figures	79
Detached heads	81
Altar stone and relief carvings	83
Significance and use of sculptures	85
Comparison	88
Petroglyphs	96
Comparison	99
Miscellaneous structures	101
Agricultural terraces	101
Ma pits	102
Ovens for cooking ti root	103
Archaeological survey	105
Foreword	105
Eiao	106
Hatutu	107
Motuiti	107
Nukuhiva	108
Uahuka	119
Uapou	120

Fatuhuku	136
Hivaoa	136
Mohotane	178
Tahuata	178
Fatuhiva	181
Bibliography	186

ILLUSTRATIONS

	PAGE
Plate I. Walls and quarry	187
II. Walls and platform	187
III. Pedestal, seats, coffin, and burial place	187
IV. Wooden figures	187
V. Wooden figures	187
VI. Stone figures, Puamau, Hivaoa	187
VII. Stone figures	187
VIII. Stone figures	187
IX. Stone architectural figures	187
X. Stone architectural figures	187
XI. Stone heads	187
XII. Stone carvings in relief	187
XIII. Petroglyphs	187
XIV. Petroglyphs	187
XV. Petroglyphs	187

	PAGE
FIGURE I. Drawings of petroglyphs at Hapatoni, Tahuata	97
2. Map of Nukuhiva	105
3. Plan of tohua of Ponaouoho, Nukuhiva	109
4. Plan of me'ae of Potekava, Nukuhiva	111
5. Plan of me'ae of Mahaiata, Nukuhiva	112
6. Plan of tohua of Nanauhi, Nukuhiva	118
7. Map of Uahuka	120
8. Plan of sacred place of fishermen, Hanei Valley, Uahuka	121
9. Plan of me'ae, Hanei Valley, Uahuka	122
10. Plan of tohua of Vaitukuhai, Uahuka	125
11. Plan of tokai of Anitahaana, Hane Valley, Uahuka	126
12. Map of Uapou	130
13. Plan of me'ae of Tapaipuoho, Hakahetau, Uapou	131
14. Sketches of bas-relief and incised carvings at the me'ae, paepae of Manui, Hakamoui, Uapou	133
15. Sketches of bas-relief on ke'etu at the paepae of Puheputoka, Moui Valley, Uapou	134
16. Sketch of back of a tiki house post at the paepae of Puheputoka, Hakamoui Valley, Uapou	135
17. Map of Hivaoa	137
18. Plan of community center, Taaoa Valley, Hivaoa	139
19. Plan of me'ae of Tetoautani, Atuona Valley, Hivaoa	144
20. Plan of me'ae of Muutea, Atuona Valley, Hivaoa	146
21. Plan of ceremonial structure, Tahauku Valley, Hivaoa	150
22. Plan of combined tohua and me'ae, Punaei Valley, Hivaoa	155
23. Plan of me'ae of Oipona, Puamau Valley, Hivaoa	160
24. Plan of me'ae of Pouani Valley, Puamau, Hivaoa	164
25. Plan of Meaefaua, Paumau Valley, Hivaoa	166
26. Plan of me'ae in Eiaone Valley, Hivaoa	169
27. Map of Tahuata	179
28. Map of Fatuhiva	182
29. Plan of tohua connected with me'ae of Pouau, Omoa Valley, Fatuhiva	183
30. Plan of me'ae of Vevau, Omoa Valley, Fatuhiva	184

Archaeology of the Marquesas Islands

By RALPH LINTON

INTRODUCTION

The Marquesas Islands offer few opportunities for archaeological research; both the geographic conditions and the character of the native culture are unfavorable. The islands are very mountainous and there are no coastal plains. The population is concentrated in narrow, steep-sided valleys whose bottoms are scoured by periodic floods. There are very few caves, most of the so-called burial caves being nothing more than recesses, sheltered from the rain by narrow overhanging ledges which are too shallow to afford much protection to their contents. Thus no opportunity was afforded for the gradual accumulation of stratified deposits and so far as known no kitchen middens or shell heaps exist in the islands. The natives used wood and vegetable fiber for fully ninety per cent of their artifacts, and were ignorant of the use of pottery. Their manufactured stone implements were comparatively simple and so highly prized that they were rarely discarded except when broken. The climate is unfavorable for the preservation of perishable materials, dry periods alternating with moist warm periods favorable for fungoid growths. In the burial caves, the offerings placed with the dead are much less numerous than in Hawaii. Most of them have been broken, probably with the idea of releasing the contents for the use of the departed spirit.

Since preliminary survey showed that little material or information was to be gained from excavation, my time was devoted to a study of the ancient structures and the rather numerous images and petroglyphs. All these remains, with the possible exception of one group of petroglyphs, are unquestionably the work of the ancestors of the present natives. Even the largest and most massive of the ancient terraces and platforms were built by methods in vogue fifty years ago and some of the finest of the stone images are known to have been made within the historic period. The older natives are familiar with the names and uses of the more important sites and some of the most extensive of the ceremonial structures have

been used within the memory of persons still living. The study of these remains can not be expected, therefore, to throw much light on the early history of the Marquesas Islands or on the order of arrival of the various waves of immigrants who have blended to form the historic population. No indications of a very early occupation of the group were found or of the presence of any people whose culture differed markedly from that of the historic inhabitants.

STONE CONSTRUCTION

The Marquesans possessed a surprising skill in stone construction. Although they built no single structure which equalled the finest of the Tongan burial places (*langi*) or the great marae of Oborea in Tahiti, the general excellence of their work places them in the first rank of builders. The visitor is amazed by the extent of their ceremonial structures, the size of the stones used, and the skill with which these have been placed and fitted. The construction of many of the ordinary house platforms could hardly be bettered by Europeans.

The wide use of rough stone construction in Polynesia makes it appear probable that the first settlers of the Marquesas brought with them some knowledge of the mason's art, but the high development of this art was due largely to local conditions. Most of the Marquesan valleys are narrow and steep-sided and contain practically no level ground. In order to obtain horizontal floors it was necessary either to support the entire structure on posts of unequal height or to resort to some form of artificial leveling. The Marquesans solved the problem by terracing. Simple earth terraces require constant attention and repair, and as all the Marquesan valleys provide an abundance of loose stone the building of retaining walls was an obvious step. Indeed, it is not improbable that the ancestors of the Polynesians were familiar with the construction of stone-faced terraces before their departure from their Asiatic or Indonesian home land. The experience acquired in the building of these terraces trained the natives in stone construction but such work did not stimulate the development of new architectural forms. The Marquesans never learned to build stone super-structures; they challenge admiration as masons, not as architects. Their structures, with the exception of enclosing walls, must be classed as substructures or foundations, and the most imposing sites prove to be simply collections of terraces and platforms.

WALLS

The Marquesans built good walls, but they did not excel in this form of construction. Their best walls are inferior in mass and in workmanship to those of the Hawaiians, probably because walls played a very small part in Marquesan sacred structures. The typical temple (*me'ae*) was either open, or surrounded by a fence of perishable material. Walls seen at a few sites were none of them high enough to conceal the ceremonies

from persons outside the enclosure; they seem to have been intended merely to mark off the limits or divisions of the sacred area. The outer boundary walls at several sites are barely two feet high, and the limits of one tapu ground are outlined by a single row of medium-sized stones.

Wall building, and indeed all sorts of Marquesan stone construction, reached its highest development in Nukuhiva. In this island most of the many miles of rough stone walls are simple enclosing walls intended to keep the pigs out of dooryards and gardens. Walls are least numerous but not uncommon in the island of Fatuhiva. For building walls, stones were obtained in the immediate neighborhood. Few of them are large. Cut stone seems not to have been used in walls in pre-European times. Ordinary walls were one stone thick and were laid up tier by tier, the upper surface of each tier being made as nearly level as possible before the placing of the one above. The native masons made no attempt to "break joints" and seem to have had no knowledge of the use of mortar. When stability was desired, a double wall was built, the two faces being laid simultaneously and tied together at irregular intervals by long stones. Very thick walls, which seem to have been used only for fortifications and ceremonial structures, were built with carefully laid up faces and with an interior fill of irregularly placed stones. Such walls grade into platforms, and it is difficult to determine to which class some of the structures in the assembly places (*tohua*) should be assigned. Battered walls are very rare in the Marquesas; the only one seen is in a fort in Hanemenu Valley, Hivaoa. (See page 175.) This wall is vertical on the inner side and battered on the outer side, the battering being nearly uniform for the entire height. Porter (32, p. 107)¹ mentions a battered wall in a fortification in Taipivai, Nukuhiva. It is an interesting fact that very few walls or enclosures made of large slabs set on edge are known in the Marquesas.

TERRACES AND PLATFORMS

The Marquesans excelled in the construction of terraces and platforms. These two structural types are considered together, for locally there is no clear line of demarkation. Both secular and religious structures show all gradations from simple terraces, faced with stone on the down hill side, to platforms with tops several feet above the ground at the lowest point. All platforms and terraces are quadrangular; most of them as nearly rectangular as could be expected in structures built without accurate measuring instruments.

As all the native houses were rectangular, this shape was appropriate

¹ Numbers in parenthesis refer to Bibliography.

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. Old house sites show all steps in a possible evolution of the platform from the terrace. The first step was apparently the digging of a trench across the rear of the terrace to carry off flood water from the hill above. Then the outer side of this trench was faced with stone to prevent the water from undermining the house floor. This seems to have been followed by a gradual building up of the house floor into a fully developed platform.

KINDS AND SOURCES OF MATERIAL

In the construction of terraces and platforms both rough and cut stone were employed, but in pre-European times the natives seem to have maintained a sharp line of demarkation between the two materials. The cut stone was used in the form of rectangular slabs, and the partial dressing of irregular stones to permit of more accurate fitting seems to have been unknown. In many structures both rough and cut stones were used but each had its prescribed place.

In selecting uncut stones for building, preference was given to water-worn boulders, probably because their smooth surfaces permitted closer joining and gave the finished work a neater appearance. In well built house platforms different materials were employed in different parts of the structure (27, p. 273). The terraces and platforms of many sacred structures were paved with pebbles from the seashore. To transport this material to sites several miles inland and at high elevations must have entailed great labor. The bulk of the rough stone used in both secular and religious structures was usually obtained close at hand, but a small temple in Taiohae Valley, Nukuhiva, is built of large fragments of red tuff, a material commonly used for stone slabs but rarely in a rough state. There is no outcrop of tuff in the immediate neighborhood. The stones, some of which are of considerable size, must have been brought nearly a mile and a half over a rough steep trail.

Many of the stones in ceremonial structures, and even in the dwelling platforms of chiefs and important persons, are of surprising size and weight. The most massive native construction seen is a platform in the *tohua* of Uahakekua (p. 114) (Pl. I, A), which includes boulders weighing from three to ten tons. To transport and place such masses of rock was an engineering feat of no mean order. At Uahakekua the slope of the ground was in the builders' favor. The material seems to have been obtained from a place some distance above and behind the platform. According to the

natives, stones too large to be easily carried were rolled to the structure by means of levers, and those of the lowest course were placed and aligned by the same simple method. An incline of rough stone was then built against the face of the platform, and the stones of the second or successive courses were rolled up the incline by prying and blocking. Informants insisted that the incline was not earth covered, as a rough and irregular surface prevented the rock from slipping back and gave better hold for the levers. Skids seem not to have been used in the handling of rough stone. I had many opportunities to observe the skill with which the natives use levers when called on to turn or erect fallen statues, and I believe that any of the rough stone structures now in existence in the Marquesas could have been built by this method. The ancient builders had an abundance of labor, and time was no great object to them. It can not be insisted too strongly that, in spite of the great extent of some of the sites and the huge size of the rocks used, there is no mystery as to the origin of the ruins found in the Marquesas. The names and histories of many of the sites have been forgotten in the destruction and shifting of tribes and in the general breakdown of the old culture, but everything indicates that all the remains are the work of Polynesians who did not differ fundamentally from the present natives.

It is rather surprising to find the structural use of cut stone highly developed among a people otherwise as primitive as the Marquesans. The varieties of rock cut for building purposes naturally depended somewhat on those locally available, but it seems safe to say that the harder igneous rocks, such as lavas and basalts, were never used for this purpose. Coral rock, the material most commonly cut in other parts of Polynesia, is quite rare in the Marquesas. Small ledges appear in a few valleys, but the only dressed slabs of this material seen were in some sacred places in southern Hivaoa. The favorite stone was a rather coarse grained red tuff, the native name for which, *ke'etu*, is also used as a generic term for all cut stone. A light grey tuff of somewhat finer grain was also extensively used in Nukuhiva and in the valley of Puamau, Hivaoa, but seems to have been rare elsewhere. Many of the valleys contain outcrops of these easily worked materials.

There are numerous quarries in the islands. One at Hakahetau, Uapou, is shown in the Plate I, C. Two quarries in the valley of Puamau, Hivaoa, may be taken as typical for description (Pl. VI, C and p. 164). One of these, which supplied stone for secular structures, has been worked intermittently until comparatively recent times; the other, used only as a source of stone for images and temples, was abandoned at an early date. Although no implements were found, the nature of the tool marks left on the rock

bore out the informant's statements that the work was done with narrow-bitted adzes, not picks. The quarry contains at least one unfinished image and several slabs in various stages of completion. There are no indications that metal tools were even used here.

The primitive quarrying methods seem to have been as follows:

When possible, a perpendicular or steeply sloping rock face was selected. The quality of the stone was first tested by sinking a few holes six to eight inches in diameter and about one foot in depth. The slab was then outlined by markings on the rock face, and grooves four to six inches wide were cut along all sides. Most of the grooves seen in quarries where the work had not progressed beyond this stage are of nearly uniform depth and it seems probable that several men worked at the cutting simultaneously. The grooves were sunk to a depth slightly greater than the thickness of the proposed slab. Those at the top and sides were widened to permit of undercutting, and the back of the slab was gradually detached from the rock, working principally from the top. Beds from which slabs have been removed show tool marks over their entire surfaces, indicating that the slabs were hewn out bodily, not split off. When the slab had been detached, its front and edges were dressed on the spot. The back was usually left rough. The finished slab was flat on the outer face and of uniform thickness at the top and sides, but thickened gradually toward the center and bottom. The method of dressing was practically the same as that used for wooden planks. The tool marks are still clearly visible on some slabs, but as a rule the adzing was followed by a final rubbing with blocks of hard stone of progressively finer texture. In this rubbing, the surfaces of the slab were made as nearly flat as possible, and the edges ground at right angles to the face. Rounded angles appear only in poorly made or weathered specimens and seem never to have been intentional. The finish of the rubbed slab naturally depended largely upon the texture of the tuff used. Much of the red variety is coarse and uneven in grain, with small flinty inclusions, and slabs made from it show a rougher surface than those made from the grey tuff. No slabs which showed a true polish were seen.

Rarely, the finished slabs were ornamentally adzed or chiseled. The designs were limited to the face, and consisted of simple lines or herring-bone patterns. It is impossible to say whether this work was done at the quarry or after the slabs had been set in place. On the islands of Hivaoa and Tahuata, many of the slabs in ceremonial structures are decorated with carvings in high relief. To provide for this, projecting blocks were left on the face of the slab at the time it was quarried, but the figures were carved after the slab had been transported and placed.

Although the slabs cut by the Marquesans cannot compare in magnitude with those in the Tongan *langi*, some of them are of considerable size. One measures 12 feet, 4 inches long; 8 inches thick at the top; and 3 feet, 6 inches wide. It is possible that there are still larger slabs at some of the sites not visited, but it is safe to say that those exceeding 7 feet in length are exceptional. Slabs as much as 4 feet long and 30 inches wide are still used by the natives for building tombs. For transportation the slabs are slung from a stout pole and carried bodily by bearers, who walk in single file, resting the pole on their shoulders. The tuff of which the slabs are made is light and more than six bearers are rarely required. None of the very large slabs have been transported in recent times, but it is probable that the present method was used in ancient times. The levering method used for large rough stones could not be employed with the slabs, as the soft tuff is easily scarred. In country as rough as the Marquesas, transportation on skids or rollers would have been impossible without the construction of graded ways, and no traces of such ways were seen either at the quarries or in the neighborhood of ceremonial structures. It seems probable, therefore, that, where the slope was not too steep, even the largest slabs were carried bodily. In some quarries located on very steep hill-sides, skids were probably employed for lowering the slabs to level ground. Ropes, held from above, would serve to brake the descent. Once on the level, the main difficulty involved in carrying the slabs would lie in the construction of a frame strong enough to bear the weight and large enough to provide grips for a great number of bearers. Handy reports that for transporting food in certain ceremonies the natives made frames which were carried by sixty men. There are few cut stones in Marquesan structures which would have required more than that number of carriers.

METHODS OF CONSTRUCTION

The methods of using rough stone and cut stone were quite distinct. In building terraces or platforms of rough stone, the rocks were, as a rule, laid in level courses (Pl. II, *A*). True cyclopean masonry is rare. The only structure seen which was built entirely by this method is a large terrace of unknown use in the valley of Puamau, Hivaoa. Most cyclopean construction is included in structures built principally of "coarse masonry" and were probably accidental. Nothing resembling the peculiar crib work of the Ponape ruins was observed in the Marquesas.

As far as known, no Marquesan terraces and platforms were built of solidly laid up stone. They consist of retaining walls which enclose a fill of irregularly placed stones and earth. In a few terraces stones alone

seem to have been used as fill. The building of the walls and the filling of the enclosed space were carried on simultaneously. The natives had not discovered the art of jointing masonry; the stones in most retaining walls were laid with the largest side out, being held in position by the weight of the fill. As a result, the construction, although massive, was not strong. The outer faces of the walls in most terraces and platforms were vertical or nearly so, but a few show a distinct battering, a method of construction which seems to be limited to high terraces built on steep slopes and was evidently intended to increase their stability. The battering was produced by setting each course of stones a few inches back of the edge of the course below. In most terraces this method was limited to the lower courses; no terraces were seen in which the battering extended to the top.

Even some of the rough stone masonry reveals attempts at ornamentation. In the wall of a platform in Hanemenu Valley, Hivaoa (Pl. II, *B*) the larger stones are almost black. In the interstices, pebbles whitened by a coralline incrustation have been inserted. Many of these pebbles can easily be removed with the hand, and according to the natives their purpose was purely ornamental.

Cut stone was more extensively used in the Marquesas than in any other part of Polynesia for which there are records. It was commonly used in house platforms, and formed a part of most ceremonial structures. In spite of its universal occurrence there are well marked local differences in the extent to which it was employed and in the skill with which the slabs were cut. Stone cutting reached its highest development on the island of Nukuhiva and on the northeastern coast of Hivaoa. In these localities cut stone seems to have formed a part of all well built house platforms and of most ceremonial structures. In Uahuka and Uapou stone cutting was also well developed, although the use of slabs in secular structures was less common than in Nukuhiva and Hivaoa. On the southern coast of Hivaoa, and in Tahuata, cut stone was commonly used in ceremonial structures but rather rarely in house platforms. In Fatuhiva, its use seems to have been limited to ceremonial structures and the few examples seen indicate that the art of stone cutting was poorly developed. In general it may be said that the use of cut stone and the skill of the stone cutters, show a steady decline southward from Nukuhiva. In several of the islands are valleys in which cut stone seems to be entirely absent. In one valley on Uapou the use of cut stone was tapu, and its absence elsewhere may be due to the same cause.

Very few prehistoric structures are built exclusively of cut stone, but the combinations of rough stone and cut stone all follow a few definite

patterns. It seems to be a rule that when the two materials are used simultaneously the division between them is a horizontal one, the rough stone being above or below the cut stone. No sections of cut stone construction alternating with sections of rough stone construction were seen, and only one slab of cut stone set in a rough stone wall was observed. It is not uncommon, however, to find one side of a terrace or platform built of cut stone and the other sides of rough stone. Nearly all of the cut stone slabs are rectangular. Departures from this shape seem to have been accidental and due to unskillful work on the part of the quarrymen. The slabs are used in two ways. In one method of construction, which is practiced in all the islands, the slabs are set on edge to form a facing for the platform or terrace. The lower edges of most of the slabs are so deeply bedded that it seems probable that they were set upright in a trench dug along the line of the proposed wall. In a few walls, however, the slabs seem to have been set on the surface of the ground, and in one structure they rest upon a boulder pavement which is covered by less than three inches of earth. Many slabs were cut so that they thickened toward the bottom, and those which were not embedded were probably wide enough at the base to stand upright without support. Although the successive stages of many stepped platforms or terraces are faced with slabs placed vertically, no structures were seen in which one tier of vertical slabs had been directly superposed upon another.

In Nukuhiva another method was used. The front walls of some house platforms contain one or more courses of slabs laid horizontally. Where only one course is present, it is usually about two feet below the top of the platform. Only slabs of red tuff seem to have been used in this way, and as the rough stones of which the remainder of the wall is built are black or dark grey, the cut stone course, seen from a little distance, gives the effect of a red band or stripe. In a few Nukuhivan house platforms the top of the front wall is finished with a course of horizontal slabs. It is a curious fact that the use of horizontal slabs seem to have been limited to secular structures and was not observed in any of the *me'ae*.

Low steps of rough stone built against the bottoms of slab faced walls are common (Pl. II, C), but no walls were seen in which courses of rough stone had been placed below vertical slabs. The tops of many slab walls are finished with one or more courses of waterworn boulders (Pl. II, D). In the best examples of this form of construction the boulders are carefully matched in size and rest in shallow depressions cut in the tops of the vertical slabs. A similar method was followed in the building of many marae in the Society and Austral islands, and as such boulder-topped walls seem to be much more common in Hivaoa and Tahuata than in

Nukuhiva, it is possible that their presence in the Marquesas is due to an influence from the south.

PASSAGES, VAULTS, CHAMBERS, AND PITS

Practically all Marquesan terraces and platforms are solid. As far as I know, the *tohua* of Nanauhi in Hatiheu Valley, Nukuhiva, is the only structure in the islands which contains a passage or chamber. (See fig. 6, 24.)

The natives consider this passage a great curiosity; none of them know of a similar feature elsewhere, and are uncertain as to its use. One informant suggested that it might have been used as a tomb. Another informant who had a good knowledge of the use of other parts of the structure said that the young people retired into the chamber for sexual intercourse when dances were being held on the *tohua* above. It seems improbable that so much labor would be expended on a passage for this purpose alone. The passage was probably designed as a drain, other uses being secondary. There is a deep ravine, evidently much older than the *tohua*, below the outer end of the passage, while a smaller ravine leads down to its upper end. It seems probable that the *tohua* was built across a ravine and that the natives, confronted by the problem of carrying off the water which ran down in wet weather, hit upon the plan of a tunnel. At the time the site was visited, parts of the passage were almost choked with earth and small stones which had been washed in from the upper end, and pools of water stood in depressions of the floor.

A manuscript written by one of the early Catholic missionaries to Uapou contains the statement that the bodies of priests (*tou'a*) were first mummified and then placed in a deep pit, and that "Often from this pit departed an underground vault at the end of which was another pit at the bottom of which was found another vault." Pits running down through the stone work to the original ground level are a common feature of Marquesan temple, but none of those examined appear to have vaults connected with them. Such pits seem to have been much less common on Uapou than on Nukuhiva and it seems probable that burials of the sort described in the manuscript were made in the earth, not within the platforms. The stiff clay soil of the Marquesas renders the building of such temporary vaults and pits easy.

Pits are found in many Marquesan temples, but are most common in Nukuhiva, where they seem to have been a nearly constant feature of the normal temple structure. All the pits seen run down to the original ground level, and undoubtedly were made at the time the platforms or terraces containing them were built. Most of them are faced with rough stone, but

a few of the shallower ones seem to have been faced with vertical slabs of cut stone. An interesting departure from the ordinary form was seen in a platform connected with the *tohua* of Pehekua in Taipivai Valley, Nukuhiva. (See page 115.) The pits in temples 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.

STEPS AND STAIRWAYS

True stairways with regularly arranged steps seem to be lacking in the Marquesas, but a few ceremonial structures contain series of low platforms which seem to have served for approach. A good example of this form of construction was observed in the *tohua* of Nanauhi. (See page 117.)

The remains of what may have been a true stairway were seen by Handy, in the *me'ae* of Tapaipuoho, in Hakahetau Valley, Uapou, but the structure is so badly broken that certain identification is impossible. (See page 129 and fig. 13.)

Some platforms in ceremonial structures are provided with what, for lack of a better term, may be called steps. These consist of long stones set in the facing walls in such a way that they project for several inches and provide a foothold. The only steps of this sort seen were in Hivaoa, but from native accounts they also appear on Uapou and probably on the other islands. Ordinary house platforms seem to have been provided with neither steps nor stairways in pre-European times. Most of them were low enough to be scaled without difficulty; those over three or four feet in height were provided with ladders made from notched logs.

STRUCTURAL FORMS NOT REPRESENTED

The absence of specific structural forms is of considerable interest to those engaged in comparative study and it seems well to point out that certain features present in the stone work of some other Polynesian groups are lacking in the Marquesas. Enclosures of uncut slabs set on edge, and the use of such slabs as facing for terraces or platforms, seem to have been rare in pre-European times. Building stone apparently was never cut in forms other than the rectangular slab. Pyramidal structures, truncated or otherwise, seem to be entirely lacking. The nearest approach to the pyramidal form is represented by certain platforms faced with cut stone whose bottoms are surrounded by a low continuous step. The tops of many platforms are built in two and even three levels, but the ends and backs of all such structures seem to have been vertical. There appear to

be no trilithons in the Marquesas, and no structures even remotely resembling the Fale o le Fe'e.

COMPARISON

Stone construction of one sort or another appears to be almost universal in Polynesia and Micronesia. In Melanesia, however, it is limited to a few localities. It is well developed only in Fiji and the Banks Islands, but is found here and there in the Torres Islands, the New Hebrides, and on Ysabel in the Solomon Islands (34, p. 427-8). It should be noted that these localities are on the eastern edge of Melanesia and the use of stone may be due therefore to Polynesian or Micronesian influences. Rivers (34, p. 427-8) says that the stone structures on Santa Maria, Banks Islands, are ascribed by the natives to the Mala-vui or Malatuniun, ancient beings who were only semi-human. These names bear at least a superficial resemblance to the Hawaiian term, *menehune*, applied to a mythical race of dwarfs to whom were ascribed some of the largest stone structures in Hawaii.

The use of rough stone shows a much wider distribution than that of cut stone, and it seems safe to say that with the possible exception of Chatham Islands some form of rough stone construction appears everywhere in Polynesia and Micronesia. Even in New Zealand, where stone construction is rare, there are a few extensive structures. Tregear (43, p. 302) mentions stone forts in North Island and South Island, and forts, enclosures and stone faced terraces on Great Barrier Island.

Ordinary rough stone construction in Polynesia seems to be of the type normal in the Marquesas. Although information from several areas is lacking, this conclusion is borne out by observations in the Society and Hawaiian islands and by published photographs of structures elsewhere. However, additional types of construction are found in certain localities. Uncut slabs used for facing terraces and platforms seem to be rather common in Hawaii and also in Easter Island. Ahutepeu, on Easter Island (35, fig. 37) is a good example of this form of construction except that many of the smaller stones used above and between the rough slabs are cut. Enclosures of uncut slabs set on edge are found in some of the Austral Islands (36, p. 445) and possibly in Hawaii. It is interesting that the Fijian sacred enclosure (*nanga*) was built of large uncut slabs set on edge (11, p. 15).

It seems doubtful whether stone cutting was practiced in Melanesia, although some Fijian sacred stones may be artificially shaped. Pritchard (33, p. 363) says, "Most of these stones are of a peculiar shape, oblong and slightly rounded at the upper end." In Micronesia the use of cut stone is

recorded from Pelew (46, p. 308) and from Yap (15, p. 22-23), but I have found no specific mention of its use in the Marshall Islands. Slabs, upright stones, and stone house posts are mentioned by so many visitors to the Gilbert Islands that it seems probable that at least some stones in these islands were artificially shaped.

Stone cutting in Polynesia is rather puzzling in its distribution. In Tonga it seems to have been highly developed, but in closely related Samoa the only known example is the *Fale o le Fe'e*. I find no record of it in Niue or the Cook Islands and it is rare in the Austral Islands. In New Zealand cut stone seems not to have been used structurally, but the art of stone cutting was familiar to the Maori of Lake Roturua (8, pp. 134-9). In Hawaii the use of cut stone was exceedingly rare, but the few examples known show that its neglect was not due to lack of skill in the mason's art. Extensive structures of cut stone are recorded from Malden (5, p. 205) and Fanning islands (21, vol. 15, p. 124), although these were uninhabited at the time of their discovery and are too small to have ever supported a large population. In the Marquesas, Easter Island, and the Society Islands cut stone was extensively used; also to some extent in Mangareva (31, p. 94).

Two, much discussed structures, the Tongan trilithon and the Samoan *Fale o le Fe'e* deserve special mention. The superficial resemblance of the trilithon to some of the European megaliths is noted by many writers and is emphasized by the believers in a wide spread heliolithic culture. The trilithon differs from the European megalithic structures, however, in having the crosspiece deeply socketed into the uprights. It is like no structure in Oceania. Dr. A. B. Lewis tells me that the trilithons of the Banks Islands are small low structures of uncut stone and it seems probable that the Tongan trilithon represents a purely local development. This conclusion is borne out by a Tongan legend collected by McKern (29a). According to this legend, the trilithon was erected by a Tui Tonga who had two sons of nearly the same age. Fearing that on his death they would fight for the succession, he had the two pillars set up, one for each son, and firmly bound together by the great crosspiece. Although legendary explanations must be accepted with caution, such an act is in accord with many widespread beliefs in associative magic.

The *Fale o le Fe'e* has excited almost as much interest as the trilithon and, like it, is the solitary example of its type in Polynesia. The best description of this peculiar structure is given by Pritchard (33, pp. 119-21), who concludes that it was the framework of a house of ordinary Samoan type in which the posts and rafters are made of stone instead of wood.

Turner (45, p. 298) in a description of Peru, one of the Gilbert Islands, says:

On giving up heathenism a number of large temples were burned, leaving the stone pillars standing on which the roof rested. These upright stones, four or five feet in height, and from ten to twenty in number, according to the size of the house, reminded me at first of a burying ground and then of Druidical times. Beams were laid horizontally along the top of these pillars, and from these beams the rafters ran up toward two or three center posts supporting the ridge pole.

It is well known that there was considerable intercourse between Samoa and the Gilbert Islands in ancient times, and it seems probable that the builders of the Fale o le Fe'e borrowed the idea for this structure from the Gilbert Islanders. The trilithon and the Fale o le Fe'e seem to be unique as far as Polynesia is concerned and they will be ignored in the general discussion of Polynesian cut stone construction.

The use of rectangular slabs set on edge to form a facing for terraces or platforms seems to be almost universal in those localities where cut stone is employed in construction. No other method of building is recorded from Hawaii, Malden Island, Fanning Island, and Tonga. In the Marquesas it is employed almost exclusively, the horizontal use of slabs being restricted to a few structures on Nukuhiva. In Gambier Island slabs are placed both horizontally and vertically and blocks are also used (2, vol. 1, pp. 125-26). In Easter Island the shapes in which stone was cut and the methods of building with cut stone seem to vary more than in any other part of Polynesia. The landward sides of the main mortuary platforms (*ahu*) are faced with finely cut slabs placed vertically, but the seaward walls seem to have been built in several ways. Two of these walls shown by Routledge (35, figs. 37 and 42) are built of combinations of large unhewn slabs set vertically and small hewn blocks. In a third structure the seaward wall is built of two courses of large, finely wrought rectangular blocks or slabs. Long bars of stone, cut like curbstones, are employed as house foundations. In the Society Islands a distinctive type of cut stone construction seems to have been developed. The lower courses of the walls or platforms are made of finely dressed rectangular blocks of coral, above which are placed several courses of what might be called artificial bowlders. In the Tahitian sites visited these artificial bowlders are in the form of short bars, of rectangular cross section, with rounded outer ends. They were laid with the long axis across the wall, rounded ends out, and from a little distance give the effect of carefully laid waterworn stones of uniform size. Their construction recalls the Marquesan practice of placing one or more courses of waterworn bowlders above the slabs in walls, (p. 12) and the two forms of construction are evidently related. It would

seem probable that the Marquesan form is the earlier and that the Society Island type is a relatively late development from the slab and boulder form, but information from the Society Islands is too meager to determine whether slab and boulder structures are represented there. In the Austral Islands the use of cut stone seems to have been rare. Routledge (36, p. 445), mentions a partly cut slab in a structure on Tubuai and "a curb of wrought bars of red tuff above 2 or 3 feet in length and 9 inches in width and the same in depth" in a marae at Raivavae (36, p. 447).

Present imperfect knowledge makes it quite impossible to determine the origin of cut stone construction in Polynesia. Cut stone is practically indestructible and even if the historic inhabitants of an island had ceased to use it, its presence can hardly fail to be recognized. Its recorded distribution is such that it can not be considered as an original feature of either the marginal or the central group of cultures. A good case can be made out either for its independent origin in several localities or for its dissemination from a single source.

The evidence in support of the theory that cut stone construction was disseminated through Polynesia as a developed art is as follows:

1. The nearly universal use of the rectangular slab form, and of the method of placing such slabs vertically.

2. The remarkable resemblances which exist in the cut stone construction of widely separated localities. For example, McKern describes the corner slabs of most Tongan burial structures as cut in L shape so that the juncture between them and the slabs of the adjoining side do not come at the corner but a short distance back from it. An identical form of corner slab appears in a large stone structure on Fanning Island (21, vol. 15, p. 124).

3. The apparent lack, in most of the islands for which information is available, of structures which show a transition from the use of uncut to cut stone. McKern (29a) states that the *langi* which stands earliest in the genealogical series is the best built, and that later structures show a steady decline in excellence. In the Marquesas the line of demarcation between cut and uncut stone is so sharp that it seems inconceivable that one could have been developed from the other locally.

4. McKern (29a) records legendary evidence that a foreign chief arrived in Tonga in the reign of the builder of the first *langi* and introduced certain innovations into the culture, although the use of cut stone is not mentioned among these.

The evidence in support of the theory that cut stone construction was developed independently in the various groups may be presented as follows:

1. The occurrence in the Society Islands and in Easter Island of forms of cut stone construction not found elsewhere.
2. The apparently independent development of stone cutting in the Lake Rotorua region of New Zealand, where there are deposits of easily worked tuffs.
3. The fact that, before the building of stone faced *langi* was begun, the Tongans employed earth mounds containing stone vaults. McKern (29a) has suggested that the natives may have developed the art of stone cutting in connection with their construction.
4. The close correspondence between the methods used in wood working and stone dressing in the Marquesas. In these islands the large stone images are unquestionably derived from wooden prototypes, and although hardly probable, it is not impossible that the stone slabs also are imitations of wooden planks.

The New Zealand stone cutting seems to indicate that where easily worked material is available, the art might develop spontaneously. It should be noted, however that New Zealand stone cutting was not associated with stone construction, and it is in the construction that the most striking resemblances between widely separated localities are found. It seems probable that the use of rectangular slabs set on edge was disseminated through Polynesia either from some one point within that area or from some external point. The variations from this form of construction which appear in the Society Islands and Easter Island apparently mark local developments. An alternative explanation is that the art of stone cutting was developed independently in several different localities and that the peculiar method of placing the slabs on edge was derived from some older method of facing structures with uncut slabs or with wooden planks. Such use of uncut slabs seems to have been not uncommon in Hawaii, but was rare in those localities where the use of cut stone was highly developed. The use of wooden planks as facing for structures has not been recorded, but Cook (7, vol. 3, p. 209) says that in many of the sacred structures seen by him on Tongatabu "the mounts were pallsadoed around, instead of a stone wall."

If the rectangular slab form of construction originated in some one of the Polynesian islands and spread from it to the others, the originating group cannot now be determined. If an extra-Polynesian origin for this form of construction is sought, the nearest region is the central Carolines. It is difficult to see how it could be carried from that group to Polynesia without also reaching the Marshall and Gilbert islands. It is absent in Melanesia, and if it is of extra-Polynesian origin, its source must be sought still farther west, in Indonesia.

FORTIFICATIONS

The use of fortifications was less highly developed in the Marquesas than in some other parts of Polynesia. There seem to have been no defenses of any considerable size, and the systematic fortification of whole towns was probably unknown. The forts seem to have served as places of refuge or to have been designed to cover the approaches to a valley. Many of them were in almost inaccessible positions and so long as food and water held out must have been impregnable to any people not possessing firearms.

Both stockades and stone forts were used, but all the stockades have completely disappeared. Indeed, they seem to have become obsolete shortly after the introduction of firearms. The best description of the old stockaded forts is that given by Porter (32, p. 82). He says:

Gattanewa, I was informed at the time of my landing, was at a fortified village which was pointed out to me, on the top of one of the highest mountains. They have two of these strong places, one on the top of the aforesaid mountain, the other lower down the valley and guarding one of the principal passes. The manner of fortifying these places is to plant closely on end the bodies of large trees, of forty feet in length, securing them together with pieces of timber strongly lashed across, presenting on the brow of a hill difficult of access, a breastwork of considerable extent, which would require European artillery to destroy. At the back of this a scaffolding is raised, on which is placed a platform for the warriors, who ascend by means of ladders, and thence shower down on their assailants spears and stones. The one at which Gattanewa now was, is situated near a remarkable gap, cut through the mountain by the natives, to serve as a ditch or fosse, and must have required much labor in the execution.

The structures described by Porter were in Taiohae Valley, but essentially similar forts seem to have been used throughout the Marquesas. Porter was certainly in error in referring to these stockades as "fortified villages," if this term implies that they were places of permanent residence like the Maori *pa*. Some of them at strategic points were probably held by permanent garrisons, and the chief of Unauatikua, a tributary valley of Atuona, Hivaoa, is said to have lived constantly in a fort, but none of the forts whose sites were visited were large enough to have served as regular residences for more than a small part of the tribe. Porter probably exaggerates also in assigning a height of forty feet to the palisades.

Trenches formed an important feature of the defenses of some of the stockades, but do not seem to have been used in connection with forts built of stone. The geographic conditions led to the development of a peculiar

form of intrenchment. Most Marquesan ridges are knife edged, with sides so steep as to be almost unscalable and most of the stockades were built on the tops of such ridges. Their intrenchments consisted of deep straight sided ditches cut through the ridge. From one to four trenches were dug. The most elaborate system of intrenchment seen is on the ridge between Puaei and Unauatikua, two branches of Atuona Valley, Hivaoa. (See p. 143.)

In their warfare the natives seem to have made occasional use of trenches without stockades. In some localities deep gaps were cut through knife-edged ridges to serve as a sort of primitive artillery position in which large stones could be stored and from which defenders could, under cover, annihilate enemy forces coming up the valleys on either side. Concealed trenches were also dug in which a defending force could lie in wait to take an enemy in the flank or rear, or into which an attacking party could be lured and its members speared as they tried to climb out.

Stone forts were probably used throughout the Marquesas and continued in use until the pacification of the islands by the French. Many of the newer forts are loop-holed for musketry. The best preserved fort seen is in Hanamenu Valley, Hivaoa. (See p. 175.) In historic times this valley was occupied by two mutually hostile tribes. The tribe to whom the fort belonged held the mouth of the valley, its site evidently chosen with a view to escape by sea if they were too hard pressed by the enemy holding the upper part of the valley. The fort is situated on the shore, at the western end of the beach and immediately above the point where the waters of a large spring flow into the sea. Behind it is a steep talus slope, covered with large rocks, which run up to a perpendicular cliff. In case of defeat the men in the fort could cover the retreat of the rest of the tribe to the boats. The position is admirably chosen for defense against enemies coming from the sea also, as landing parties would be exposed to an enfilading fire.

In Hanapeteo Valley, Hivaoa, is a stone fort of somewhat different type. (See p. 174.)

What seems to have been an unusually elaborate stone fort in the valley of Taipivai, Nukuhiva, has unfortunately been destroyed. It is described by Porter, as follows (32, p. 107):

I had never supposed them capable of contriving a work like this. It formed the segment of a circle and was about fifty yards in extent, six feet thick at the bottom and gradually narrowing at the top to give it strength and durability. On the left was a narrow entrance merely sufficient to admit of one person entering, and serving as a sally port. But to enter this it was necessary to pass directly under the wall for one half its length as an impenetrable thicket prevented the approach to it in any other direction. The wings and rear were equally guarded,

and the right was flanked by another fortification of greater magnitude and equal strength and ingenuity.

The natives of Taipivai seem also to have made use of temporary defenses of stone for Stewart says (40, p. 314):

They (the Taipis) had been busily engaged in throwing up a breastwork of stone across the front of the valley, which they pointed out, as some little defense, in the onset of our invasion.

Some Marquesan fortifications possess an enclosure, with walls 4 to 5 feet high, large enough to accommodate only one or two persons. This enclosure was usually built in the safest part of the fort and in it the chief is said to have taken refuge during an attack. All informants agree that the person of the chief was carefully shielded and that he was not expected to take an active part in the defense.

COMPARISON

Most Polynesians seem to have built fortifications of one sort or another. Such defensive works reached their highest development in the well known Maori *pa* (fort). In Tonga the art of fortification had also been brought to a high degree of excellence. As described by Mariner (29, vol. 1, p. 90) the Tongan forts were strongly reminiscent of those used in Fiji. They consisted of ditches and palisades. The posts of the palisades were about 10 feet high and were placed 18 inches apart, the spaces between them being filled by interwoven reeds. Over the entrances and projecting over the walls at intervals of about fifteen feet platforms were built and enclosed with woven reeds, with loop holes for archers. Stone fortifications seem not to have been used. The use of woven reeds is not recorded elsewhere in Polynesia and is probably due to Fijian influence. In Samoa both palisades and stone fortifications were employed, but there seem to have been no fortified towns. Pritchard (33, p. 70) says:

The fortification consisted of cocoanut logs placed upright, about ten feet above ground and two feet under, backed by logs of other trees. Between the logs the defenders could fire, under shelter. . . . Immediately around the fort was a ditch about twelve feet wide.

Brown (4, p. 171) says: "Forts were made of stones when they were obtainable, and generally consisted of a dry stone wall of from four to six feet high," and adds that the people of Manono had surrounded their entire island with a high defensive wall five miles long. The Cook Islanders, in spite of their incessant intertribal wars, seem to have made no use of fortifica-

tions, and no such defenses are recorded from Niue. The natives of the Society Islands also made little use of fortifications, although Ellis (9, vol. 1, p. 300) says that they sometimes walled the mouths of narrow valleys, and further protected the entrances by wooden platforms. The only defensive works recorded from the Austral Islands are the remarkable hill forts of Rapa. These are terraced hill tops, with occasional stone breastworks and ditches. Like the Marquesan forts, they served only as places of refuge (36, pp. 454-5). Fortifications seem not to have been used in the Tuamotus, in Mangareva, or in Easter Island. In Hawaii fortifications were not numerous, but some use seems to have been made of stone breastworks. Emory (9a, p. 75) describes deep trenches cut through ridges, which were used as positions from which stones were rolled into the valley below. Palisades seem to have been unknown.

The distribution of fortifications in Polynesia is such that they can not be said to belong specifically to either the marginal or the western groups of cultures. In Melanesia stockades appear in interior New Guinea, in New Britain, possibly in the Solomon Islands and reach their highest development in Fiji. Stone fortifications, with the exception of the peculiar "artificial islands" and the few isolated walls in the Solomon Islands, seem to be lacking in Melanesia outside of Fiji, and are unusual even there. In Micronesia stockades seem not to have been employed except in one or two islands of the Gilbert group but stone fortifications are reported from Ponape and some of the remarkable ruins in that island probably should be classed as defenses.

While a thorough comparative study of fortifications in Oceania might bring out some interesting points, it probably would not contribute greatly to the solution of the problems of Pacific migrations. A people at peace have no need of defenses and soon lose all knowledge of fort building, while one constantly menaced by enemies is likely to develop some system of fortifications even if previously unfamiliar with anything of the sort.

CEREMONIAL STRUCTURES

In the Marquesas are two main classes of ceremonial structures, the *tohua* and the *me'ae*, and each class shows a remarkable diversity of form. No two ceremonial structures in the islands are identical in their proportions or even in the arrangement of their elements. The *tohua* most nearly approach uniformity, as most of the structures found on a given island resemble each other sufficiently to permit of the establishment of local type. The simpler of the Nukuhivan *me'ae* also have many elements in common and may be said to constitute a type, but the more elaborate of these and the *me'ae* found on the other islands are so variable as not to permit of classification.

TOHUA

The Marquesans applied the name *tohua* or *taha ko'ina* to the tribal assembly places at which feasts were given and certain classes of ceremonies performed. Although sometimes the scene of public religious rites, the *tohua* were essentially secular and could be visited by all classes of the population. Each tribe possessed at least one *tohua* which was considered the hereditary property of its chief. In valleys containing several tribes there were usually one or more main *tohua* which, although their ownership was vested in the chief of one of the tribes, were considered as more or less common property and were used for fêtes in which all the tribes participated.

Tohua were built in honor of young living chiefs and, according to Handy (19, p. 205), as part of the rites for the deification of dead chiefs and priests and were named for the person honored. The work of construction was done by a single tribe or by contingents from several tribes. The laborers were organized and fed by the chief and were given gifts at the completion of the work. When the structure was finished a feast (*ko'ina*) was served as a dedication ceremony.

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. Naturally level ground was utilized when practicable but usually a flat area of the required size could be obtained only by terracing. Most of the dance floors were long rectangles with a width ranging from one-quarter to one-half the length. The direction of the long axis was governed by the local conditions, but in all terraced *tohua* it was parallel to the hillside, which was usually cut away at the rear and the loose earth and stones used as fill for

the forward part of the dance floor. The lower side was supported by a stone retaining wall.

A small tract of naturally level ground, without structures of any sort, was pointed out to me as the *tohua* of one of the tribes in the valley of Puamau, Hivaoa. All the other *tohua* visited had originally terraces or platforms so placed as to overlook the dance floor. These structures served as seats for spectators during fêtes and each of them was reserved for some individual or class of the population. Handy says (19a):

The visiting chiefs sat on a special platform in front of the local chief's house; warriors and professionals sat on another special platform; women and children on another; the inspirational priest with his assistants and the ceremonial priest were together at the sacred place attached to the feast place.

This represents the ideal condition. In some of the structures visited several of these platforms are absent. Platforms for the chief and the priests are a nearly constant feature of *tohua* but it is probable that all other classes of spectators were often assigned to places on the long platform or terrace built along one side of the dance floor. The places of the various male functionaries, and, according to some informants, parts of the dance floor, were tapu to the women and children. The tribal men's house or warriors' house and the residence of the chief were usually built either on the edge of the *tohua* or only a short distance away.

Even in ancient times *tohua* were remodeled or demolished for the sake of the stone. Many of those seen have been partially destroyed or built over. Perfect structures are exceptional. The number and arrangement of the terraces and platforms overlooking the dance floor varies considerably in different structures but the most of the *tohua* on each of the islands are sufficiently uniform to indicate the existence of local types.

TOHUA ON FATUHIVA

On the island of Fatuhiva the *tohua* seem to be the smallest and the most poorly built of any in the Marquesas. With one exception, those seen are on level ground in the bottoms of the valleys where little grading was necessary; in each a continuous terrace or platform is built along one side of the dance floor; the other side and the ends are open or marked by low, roughly built walls. At some sites one or two small platforms have been built on the long terrace and at one site a small detached platform, too narrow to have borne a house, closed one end of the dance floor. (See p. 184.) This is said to have served as the seat of the chief during ceremonies. No structures were seen upon the dance floor. At all sites visited a *me'ae* is connected with

the *tohua*. With a single exception, they are small square platforms not more than three feet high and in various positions in relation to the dance floor. Nearly every one of them bears a large banyan tree. One site consisted of a very large *me'ae*, or series of *me'ae*, with which a small and simple *tohua* was connected. The chiefs' house was built near the *tohua*; at one site visited it was on the long terrace overlooking the dance floor.

TOHUA ON HIVAOA AND TAHUATA

On Hivaoa and the neighboring island of Tahuata, most of the *tohua* are larger and better built than those on Fatuhiva but inferior to those on the islands farther north. In most of them a terrace or series of terraces has been built on one of the long sides of the dance floor while the other side and the ends are open or enclosed by low, rough walls. On nearly all the terraces several detached platforms have been built. Some of them are small and probably served as seats for the chief and other important personages; others are large and doubtless mark the site of the chief's dwelling, the warriors' house, and the houses erected by visiting tribes during ceremonies. It is evident that many of the larger platforms have borne houses, but most of the long terraces and the smaller platforms are fully paved and probably were not roofed over. On no two terraces is the arrangement of platforms the same. In a few *tohua* are narrow platforms at one or both ends of the dance floor or along its lower side. Large flat stones, raised on smaller stones so as to form a crude table, are placed around the edge of some of the dance floors at irregular intervals (Pl. III, *A*). These are said to have served as pedestals on which the chiefs or the persons in honor of whom a feast was given danced and displayed their tattooing and ornaments. In the *tohua* of Pekia, Atuona (p. 141), a row of low stone seats with sloping backs has been built across one end of the dance space at the level of the ground (Pl. III, *B*). In one *tohua* a low platform on the lower side of the dance floor was pointed out to me as the place where the bodies of enemies were exhibited and later cut up and cooked.

A few structures have been built upon the dance floors. In the valley of Hanapaoa two small platforms near one end of the floor are said to have served as seats for the chief and chieftainess during ceremonies. (See p. 171.) In a *tohua* in the valley of Atuona a large house *paepae*, standing detached near one end of the floor, marks the site of the house in which the chief's son and other young men of his age were tattooed. (See p. 143.) On several dance floors are small paved areas or circles of stone back rests which served as seats for the old men who chanted during ceremonies.

Temples (*me'ae*) seem to be connected with all Hivaoa *tohua* except those in the valley of Puamau. Most of them are at one end of the dance floor and border upon it; but a few stand on the terrace running along one side of the floor. The temple was usually a stepped platform or a series of terraces running up the hillside. Most of them are small but at one site the temples are more extensive than the *tohua* itself. On some of them are evidences of a former house. Handy (19a) reports that on the island of Uapou "the house of the priest, (*tau'a*) was at one end of the *tohua*, its roof being in the form of an obelisk." As this position corresponds with that of the *me'ae* in many of the Hivaoa *tohua* it seems probable that at least the principal house on such *me'ae* was of high pyramidal form. With the exception of the walls along the end and lower side, the *tohua* in the Punaei valley (fig. 22) may be taken as typical of Hivaoa structures.

TOHUA ON NUKUHIVA

The *tohua* of Nukuhiva are, with few exceptions, larger and better than those found elsewhere in the Marquesas. Most of them exceed 200 feet in length; many are 300 to 400 feet long, while the largest *tohua* seen on Hivaoa is only 240 feet long and most of the structures on that island are less than 200 feet long. Most *tohua* on Nukuhiva have dance floors completely surrounded by terraces and platforms; a few are open on one of the long sides. The arrangement of the platforms in the fully enclosed structures differs with each site but the *tohua* of Nanauhi in Hatiheu Valley (fig. 6) may be considered typical. Each part of the structure was assigned to some special class of spectators as in the Hivaoan *tohua*. The low platforms surrounding the dance floor were almost entirely built over so that the structure, at the time of a fête, must have given the effect of a plaza surrounded by houses. Handy (19a) reports that on the island of Uapou it was customary to assign different parts of the *tohua* platforms to visiting tribes for building houses in which to live during the fête. From the extent of the platforms in Nukuhivan *tohua* it seems certain that the same practice existed on that island.

Paved areas or circles of stone backrests upon the dance floor are much less common in Nukuhiva than in Hivaoa, which suggests that in Nukuhiva the chanters usually sat on one of the platforms and not on the dance floor. Within a few *tohua* large *ma* pits (for storing fermented breadfruit) have been dug, a feature not observed in the southern Marquesas. Judging from their size, some of these pits were tribal, being a reserve in time of famine, while others probably supplied the chief and his numerous household. At two *tohua* low platforms on the dance floor were pointed out as the place

where the bodies of enemies were exhibited to the tribe and later cut up and distributed. In the *tohua* of Puamau in Aakapa Valley a large flat stone built into the wall bordering the dance floor is said to have been used for the exposure of human sacrifices (p. 119).

My informant insisted that the part of the *tohua* which contained this stone was not a *me'ae* and that no temple was connected with the *tohua*.

Stewart, one of the most reliable of the early writers on the Marquesas, describes a *tohua* of a type different from any seen by me. He says (40, pp. 257-8):

This *Tahua* or theater is a structure altogether superior to that visited by us yesterday; and so massive and well built as to be capable of enduring for ages. It is a regular oblong square, about sixty feet in length and forty feet broad. The outer wall consists of immense stones, or slabs of rock, three feet high, and many of them four or six feet long, joined closely together, and hewn with a regularity and neatness truly astonishing, in view of the rude implements by which it must have been accomplished. On a level with the top of this outer wall, a pavement of large flat stones, several feet in width, extends entirely round forming seats for the chiefs, warriors, and other persons of distinction, and singers performed their recitatives and choruses accompanying the dance. Within this, and some inches lower, is another pavement still wider, having large flat topped stones fixed in it at regular intervals of six or eight feet—used as seats for the beaters on drums and other rude instruments of music—and immediately within this again an unpaved area, some twenty feet by twelve broad, constituting the stage on which the dancers exhibit their skill.

According to native guides and informants, none of the *tohua* visited on Nukuhiva had temples connected with them, a fact of considerable importance in view of the constant linking of *tohua* and *me'ae* in the southern Marquesas. Tautain (41, pp. 551, 552), whose descriptions of Marquesan structures refer almost exclusively to those of Nukuhiva, gives some valuable information on this point. The following is a free translation:

Some of the *Koikas*, like that shown in the figures, have an additional structure, without fixed place, but always near the *paepae* when not joined to it. It consists of a *paepae* of medium surface, but often considerably elevated, which resembles those of houses except that it has in the platform a pit "*pakaho*," that is to say, trimmed with stones which appear to be cut.

This structure was never employed in ordinary fetes, i. e. not sacred fetes (*koika me'ie*) in which the religious element played no, or only a minor part. It was used only in certain religious fetes (*koika tapu*) which, either because of the number taking part or for some other reason, were not held at the *me'ae*. The ceremonies held here were designed to obtain from the gods rain or an abundant harvest of breadfruit and perhaps there were others; we do not know definitely.

For this fete the *Tau'a*, *Tuhuka*, and *Moa* went to the *koika* first and established themselves on the little *paepae*, which was covered by a roof. The chiefs arrived later accompanied by all the male members of the tribe except children. The ceremony consisted of invocations, chants, the beating of ordinary drums, which were dominated by the *pahu me'ae*, peculiar to human sacrifices, and above all in the sacrifice of a human victim, who was necessarily female. There was no feast as in the *koika me'ie*. After the sacrifice everyone returned to his hut. The ceremony

was strictly a district fete. Not only could there be no invited guests but if the cortege met a stranger in going or coming he was attacked, killed and devoured irrespective of sex and even if he was the parent of an inhabitant of the place.

The structures referred to by Tautain evidently correspond in function to the *me'ae* which were attached to nearly all the *tohua* in the southern Marquesas. Statements of guides regarding the uses of the various parts of some of the *tohua* visited also indicate that many *tohua* included structures bordering upon the dance floor which were used in connection with religious rites. These structures appear, however, to have been considered an integral part of the *tohua* and were not known as *me'ae* or as *ahu* (the Nukuhivan equivalent to the word *me'ae*). Tautain's statement implies that such sacred structures were not a constant feature of the *tohua* on Nukuhiva and this is borne out by the present natives. I am convinced that some of the *tohua* visited are simple assembly places at which no provision was made for the performance of religious rites. Such purely secular *tohua* are, however, few.

TOHUA ON UAHUKA

On Ua Huka the *tohua* are, as a rule, larger and better built than those on islands farther south but somewhat inferior to those of Nukuhiva. Most of them are uniform in plan and show a simplicity and symmetry or arrangement rare in *tohua* elsewhere (fig. 10). The long rectangular dance floor is open in front and bounded at either end by a low broad platform built in either two or three levels. The lower levels are fully paved while the highest level, which is on the outer side, is paved only on the forward half. The unpaved rear half corresponds to the bed space in ordinary dwelling *paepae* and it is evident that these end platforms have borne houses. In *tohua* excavated in hillsides a low continuous terrace runs along the rear of the dance floor and usually bears from one to three small platforms which no doubt served as seats for the chief and other important spectators. Several of these platforms are symmetrical in their arrangement, standing at equal intervals and with their fronts in line. At one site a very long house is said to have been built on the rear terrace. Although most of the *tohua* visited are open in front, one of the largest is fully enclosed, suggesting in its plan the structures on Nukuhiva. Its dance floor is said to have been surrounded by houses (p. 124). Another *tohua* is built on a narrow ridge, terraced on all sides to provide a level dance floor. The usual longitudinal platform at the rear is lacking, the only structures being a platform at either end of the dance floor and a small platform at the rear center which is said to have been the seat of the chieftainess to whom the *tohua* belonged. Structures

upon the dance floor seem to have been very rare but one *tohua* has a series of *ma* pits dug along its rear. (See p. 124.) In another *tohua*, part of the dance floor and rear platform has been fortified with walls of rough stone—a unique feature. The walls are, in part, loopholed for musketry and it seems probable that they were built at some time subsequent to the construction of the *tohua*. A *me'ae* seems to have been connected with the principal *tohua* of each valley but not with the *tohua* of lesser importance

TOHUA ON UAPOU

My visit to the island of Uapou was very brief; information regarding its *tohua* has been obtained by Handy. The *tohua* of Tamaeka in Hakamouï Valley is said to be 600 feet long and 120 feet wide. In view of the fact that the largest *tohua* on Nukuhiva is not more than 500 feet, this *tohua* is by far the largest in the Marquesas. (See p. 135.) With the exception of this structure the *tohua* on Uapou appear to be somewhat smaller than those of Nukuhiva but superior to those of Hivaoa. Most of them are of the fully enclosed type, with platforms on all sides of the dance floor, but a few have platforms along one side only or on one side and one end. The dance floor of one *tohua* is paved and bears a large block of stone upon which the chief danced at certain fêtes. Temples are associated with many of the *tohua* but are not a constant feature. None of them are very extensive and they vary in position with regard to the dance floor.

COMPARISON

From a study of the *tohua* on the different islands, it appears that the size of the Marquesan *tohua*, and the complexity of the structures associated with the dance floor, increases rather uniformly from south to north. Those of Fatuhiva are the smallest and simplest and those of Nukuhiva the largest and most complex.

The practice of reserving an open space in or near each village as an assembly place was practically universal in Polynesia and was probably a feature of the culture of the original settlers of the region. But the elaborate arrangement of terraces and platforms which characterizes the Marquesan *tohua* finds no parallel in the secular structures of the other Polynesian islands and may represent a local development. Some of the sacred structures of the Society Islands, the Austral Islands, and Hawaii appear to have many points in common with the Marquesan *tohua* and it is possible that the Marquesan forms represent a survival of a type of secular structure formerly of wide occurrence in southeastern Polynesia. (See p. 48.)

It would be possible to arrange the Marquesan *tohua* in a continuous series representing all steps in the evolution from the simple natural level used as an assembly place to the fully inclosed form. The position of the individual structures in such a series would not agree, however, with either their geographical distribution or their chronological sequence. As there are recognizable local types of *tohua*, the plan of new structure was probably governed in part by that of their predecessors on a given island, but the controlling factors seem to have been the resources of the chiefs under whose direction they were built and the local development of the art of stone construction. The natives of Nukuhiva, who surpassed all other Marquesans in their skill in stone construction, had the largest and most elaborate *tohua* and the fully enclosed type predominated on that island. Most of the fully enclosed *tohua* seen on the other islands are larger and better built than the local ones of less elaborate form, and it seems probable that by the beginning of the historic period the enclosed type had everywhere come to be recognized as the most desirable but that few chiefs in the southern Marquesas Islands controlled enough skilled labor to build them.

ME'AE

In the southern islands of the Marquesas and in Uahuka the term *me'ae* is used to designate any tribal sacred place at which regular religious rites were performed. In Nukuhiva and Uapou a different term, *ahu*, is used with the same significance. To avoid confusion to the reader, the term *me'ae* is used in this paper to designate all sacred places of this description.

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. In Fatuhiva, Tahuata, and in all but one valley of Hivaoa, a public *me'ae* was connected with every *tohua*. In Uapou and Uahuka such association seems to have been usual but not constant. In Nukuhiva there was no association of *me'ae* and *tohua*, but in many *tohua* certain structures set aside for the priests apparently corresponded in function to the *me'ae*, as this term is used in the more southern islands. It seems probable, therefore, that the difference between Nukuhiva and the other islands in this respect is merely a matter of nomenclature, the sacred portion of the Nukuhiva *tohua* having lost its distinctive name. This is of considerable interest in connection with the enclosed sacred places of Hawaii and Tahiti.

Public *me'ae* connected with *tohua* are usually quite small. They are commonly built at one end of the *tohua*, but there is no fixed rule, their location being governed principally by the topography. Most of them are simple

platforms three to four feet high and contain no pits for skulls or for the débris of sacrifices. Many of them bear large banyan trees, probably planted at the time the platform was built. At two sites, one on Hivaoa and the other on Fatuhiva, the *me'ae* associated with *tohua* are so large as to quite overshadow the secular part of the structure, but it is probable that at both of these sites there were two *me'ae* instead of the usual one.

Images of wood or stone were placed on some public *me'ae* but this does not seem to have been a universal practise. At all but one of the sites visited the images have disappeared; at this one place a single image stands near an end of the lower level of the platform. The front of the upper level, which bore a house, is faced with cut stone and decorated with small figures inset between the slabs—a use of architectural figures not observed in any other public *me'ae*. In Uapou, and probably elsewhere, a house for the inspirational priest was built upon the *me'ae* platform. The framework of this house was fundamentally the same as that of a dwelling, but some of the roofs were as much as thirty feet high, causing early writers to refer to these structures as obelisks. As described by Handy (19, pp. 231-234) its appearance must have been not unlike the oracle tower in a Hawaiian heiau.

The public *me'ae*, like the *tohua*, was considered the property of the chief and was inherited by his son. It was used for the religious ceremonies attending festivals. Food offerings were brought to it, and human sacrifices were performed at it during the ceremony of dedication. Most human sacrifices seem however to have been made at the mortuary *me'ae*.

That public *me'ae* were sometimes used for mortuary purposes is proved by the presence of rotted coffins in several of those visited.

MORTUARY ME'AE

Mortuary *me'ae* are much more numerous than public *me'ae* and differ so much in form that it is difficult to make general statements in regard to them. There seems to be some confusion in the minds of the present natives as to whether the term *me'ae* was applied to all places used for the final disposal of the dead. According to some informants it included all such places, although some of these were burial caves, barren hill tops, or even trees in which bodies or skulls had been placed. According to other informants, burial caves were not known as *me'ae*, and this is borne out by the statements of natives who guided me to these remains. On the whole, it appears probable that the term was reserved for the places or structures at which tribal rites were performed in honor of the dead. The accounts of burial customs obtained in the valley of Puamau, Hivaoa, indicate that the corpse was taken to a *me'ae* by the relatives and there turned over to

the priests, who kept it for a time and then concealed it in a cave or other secret place outside the *me'ae* precincts. The modern natives do not consider burial caves especially sacred and it seems probable that many of these caves were places of secondary disposal to which bodies were removed after a sojourn in a *me'ae*. The Marquesans may have had some idea of "spirit burial" similar to that among the Manganians mentioned by Gill (16, p. 79):

Chiefs and priests occasionally received the honor of "spirit burial" (*tamu vaerua*); the corpse being borne to the most renowned marae on the island and allowed to remain within the sacred enclosure for some hours, but the same day hidden away in the tribal cave. In such cases the depositing of the body in the marae was "the burial," or the committal of the spirit to the care of the god worshipped by him in life, while the letting down of the corpse into the deep chasm was designated "the throwing away of the bones" (*tiringa ivi*), the well-wrapped body being regarded as a mere bundle of bones after the exit of the spirit.

Although there is no clear proof of the existence of the idea of "spirit burial" among the Marquesans, a belief in it would explain satisfactorily several apparent contradictions in the accounts of native informants and of early writers. One informant explained the non-sacred character of burial caves by saying that only persons of no importance were placed in them, but this statement is not borne out by the offerings found. Handy (19, p. 118) remarks that private families had their own sacred places and that these were never called *me'ae*.

Mortuary *me'ae*, although used by the entire tribe, were considered the property of the chief. A chief in the valley of Puamau, Hivaoa, had two, the bodies of his followers being taken to one or the other, according to his orders. Only one of these *me'ae* was used for human sacrifices.

Though intended primarily for the disposal of the dead, mortuary *me'ae* were also the scene of some of the most important religious rites, and many more human sacrifices were offered there than in the public *me'ae*. This was no doubt due to the fact that the tribal deities were nearly all deified chiefs or priests. No sacred places seem to have been built in honor of the creation gods or of the great deities of Polynesian mythology. Mortuary *me'ae* were occupied only at the time of ceremonies and in the southern Marquesas Islands the houses built upon them for the accommodation of the priests were destroyed at the conclusion of the ceremony. In the northern islands the houses were not destroyed, but were repaired whenever ceremonies were to be performed.

Almost all mortuary *me'ae* are built on high ground and at some distance from the village, and are not, as a rule, enclosed. The limits of the sacred area were well known to the tribe and were marked at the time of cere-

monies by poles with tapa streamers. A few of the Hivaoa *me'ae* were enclosed by low stone walls none of which were high enough to prevent those outside from viewing the ceremonies and which seem to have been intended merely to mark the boundaries. One boundary was marked by a single row of rough stones.

Viewed from any high point, the locations of the various mortuary *me'ae* in a Marquesan valley are at once evident from the great size of the trees growing upon them. In former times there was a strict prohibition against cutting or using anything growing within the *me'ae* precincts and this rule is still generally observed. The sacred groves produced in this way may contain any of the local species of trees but it is evident that some varieties were favored by the natives. Banyans appear on nearly all *me'ae* and their position and alignment prove that many of them have been planted. The *temanu* (*Calophyllum inophyllum*) and a species of fan palm, or palmetto, whose leaves were used for thatching the sacred houses, are also common and as this palm is rare outside the sacred groves it also was probably planted. The *temanu* trees grow to great size and many of them appear to be much older than the associated structures. In *me'ae* which are at a high elevation, the groves are usually composed of ironwood trees (*Casuarina*) which flourish on the waterless plateau.

ME'AE ON NUKUHIVA

The burial *me'ae* on Nukuhiva are as a class the smallest and simplest. Most of them seem to have been built according to a single general plan, although each structure has its individual peculiarities. The *me'ae* of Mahaiata, in Taiohae Valley may be considered typical. (See fig. 5 and p. 122.) Its arrangement is exactly that of the better class of dwelling *paepae*, and the remains of *me'ae* of this sort are distinguishable from those of dwellings only through the greater height of the platforms and the more massive construction. Tautain (41, p. 669) gives a drawing of a *me'ae* whose upper surface is entirely covered by a roof but this interpretation is not confirmed by native informants or by the structures visited. According to informants and the accounts of early writers, the rear, raised portion of the platform bore a house but the forward portion was uncovered as in ordinary dwellings. The house was shaped like a dwelling but was open in front and the front posts were usually carved into tiki figures. Images seem to have been a constant feature of the *me'ae* of this sort and according to Stewart (40, p. 290) each house had three, one at either end of the platform, facing inward, and the third at the rear center, facing the front. Tautain (41, p. 669) shows two images placed near one end of the lower level. Nearly all

the images were made of wood and have disappeared at the sites visited. In Tautain's drawing two refuse pits are shown but this feature is unusual. The drawing also shows a low walled enclosure built against one end of the platform into which objects which had become tapu were thrown, but this feature was not found in any site visited. In almost every *me'ae* a large banyan tree had been planted upon the forward part of the platform and among the roots of some of these trees can still be found human bones and fragments of coffins. Of the pits used at repositories for the skulls of the tribe, common in Hivaoa, only one example was seen on Nukuhiva and this was in a structure of quite different type from those just described. Skulls are almost never found upon the simpler burial *me'ae* of Nukuhiva and it seems probable that the remains were removed to a cave after a sojourn in the *me'ae*, or that the skulls were gathered up after the disintegration of the body and taken to a cave or buried within the *me'ae* precincts.

The most interesting feature of the *me'ae* on Nukuhiva is the close resemblance which they bear to the ordinary habitations of that island. Even the sacrifice pit is paralleled by the pits which are found in the platforms of dwellings of the better sort. According to some informants, these dwelling pits were used as repositories for objects which had become tapu, while according to others they were used for the storage of *ma*. The accounts of their use for tapu objects are so exact and circumstantial that I am convinced that they were at least sometimes employed for that purpose. Such a function would correspond very closely with that of the sacrifice pits in the *me'ae*. It seems probable that the Nukuhivans conceived of the burial *me'ae* as the dwelling of the family or tribal ancestors and therefore patterned its construction on that of the ordinary habitation. The increased size of the house and platform, and their more elaborate decoration, would be in keeping with the increased dignity and power of the dead. This identity of form between the dwelling and the sacred place is almost unique in marginal Polynesia, but the Tongan and Samoan temples were of the same form as the ordinary dwellings except that they were raised on mounds or platforms.

Although the plan of most of the Nukuhiva temples closely resembles that of dwelling houses, it was by no means the only one used. Stewart (40, pp. 331-2) describes a sacred place as follows:—

A platform of stone twenty feet square and three feet high . . . marks the spot where the last remains of the immolated are thrown, after having putrified and dissolved before the image of the god to whom they are sacrificed. Directly in front . . . in a deep trough . . . lay a victim of cruelty, a single mass of putridity . . . Close beside it, the distorted image to which it was an offering, mouldering itself in green decay, reclined against the platform. On the right was a Tupapau, or house of the dead, containing a corpse . . . and on the left

an altar with an idol at each end, before which also were offerings recently presented. Besides fresh coconuts and breadfruit on the pavement, fish and pieces of pork had been hung around, evidently within a few hours, and two dogs, killed and dressed as if for eating . . . were suspended before the images, one by the neck on a pole, and the other from a post, in a basket of coconut leaves.

Evidently the only house in this *me'ae* was the one containing a corpse.

In both Taiohae and Taipivai there are a few burial *me'ae* of considerable extent which suggest the Hivaoan forms in the multiplicity of their terraces and platforms. The structures are scattered irregularly over the sloping hillside and the plan of no two of them is the same. The houses which formerly stood on some of the platforms have disappeared but the original appearance of one of these extensive sites in the valley of Taiohae can be reconstructed from Gracia's account. He says (18, p. 58):

They came finally to two little thatched houses, one of the ordinary form, the other pyramidal and falling into decay. Rampant vegetation covered both. In the interior they saw a thousand statues of all sizes strewn about. Floating ribbons ornamented the walls of the more recent house. On the ground there were some calabashes which no doubt had contained popoi and also some polished coconut shell cups which served for drinking the famous kava . . . on a corner, with a certain effect of decoration, were four heads of victims who had been killed and eaten. Cannibal feasts had been held here only a short time before, with the religious rites which accompanied them, by the priests of the idols, the warriors and the chiefs, who alone have the right to participate. Around the two houses there were also the remains of fish and of quarters of roast pork which had been suspended from the trees in honor of the gods. A short distance away, under the highest trees, were the most remarkable offerings and statues. In the middle of the approach there was an enormous stone, ever so little cut into a statue . . . Around this there were a thousand other forms, all more or less bizarre but all representing the human figure except one which had the form of a bird. The natives had carried here as offerings the débris of boats and even entire canoes.

According to the natives there was only one stone image in the valley of Taiohae so the site described by Gracia was almost certainly the same as that visited by Porter, whose account is similar, and it seems probable that the boats which Gracia thought offerings were used as coffins for the bodies of dead chiefs or warriors. This site is now in ruins and the image was removed some years ago by white traders.

ME'AE ON UAPOU

Only two of the burial *me'ae* on the island of Uapou are described by Handy (19, pp. 323-325). These differ considerably in plan and suggest that there, as in the more southern islands, no fixed type prevails. One of the *me'ae*, built on level ground, consists of a large *paepae* similar to that of a dwelling with a smaller and lower platform adjoining. The other is much

more extensive and is built on ground which necessitated terracing. Near the center of the terrace is a stairway, or ramp, leading to its top. Near one end of the terrace and upon its surface, are two large *paepae* of the dwelling type built close together, and a small platform which stands at a little distance. At the other end of the terrace are some slabs of cut stone and a pile of stones, probably brought there as building material. Neither of the sites includes sacrifice pits and as one of the platforms is strewn with bones and other *débris* it seems probable that the refuse of sacrifices was usually buried in the *me'ae*. There are no skull pits and the skulls of bodies which had been exposed in the *me'ae* were probably either buried or taken to caves. In the smaller of the sites the stone slabs facing the upper level of the main platform are decorated with relief carvings and a stone image was found nearby.

ME'AE ON UAHUKA

The *me'ae* on the island of Uahuka are variable in plan to an unusual degree. As a rule they consist of a large platform or terrace upon which smaller platforms are irregularly placed. In one *me'ae* a large house had stood on one end of the main platform, the remainder of the platform being enclosed by a low wall of rough stone; in others there have evidently been two or more houses. In some of the *me'ae* small and disproportionately high platforms were pointed out to me as the dwellings of resident priests but the old culture has broken down so badly on Uahuka that modern informants are not to be trusted. It seems probable that these platforms mark the site of the inspirational priests' house, a high roofed structure, occupied only at the time of ceremonies. One *me'ae*, differing considerably from the general plan, consists of a series of terraces placed one behind the other on a steep hillside. This *me'ae* contains a large stone image, placed near the front of the highest terrace, and stone relief carvings. No stone carvings were seen at any other of the sacred places on Uahuka. No sacrifice pits or skull pits were seen and it seems certain that neither were used on this island. Most of the *me'ae* contain one or more banyan trees with much-rotted coffins in their branches.

ME'AE ON HIVAOA

The *me'ae* on Hivaoa seem to have been more variable than those on any other island. The commonest form consists of from two to eight terraces arranged one behind the other on a sloping hillside. *Me'ae* of this sort are to be found in nearly all the valleys but they are not numerous enough to constitute a dominant type for the island. All the houses and most of the images have disappeared and although the position of many of the

principal buildings can be determined, the present natives can give little information as to their respective use. According to Handy (19, p. 119), the ideal complement of houses in a *me'ae* is a house for the inspirational priest, one for the ceremonial priest, one for the bodies of human sacrifices, one or more houses for the priests' assistants, and a house for the body of a dead chief or priest if rites in his honor were being performed. Few if any of the terraced *me'ae* show evidence of more than three houses, probably those of the ceremonial priest, the inspirational priest and their assistants, and it seems probable that the houses composing the rest of the establishment were small and constructed of material which decays without leaving a trace. The images, of wood or stone, variable in number, were usually set up at the rear of the next to highest terrace. The high roofed house of the inspirational priest was ordinarily on the highest terrace, behind the images, but might be on the terrace below them. The other houses were built on the lower terraces or on the ground nearby. According to one informant the houses of the assistants were only rough shelters "like those pig-hunters build." Small isolated platforms for embalming houses (*taha tupapau*) were sometimes built upon the lower terraces or above and behind the highest terrace. There are very few pits for sacrifice refuse or for the skulls of the tribe in the terraced *me'ae*.

In Puamau and adjoining valleys at the northeastern end of Hivaoa are a number of *me'ae* which agree rather closely in their plan with those on Nukuhiva. I was fortunate to have as guide to one of these a man who had participated in the last rites performed there and who was, therefore, familiar with its appearance when in use. The *me'ae* consists of a single large platform, identical with a dwelling platform except for a large sacrifice pit in the front pavement. A short distance to the north of this platform is a low platform or pavement on which human sacrifices were exposed. According to the guide no images had been upon the main platform within his memory. The priests who performed rites at this *me'ae* built small temporary shelters on the ground near the platform and rarely remained more than three or four days. The sacrifice platform was not roofed. The ancient culture had broken down considerably at the time of the sacrifice in which the guide had participated and the absence of houses and images is probably referable to the general decadence.

In addition to these two forms of *me'ae* there are on Hivaoa a great number of other *me'ae* which defy classification. Most of these consist of several platforms irregularly arranged either on a large terrace or upon a natural level. Some of these platforms bore images or served as foundations for the priests' houses and other structures. Others, which do not seem to have been covered, contain pits, usually rectangular, in which the

skulls and even the entire skeletons of members of the tribe were placed. Still other platforms were used as stands for the beaters of the ceremonial drums, some of which were as much as eight feet high and were placed upright on the ground beside the platform, the beaters standing upon its top. Pits for *ma*, used as food by the priests, are found within the precincts of many temples of this sort; some of these pits are said to have been also used as repositories for skulls or for the débris of sacrifices. There was no rule for the arrangement of the structures within these *me'ae* although the platform bearing the images was usually placed in a dominating position. Some of the *me'ae* covered more than an acre of ground and I believe that many of the larger sites were the result of a gradual growth, new platforms being added from time to time.

There is no line of demarkation between the platform *me'ae* and those consisting of several terraces running up a hillside. Many of the structures visited belong to an intermediate type of which the *me'ae* of Muutea (fig. 20) is an example. This temple, however, is unusually symmetrical in the arrangement of its platforms.

Still another form of *me'ae*, of which only a few examples were seen, consists of from one to five small platforms scattered irregularly over the surface of a rock slide. In such structures all the platforms seem to have borne images but no houses. In the interstices between the rocks of the slide are usually to be found many bones and skulls evidently hidden there after the disintegration of the body. According to informants, *me'ae* of this kind were primarily mortuary and were not used for human sacrifices or the more important tribal rites. Judging from the attitude of the present natives toward them, they were probably of less sanctity than those of other forms.

In the valley of Atuona is a fortified *me'ae* used as a citadel and as a repository for the skulls of chiefs (p. 143). No other structure of this sort was seen. A few *me'ae* contain no structures, their sites being marked by large trees in the branches of which the skulls of the dead were placed.

ME'AE ON TAHUATA AND FATUHIVA

The *me'ae* on the islands of Tahuata and Fatuhiva show a diversity of form equal to those on Hivaoa and seem to have included most of the Hivaoan types. No temples of the simple Nukuhivan form were seen on either of these islands, but as only a few valleys were visited it can not be said that the Nukuhivan type is altogether lacking.

SUMMARY

The diversity of Marquesan *me'ae* is so great that definite statements regarding them seem inappropriate. The mortuary *me'ae* in particular vary so much in form that it seems probable that, like the Hawaiian heiau, each one was planned independently and that their builders deliberately sought to avoid repetition.

Broadly speaking, the following relations seem to be established:

In Nukuhiva the public *me'ae* became fused with the *tohua* and the resulting structure is in a general way comparable to the enclosed sacred places of Hawaii and Tahiti. There were also purely secular *tohua* which were not used for religious rites but it is doubtful whether there were public *me'ae* which were not connected with *tohua*.

In Hivaoa, Tahuata, and Fatuhiva the public *me'ae* became structurally a part of the *tohua* but retained its distinctive name and functions.

In Uapou and Uahuka the public *me'ae* was connected with the *tohua*. But there were also secular *tohua* which had no *me'ae*. Nearly all public *me'ae* were small platforms without a sacrifice pit or pit for skulls.

Most Nukuhivan burial *me'ae* were simple structures modeled on the lines of ordinary dwellings. Sacrifice pits were a constant feature but pits for skulls were very rare. There were a few more elaborate *me'ae* consisting of a number of platforms built upon a single terrace or level, or upon superposed terraces.

In Uapou and Uahuka the mortuary *me'ae* consisted of a number of platforms built upon a single terrace or level; both sacrifice pits and skull pits were lacking.

In the northeastern part of Hivaoa 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.

The mortuary *me'ae* of Tahuata and Fatuhiva resembled, in general, those of southern Hivaoa.

TOKAI

The term *tokai* is applied in the northern Marquesas islands to places sacred to the memory of women who had died in childbirth. On Hivaoa and the southern islands such places are known as *fanaua*, a term also applied to the malignant spirits believed to be responsible for the death of pregnant women. According to an old manuscript collected by Handy, the woman was buried in the *tokai*, but as some *tokai* are nothing more than outcrops of bare rock this could not have been the rule. Small offerings of food were placed on the *tokai* for the malignant spirit and it was considered a place of great danger for pregnant women. All the *tokai* seen were either rock outcrops, cairns of rough stone or small platforms except one in the valley of Hane, Uahuka, which is as large as a small *me'ae*. This *tokai* was erected in memory of a chieftainess, Manuhekua, and is, therefore, unusually elaborate (fig. 11). An image or images were erected on all

tokai but all had disappeared from the sites visited. According to some early writers, stone caps were placed on the heads of such images. (See p. 79 and Pl. VIII, C.)

PLACES OF CIRCUMCISION

A visit was made to a place of circumcision in the valley of Puamau, Hivaoa. The site is near a *me'ae* but was not tapu. It consists of two low walls of very large stones separated by an interval of about fifteen feet. The child who was to be circumcised was seated on a large stone at the end of one of these walls while the spectators seated themselves upon the other. The boys were circumcised in groups of three or four individuals. It is not known whether similar places are located elsewhere in the Marquesas.

SACRED PLACES OF FISHERMEN

Among the Marquesans, fishing was a community enterprise and attended with elaborate tapus and religious observances. Each community had a sacred place for its fishermen. It was built at the edge of the sea, and consisted of one or more large houses on platforms around which were grouped a number of smaller houses which served as sleeping quarters. 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 while 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*. Most of them have been destroyed. Their sites are marked by single low rectangular platforms paved with small seaworn boulders. The most elaborate example seen is in the valley of Hanaei, Uahuka (fig. 8). In addition to the sacred places in each village the fishermen had small platforms on the shores of uninhabited islands or in valleys which they visited in their expeditions. These platforms bore a single image, to which fish and pigs' heads were offered to insure success in the fishing.

COMPARISON

The custom of reserving an open space in or near each village as an assembly place was almost universal in Polynesia. It was also of wide occurrence in Micronesia and Melanesia and it is safe to assume that it was a feature of the original culture of most of the Polynesian settlers. Outside of the Marquesas these assembly places seem, however, to have been nothing more than cleared level areas. The Marquesan *tohua* find no close Pacific parallel and must be considered either a local development or a

survival of a structural type which had been abandoned or modified in other parts of Polynesia before the beginning of the historic period. The only secular structures in Polynesia which at all resemble the *tohua* are the Hawaiian dance platforms which Fowke (13, pp. 181-2) describes as "Old dancing platforms made by digging the earth down on the hillside to form a level area, the lower margin of which is supported by a high wall of heavy stones." Fowke makes no mention of seats or overlooking platforms, and the resemblance of these structures to the Marquesan *tohua* extends no further than the terracing of the hillside to form a level assembly place, a feature which might easily have arisen independently through the nature of the terrain. In Samoa and Tonga the assembly place was called the *malae* and in New Zealand the *marae*, but in the Society Islands it was at least sometimes known as the *tahua*. Thus Smith (37, p. 202) records that the famous chief Turi had on Raiatea a *tahua* named *Te-umuape*. Existing knowledge of the ancient structures in the Society Islands is too slight to permit of any conclusions as to the form of these assembly places.

The relation of the Marquesan sacred structures to those of the other Polynesian groups involves a knowledge of the temples used elsewhere. The best account of the Tongan sacred structures is that given by Cook (7, vol. 3, pp. 206-9), who describes a typical temple as follows:—

The chief . . . conducted us along a lane that led to an open green, on one side of which was a house of worship built on a mount that had been raised by the hand of man, about sixteen or eighteen feet above the common level. It had an oblong figure, and was enclosed by a wall or parapet of stone, about three feet in height. From this wall the mount rose with a gentle slope, and was covered with green turf. On the top of it stood the house, which had the same figure as the mount, about twenty feet in length and fourteen to sixteen broad. As soon as we came before the place, everyone seated himself on the green, about fifty or sixty yards from the front of the house. Presently came three elderly men, who seated themselves between us and it, and began a speech, which I understood to be a prayer, it being wholly directed to the house . . .

In the front were two stone steps leading to the top of the wall; from this ascent to the house was easy, round which was a fine gravel walk. The house was built in all respects like to their common dwelling houses . . . The floor of the house was laid with fine gravel, except in the middle, where there was an oblong square of blue pebbles, raised about six inches higher than the floor. At one corner of the house stood an image rudely carved in wood, and on one side lay another; each about two feet in length . . .

The mount stood in a kind of grove open only on the side which fronted the high road, and the green on which the people were seated. At this green or open place, was a junction of five roads, two or three of which appeared to be very public ones.

At several of the cross roads, or at the meeting of two or more roads, were generally *Afiatoucas*, such as already described; with this difference, the mounts were pallisadoed round, instead of a stone wall.

From accounts of Mariner and of others, it is known that the mounds on which these temples stood contained stone vaults which were used as sepulchers by chiefly families.

In Samoa the sacred structures were much less elaborate. Turner (45, pp. 18-19, 23, 24) says:

There was a small house or temple consecrated to the deity of the place. Where there was no formal temple, the great house of the village, where the chiefs were in the habit of assembling, was the temple for the time being, as occasion required. Some settlements had a sacred grove as well as a temple, where prayers and offerings were presented.

Continuing, Turner remarks that one of the heavenly gods had "a large temple . . . in which there were ten seats on which sat the principal chiefs," and that another sacred place consisted of two oblong smooth stones, the objects worshipped, raised on a stone platform. There seem to have been many sacred stones to which offerings were made. Smith (38, pt. 3) makes the statement that Samoan temples were erected on high platforms of large stones—a practice not mentioned by early writers and probably rare. The feasts and public rites connected with the worship of the gods were often performed in the *malae* (village assembly place) but it is not clear whether the temple was built near it. The name which the Samoans applied to their temples, *malumalu*, differs from the terms used elsewhere in Polynesia, and their sacred structures are also distinguished from those of most Polynesian peoples in that they were never used as places of sepulcher. Individuals sometimes addressed prayers to the spirits of dead relatives but there appears to have been no organized ancestor worship in Samoa.

Smith (38, pt. 3, p. 198) describes the sacred structures of Niue as follows:

It is clear that there were places in former times which must, to a certain extent, have been sacred, where their rites were performed. These are called tutu, and are hillocks, more or less flat on top, and which present every appearance of being partly artificial; they would average about 50 to 70 feet long by 20 to 40 feet wide . . . In former times they were the sites of faituga, a word which is used in the Niue scripture for temples, but probably the Niue temples were of the nature of the Maori tuahu, i. e. the sites where the rites connected with their religion were performed, but were not otherwise occupied by buildings—at any rate of a permanent nature.

In addition to these sacred places, there were stone seats on which the kings sat at the time of their investiture. Smith (38, p. 147) gives a brief account of this ceremony:

A representative from each village attended, while others performed various services, such as providing the stone against which the king sat to be anointed, such

stone being called a pepe (Maori, &c., paepae, but in Moriori pepe). There are two such stones in the village of Alofi, where Tui-toga and Fata-a-iki were anointed. They are rough flat coral rocks, about four feet high and two feet broad. At Tuapa, about half a mile inland is another, which stands at the east end of an artificial platform (tutu) of rough stones about twelve feet high, sixty feet long and fifty feet wide. At about seventy or eighty yards to the west are eleven seats formed of upright stones with backs to them, where the chiefs sat in council (fono) with the king. The pillar where the king is anointed and the stone seats reminded me very much of the place called Arai-te-tonga, in Rarotonga. But there is this notable difference, that at Rarotonga the chiefs can tell to whom each seat belonged, and the whole history of the place, and the ceremonies performed there, whereas the Niue chiefs knew very little about it.

These quotations indicate that these seats of the kings were not connected with the sacred places and that they should probably be considered as secular rather than religious.

Very little has been published upon the sacred structures of the Cook Islands and only one marae, that of Araitetonga, on the the island of Rarotonga, has been described in detail. In regard to this Smith says: (39 pp. 218-19):

Arai-te-tonga was the principal marae of Rarotonga, where the ruling chiefs of the Makea family often dwelt, and where the sacrifices to the gods were made, and the Takarua, or annual feast of the presentation of the first fruits, was held, accompanied by many ceremonies and much rejoicing. It is probable that, like the other maraes of the Cook group, it was at one time enclosed with a stone wall but there is no sign of it left.

Are-rangi is where the ariki or high chief (some member of the Makea family) of the island usually lived. This is a platform about two feet above the level of the road, the face of which is lined with stone seats having backs to them, and which resemble the seats of the tutu behind Tuapa in Niue Island; these were used for similar purposes. When the mataiapos or minor chiefs used to visit the ariki these seats were occupied by them, and they lodged in the seven roomed house on the opposite side of the road . . .

Arai-te-tonga is situated about one hundred yards to the west of Are-rangi, and here was the marae proper, where all the religious services were performed. During the great functions the ariki made use of the house marked 'g' on the sketch. (This house was behind and to the left of the row of seats). When offerings were made to him he sat on the stone seat marked 'a'. (This seat was in front of the house); at his right was seated Takaia, a tunga or priest, at the right of Takaia sat Potikitaua (or Te Ariki-taraare), which seat was called puera, meaning to open or disclose, because it was through this priest that Makea declared his decision on any matter before him. The next seat was called maringi-toto, or blood spilling, because on this stone were laid the heads of the human victims brought there to be sacrificed to the gods . . . (Between the seat of Potiki-taua and the sacrifice stone was a stone) about 24 inches square and 8 feet high, (which) is said to have been brought from Avaiki. It is not quite level on the top, and the whole pillar is now somewhat inclined from the perpendicular. It played an important part in the anointing of the ariki, for it was here this function was performed, the ariki being lifted up onto the stone by the mataiapos, or minor chiefs . . . After this had been performed the Ariki was carried to another marae

at Pureora, near Nga-tangiia on the east side of the island, which is the principal home of the Ngati-Tanglia clan.

The marae of the Aitu tribe on the island of Mangaia is said by Gill (17, p. 27) to have been built in the following manner:—

The marae itself—the best built on the island—was 100 feet long and 25 feet broad . . . great stones are buried deep in the soil three feet, however, being exposed to view on all sides. In all other maraes the center is filled with earth, a thick layer of snow-white pebbles covering the whole. But the “god tribe” resolved that this should excell all other maraes; therefore, they determined to fill “maputu” (as it is called) with human heads cut off for the purpose; and this they did . . .

The marae was at last filled up; a covering of earth was laid on the human heads; sea pebbles (still traceable) ornamented the surface; and the whole was dedicated to Tane-ngaki-au (Tane-striving-for-power).

Gill has published also (16, p. 36) an illustration of “Akaoro, the first resting-place of the sacrifice—now a cow-pen,” from which it appears that this marae was a rectangular, stone walled enclosure. From the accounts quoted it appears probable that both enclosures and stone-faced platforms were used as sacred places, but it is impossible to draw any conclusions as to their relative numbers or to tell whether there was any difference in the nature of the rites performed at the structures of each type. The maraes were used as burial places.

The most concise account of the sacred places of the Society Islands is that given by Ellis (9, vol. 1, pp. 339-41), who says:

Polynesian temples were either national, local or domestic. The former were depositories of their principal idols, and the scenes of all great festivals; the second were those belonging to the several districts, and the third such as were appropriate to the worship of family gods . . . All were uncovered, and resembled oratories rather than temples . . . The national temples consisted of a number of distinct maraes, altars, and sacred dormitories, appropriate to the chief pagan divinities, and included in one large stone enclosure of considerable extent. Several of the distinct temples contained small inner-courts, within which the gods were kept. The form of the interior or area of their temples was frequently that of a square or a parallelogram, the sides of which extended forty or fifty feet. Two sides of this space were enclosed by a high stone wall; the front was protected by a low fence; and opposite, a solid pyramidal structure was raised, in front of which the images were kept and the altars fixed. These piles were often immense . . . Within the enclosure, the houses of the priests and keepers of the idols were erected . . . The trees growing within the walls and around the temple were sacred.

Maps of two marae closely similar in form to those described by Ellis are published by Routledge (36, pp. 440-41). These structures consist of an oblong enclosure across one end of which is a pyramidal mound of considerably greater height than the enclosing walls. Routledge also mentions (36, p. 441) seeing the foundations of marae of quite different form

and from my observations on Tahiti and Moorea it seems certain that at least some of the marae on these islands are simple platforms or series of platforms without enclosing walls. It is probable that these platform marae are family shrines and that the enclosed form was used only for the more important structures. Elsewhere in the Society Islands even the important maraes appear to have been platforms. Cook (7, vol. 1, p. 252) describes the marae of "Tapodeboatea" on the island of Borabora as follows:—

We found it very different from those of Otaheite; for it consisted only of four walls, about eight feet high, of coral stones, some of which were of immense size, enclosing an area of about five and twenty yards square, which was filled up with smaller stones; upon the top of it many planks were set up, and which were carved in their whole length. (An altar with a sacrifice, and a large sacred house were seen nearby.)

Some of the marae in the Society Islands contained special seats for the chiefs, but there is no information as to their arrangement or form. Ellis (9, vol. 1, p. 343) mentions seats of a different sort. He says:

The petitioner did not address the god standing or prostrate, but knelt on one knee, sat cross legged, or in a crouching position, on a broad flat stone, leaning his back against an upright basaltic column, at the extremity of a smooth pavement, usually six or ten yards from the front of the idol.

In the account which Ellis gives of the ceremonies attending the inauguration of a king no mention is made of permanent seats in the marae but it is said that near the conclusion of the ceremony:

The multitude followed them into the court of the marae, where the king's couch or throne was fixed upon the elevated stone platform, in the midst of the unu, or carved ornaments of wood erected in honor of the departed chiefs whose bones had been deposited there. The principal idol, Oro, and his son, Hiro, were placed by the side of the king, and the gods and the king here received the homage and tribute of allegiance from the people.

The only satisfactory account of the marae of the Austral Islands is that given by Routledge (36, pp. 442-445). From the descriptions and maps these structures appear to have been simple rectangular enclosures or to have consisted of a large rectangular enclosure with which other smaller enclosures were connected. Several of the enclosures are composed of large unhewn stones set on end. No mention is made of sacred platforms.

There is no good account of Mangarevan sacred structures. Moerenhout (31, pp. 97-8) describes one marae as a house of ordinary form decorated with tapa, having in front a pavement on which several small altars had been built. At one end of the platform was a wooden image about three feet high. Beechy (2, pp. 122-3) says that the sacred place seen by him

was a hut twenty feet long, ten feet wide and seven feet high. Its small door was closed with a thatched shutter. In front of the hut there was an area twenty feet square bordered and paved with slabs of hewn coral.

As described by Routledge (35, 165-74) the sacred structures of Easter Island are of two types, both of which were used primarily for the disposal of the dead. The more important of these types is described as follows:—

A typical image ahu is composed of a long wall running parallel with the sea, which, in a large specimen, is as much as 15 feet in height and 300 feet in length; it is buttressed on the land side with a great slope of masonry. The wall is in three divisions. The main or central portion projects in the form of a terrace on which the images stood with their backs to the sea; it is therefore broad enough to carry their oval bed plates; these measure up to about 10 feet in length by 8 feet or 9 feet in width, and are flush with the top of the wall . . .

The wall which forms the landward side of the terrace is continued on either hand in a straight line, thus adding a wing at each end of the central portion which stands somewhat farther back from the sea. Images were sometimes placed on the wings, but it was not usual. From this continuous wall the masonry slopes steeply until it reaches a containing wall, some 3 feet high, formed of finely wrought slabs of great size and of peculiar shape; the workmanship put into this wall is usually the most highly finished of any part of the ahu. Extending inland from the foot of this low wall is a large, raised and smoothly paved expanse. The upper surface of this, too, has an appreciable fall, or slope, inland, although it is almost horizontal, when compared with the glacis.

By the method of construction of this area, vault accommodation is obtained between its surface pavement and the sheet of volcanic rock below, on which the whole rests.

A second form of *ahu*, which seems to have been constructed until comparatively recent times, is described as follows:

They resemble a pyramid cut in two so that the section forms a triangle; this triangle is the sea-wall; the flanking buttress on the land side is made of stones, and is widest at the apex or highest point, gradually diminishing to the angles or extremities. The greatest height in the center varies from 5 feet to 12 feet, and a large specimen may extend in length from 100 feet to 160 feet. They contain vaults. In a few instances they are ornamented by broken pieces of image stone, and occasionally by a row of small cairns along the top, which recall the position of the statues on the image platform.

Easter Island burial cairns (*ahu poe-poe*) built in modern times are of two forms: Canoe-shaped—some of them very large; and wedge-shaped, resembling a pier or jetty (35, pp. 230-31). Both types contain vaults.

The Maoris of New Zealand had no permanent sacred structures, in that being unique among Polynesian peoples. There were sacred places without structures and also sacred trees and stones. Temporary altars, (*tuahu*) consisting of mounds of earth about which rods were set up, were used in ceremonies. Tregear (43, p. 490) says: "Some of these could be

made on the ground at any place and could be removed, but prayers had to be offered at a distance and then the earth had to be taken to another place and left." The *wharekura* (sacred house) in which young men were taught is the nearest approach to a temple but neither the historic houses of this sort nor the plan of the traditional *wharekura* at Uawa as given by Tregear finds any parallels among Polynesian sacred structures. Tregear (43, p. 374) says that this traditional structure "probably united the functions of Temple, Herald College, Council Chamber and Hall of Justice. Here worship of the gods was carried on, the pedigrees of the chiefs recited, peace and war arbitrated."

An objective study of Hawaiian heiaus reveals great diversity of detail but fairly constant adherence to two main structural forms: the rectangular walled enclosure and the rectangular platform. Very few of the surviving structures are of the oval and circular forms mentioned by Kamakau (42, pp. 54-6) and it seems probable that these forms were rarely used. Many platform heiaus were built with several levels or passed into series of terraces running up the hillside, but the stepped pyramidal form which characterizes the Tongan *langi* and the pyramids of the larger Tahitian marae seems to be rare in Hawaii. A few of the enclosed heiaus have wide ledges or platforms along the inside of the walls which are said to have served as seats for spectators. The so-called "cities of refuge," large walled enclosures in which women and children sought safety in time of war, find no Polynesian parallel and must be considered a local development.

These descriptions of Polynesian sacred structures show that the forms characteristic of Samoa and New Zealand differ so much from those of other localities that they can not be included in any generalized statement. The Samoan temples were small houses, or town houses in which secular and religious functions were combined. They were not used as places of interment. In New Zealand there were, strictly speaking, no permanent sacred structures. Throughout the rest of Polynesia, with the possible exception of the Austral Islands, the typical sacred place was a raised platform with or without a house. This platform was used in connection with the disposal of the dead and the ceremonies performed at it were largely connected with their worship. In the Cook Islands, Society Islands, Austral Islands, and Hawaii, in addition to raised platforms, are rectangular walled enclosures. With the possible exception of the Austral Islands, this form everywhere existed side by side with the sacred platform. Its distribution is geographically continuous in southeastern Polynesia and its presence in Hawaii suggests that it should appear in the Marquesas, a group lying between the Society Islands and Hawaii. But the sacred places in the Marquesas are of platform type, unenclosed, or enclosed by very low walls

which served merely to mark the limits of the sacred area. On the other hand, the Marquesas has structures of another class, the *tohua*, which present many points of similarity to the enclosed marae. Although *tohua* appear to have been essentially secular, they were also the scene of public religious rites. In southern Marquesas Islands these rites were performed at a sacred platform which was connected with the *tohua*, but which seems to have been considered a separate structure, *me'ae*. In northern Marquesas Islands, many *tohua* have platforms set aside for the priests and for the performance of religious rites, but these platforms were considered an integral part of the structure. Throughout the Marquesas the sacred part of the *tohua* was tapu to all except the priests, and, according to Tautain (41, p. 552) women were excluded from the *tohua* at least of northern islands, during certain rites. A sacred character was thus constantly attached to some parts of the *tohua* and this character was sometimes extended to include the whole structure.

The sanctity of the enclosed marae of the Society Islands seems to have centered in the stepped pyramid built at one end of the enclosure. This structure was at all times tapu to the common people although the men of the tribe were freely admitted to the marae at the time of important ceremonies. Unfortunately it is not known whether the enclosing walls were used as seats for the spectators. The marae was considered the property of the chief and it was from a seat on the pyramid that he received the homage of the people at the time of his taking office. The rules governing the construction of Tahitian marae are unknown, but the marae of Oborea was built by Oborea in honor of her son, thus paralleling the Marquesan custom.

The resemblances between the Marquesan *tohua* and the enclosed marae of Tahiti are so numerous that I believe the two forms represent only slightly divergent developments of the same idea. It seems probable that both have arisen from a custom of linking the tribal assembly place and the tribal sacred place. A linking of this kind existed in Tonga, where each temple (*faitoka*) had an assembly place (*malae*) connected with it. It is less evident in Samoa, but the use of the town house as a temple and the performance of public religious rites in the *malae* of the village point to the presence of the same idea. The information for the Cook Islands is unsatisfactory, but the description of the marae of Araitetonga on Rarotonga (p. 44), suggests that this structure had some points in common with the Marquesan *tohua*, although it was not enclosed. It was considered the property of the chief, whose house stood on a platform close by, and the two parallel rows of seats, each of which was assigned to some chief or dignitary, are suggestive of the elaborate seating arrangements of the

Marquesan structures. The great block of stone on which the chief was raised at his investiture also suggests the blocks of stone or small platforms on the dance floors of some Marquesan *tohua* upon which the chief exhibited himself to the people. It is interesting to note that the Rarotongans, like the Marquesans, made considerable use of non-ceremonial stone seats. Smith (39, p. 218) says: "At several places are to be seen the stone seats where the local gossips used to sit and learn the news of the passers by." Practically nothing is known concerning the use of the enclosed marae of the Cook and the Austral islands.

The historic condition in south-eastern Polynesia seems to be explained by the following hypothesis:—The original form of Polynesian sacred structure was a platform or mound used in connection with the disposal of the dead. The practice of reserving an open space in or near each village as a place for secular assemblies was universal. The sacred place of the ruling family was usually connected with this assembly place and the religious rites in which the whole tribe participated were held in it. In the Society and Marquesas islands, where the art of stone construction came to be highly developed, the assembly place assumed a rectangular form and various structures were built around it until it came to be entirely enclosed by walls and platforms. All the stages in the evolution of the enclosure can be found in the Marquesan *tohua*. The structures built around the assembly place were intended primarily for the accommodation of spectators and the original purpose of the enclosure was thus inclusive and not exclusive as in the later developments of the form. The sacred platform, which probably was the first structure to be definitely associated with the assembly place, became structurally a part of the enclosure but retained its distinctive features and sacred character. This condition survived into historic times in southern islands of the Marquesas where a *me'ae* is connected with every *tohua*. With the introduction or development of the idea of the personal divinity of chiefs, the distinction between the sacred platform, the property of the deified ancestral spirits, and the assembly place, the property of the divine chief, tended to disappear. The condition in northern islands, where certain parts of the *tohua* performed the functions of the *me'ae* in southern islands without receiving a separate name, may represent the first step in this fusion of ideas. Such *tohua* were still essentially secular structures but were tapu to women and foreigners at the time of certain religious ceremonies. In the Society Islands, where the idea of personal divinity reached a much higher development than in the Marquesas, the whole enclosure came to be considered sacred, but the sanctity centered in the pyramidal structure built at one end. This structure probably represented the original sacred platform connected with the secular assembly place. The as-

sembly place, in turn, being represented by the rectangular enclosure. This assumption is borne out by the fact that although the pyramid was tapu to all but the chief and the priests, the men of the tribe were admitted to the enclosure during important ceremonies.

We know so little about the enclosed marae of the Cook Islands that it is impossible to say whether they are in agreement with this theory. Those of the Austral Islands do not agree, as they seem to be simple enclosures or series of enclosures without associated platforms. It is highly probable that there were sacred structures of a perishable nature connected with the stone enclosures and it seems possible that the enclosure represented the assembly place while the temples proper were houses which have now disappeared. The occurrence of these sacred enclosures without platforms suggests an alternative theory of the origin of the Tahitian marae, namely, that they represent the fusion of two types of sacred place; an enclosure and a platform. However, it is difficult to correlate this theory with conditions in the Marquesas.

Great interest attaches to the occurrence of the enclosed type of sacred place in Hawaii, as it seems to be well established that it was not developed locally but was introduced into the group by the last wave of immigrants. Fornander (12, vol. 2, pp. 59-62) says:

To this period (that of the last migration) the Hawaiian tradition assigns the introduction of the four walled, more or less oblong, style of Heiau (temple) instead of the open truncated pyramidal structure of previous ages, indicating a great change in the ceremonial of the religion and a tendency to exclusiveness unknown before. Under the old, the previous regime, the Heiau of the truncated pyramid form, with its presiding chief, officiating priests, and prepared sacrifices, were in plain view of the assembled congregation, who could hear the prayers and see the sacrifice, and respond intelligently to the invocations of the priest. Under the innovations of this period, the presiding chief, those whom he chose to admit, and the officiating priests, were the only ones who entered the walled enclosure where the high places for the gods and the altars for the sacrifices were erected, and where the prayers and invocations were recited, the congregation of the people remaining seated on the ground outside the walls, mute, motionless, ignorant of what was passing within the Heiau until informed by the officiating priest or prompted to the responses by his acolytes.

To this period also may be assigned the introduction and adoption of several new gods into the Hawaiian pantheon. That the Hawaiians previous to this venerated and prayed to the spirits of departed ancestors—*Aumakua*—is abundantly shown by their legends and traditions To the influence of this period must be attributed the increasing astringency of the tabus, and probably the introduction, or at least more general application, of human sacrifices. In support of this surmise, I may state that in all the legends or allusions referring to the period previous to this migration epoch I have found no indications of the practice of human sacrifices, although they may have existed; but subsequent to this period the inhuman practice becomes progressively increasing.

To the same period Fornander ascribes the introduction of the pa-u; the

large heiau drum called *kaeke*; the use of tapu sticks with balls of black or white tapa on the end; and a general stiffening of the lines of social demarcation with the first appearance of the idea of an overlord or king. The term used for this new dignitary, *moi*, Fornander believes to be of Tahitian origin.

Of the cultural factors ascribed to the Hawaiian immigrants, the enclosed ceremonial structures, the practise of human sacrifice, and the use of large vertical drums in the temple ceremonies were highly developed in the Marquesas and Tahiti. The use of vertical drums seems to have been limited, in historic times, to these two groups and Hawaii with a sporadic occurrence in the Tuamotus. Enclosed temples and human sacrifice extended as far west as the Cook Islands, but enclosed temples are entirely absent and human sacrifice very rare in Samoa and Tonga. The two additional factors of material culture mentioned by Fornander, the pa-u and tapu sticks with a ball on the end, are of less comparative value as the distribution of the pa-u is uncertain and the use of this form of tapu stick was limited to Hawaii and dates from historic times. The highly developed social system, with the idea of an overlord, was practically absent in the Marquesas, but was well developed throughout the region from Tahiti to Tonga.

It seems well-nigh certain that the last wave of immigrants to Hawaii did not come directly from western Polynesia but from the Society Islands or the Marquesas. A point in favor of their Marquesas origin is the (at least superficial) resemblance between the Hawaiian oracle towers and the high roofed house of the Marquesan priest. The social and religious factors attributed to the newcomers are, however, much more like those of the Society Islands than those of the Marquesas so that the weight of the evidence seems to favor a Society Islands origin. Even in the Society Islands these factors seem to have been due to an influence from western Polynesia. In view of all the evidence it seems probable that the Hawaiian immigrants were drawn partly from the older population of the Society Islands and the Marquesas and partly from the descendants of western Polynesians who had established themselves as overlords in the Society Islands.

The exclusive character of the Hawaiian heiaus in historic times seems best explained by the following hypothesis: The immigrants brought with them the idea of an enclosed ceremonial structure which had been developed in the Society Islands and the Marquesas prior to their departure. The presence, in some of the Hawaiian heiaus, of ledges intended as seats for spectators suggests that the fusion of the assembly place with the sacred place was less complete at that period than it was in the Society Islands in historic times. Perhaps it approximated the historic condition in the northern Marquesas islands where women and strangers were excluded from

the assembly place at the time of certain ceremonies. The Hawaiian immigrants, who found themselves among an alien population, not unnaturally excluded these foreigners from their assembly places, and as the newcomers rose to a dominating position the right to enter the assembly place came to be more and more a mark of social distinction. As the power of the chiefs increased, the number of those who might enter the enclosure was still further reduced until in historic times the privilege was limited to the priests, the chief, and such persons as the chief might choose to admit.

In the northern islands of the Marquesas the fusion of the sacred place and the assembly place caused the sacred place to lose its distinctive name of *ahu* or *me'ae* and led to the combined structure known as the *tohua*, the term elsewhere applied to the assembly place alone. The application of the term *marae* to the sacred structures of islands farther south may represent a parallel development. In Samoa and Tonga the corresponding term, *malae*, was applied to the village assembly place and carried no sacred significance. In New Zealand the *marae* was simply the village assembly place and the term was also applied to the yard in front of a house. In the Tahitian dialect the term was applied to any sacred place but the word had, as a secondary meaning, "cleared of wood, weeds, rubbish, etc., as a garden." (44, p. 213.) In Hawaiian *malae* means: "calm; calmness; smooth, as a plain." From this it would appear either that the original meaning of the term was "smooth, level and cleared," or that the thing to which it was originally applied, and from which it passed into secondary usage, was a level open space. Its application to such structures as the sacred platforms of southern islands of the Marquesas and the pyramids of Tahiti is therefore not in agreement with its wider meaning in Polynesian languages. In the northern islands and in Easter Island the sacred structures were known by an entirely different term, *ahu*, which also enters into various compound words used to designate shrines and sacred places in New Zealand. In other Polynesian dialects, this term evidently carries the idea of gathering together and heaping up and is therefore better suited to the Marquesan sacred places than the term *marae* or *me'ae*. The Marquesan name for an assembly place, *tohua*, finds a parallel in the Raiatean *tahua*, but the term seems to have been unknown outside of the Society Islands and the Marquesas. It is possible that *tohua* is the ancient term for assembly place in southeastern Polynesia and *ahu* the term for a sacred platform, and that the word *marae*, with the significance of assembly place, was introduced by immigrants from western Polynesia where it was in general use. Through the fusion of the assembly place and sacred place, *marae* or *me'ae* came in time to be applied to all sacred structures and finally passed to southern islands of the Marquesas with this significance.

MORTUARY STRUCTURES

The methods of disposal of the dead were essentially the same everywhere in the Marquesas but there were many local, and perhaps even individual, differences in the minor details. (Customs associated with funerals have been described by Handy, 19.)

MORTUARY PRACTICES

Simple earth burial appears to have been limited to persons who had no relatives to care for their bodies properly, and to certain classes of individuals whose ghosts were believed to be dangerous. These included women who had died in childbirth, and, according to Handy, lepers, consumptives, and the insane. A reliable European informant described finding the flexed burial of an adult on the island of Uapou, but in the absence of other information it would be unsafe to say that the flexed position was the rule. In times of pestilence the use of earth burial was extended to include all but the highest classes and bodies were even thrown into abandoned *ma* pits or into the pits in house platforms, after which the house was burned and the site abandoned. In normal times nearly all bodies were subjected to a crude process of mummification and preserved for a considerable time before final disposal. The mummification consisted of exposure to the sun and long continued rubbing with coconut oil. The body was eviscerated through the anus, apparently without the aid of an incision. According to native informants the gases generated by putrefaction caused the viscera to break out at the anus within two or three days after death and they could then be removed without difficulty. The brain was not removed and no attempt was made to treat the interior of the body cavity. The epidermis of chiefs and other persons of importance was sometimes rubbed off, apparently with the idea of making the tattoo designs more clearly visible. Handy (19, p. 110) says: "The skin itself was sometimes removed from the body and kept in the house of the family as a sacred relic." In Pere Pierre's manuscript it is said that for a time the body was rubbed thrice a day with raw *ma*, bread-fruit paste. This practice, which seems to have been forgotten by the present natives, is of considerable interest in view of the Hawaiian practice of varnishing corpses with a preparation of ti root.

During mummification the body might be kept either in the dwelling or in a small house built for the purpose. Mummification in the dwelling appears to have been the rule in Fatuhiva and was practised to a consider-

able extent in Uapou and in at least some parts of Nukuhiva. In Hivaoa and Tahuata, the use of a separate house was nearly constant. The houses used for mummification were ordinarily small temporary structures which were erected near the dwelling of the family or, if the corpse were that of a chief or a priest, in a *me'ae*. In Nukuhiva and Uapou the embalming houses were built directly on the ground within an enclosure. In Uahuka, Tahuata, and in southern Hivaoa they were raised on small stone platforms of characteristic shape. Such platforms were also occasionally used in southern Nukuhiva but appear to have been rare on that island. In northeastern Hivaoa platforms were not used and the houses for mummification are said not to have been enclosed.

Platforms for embalming houses, called by the natives *taha tupapa'u*, vary somewhat in their details but have certain fairly constant features which make them easily distinguishable from other stone structures. They are smaller and much higher than the platforms of ordinary dwellings. In most of them the top of the platform is divided longitudinally into two unequal parts. The narrower part, the front, is paved with slabs or boulders. The broader section, at the rear, is depressed 18 inches to 2 feet below this paved part and is surrounded by a line of stone slabs set on edge, their tops projecting six inches to one foot above the level of the front pavement. The depression is lined with slabs or waterworn boulders which slope downward to the center from the front and rear forming a trough V-shaped in cross section. There are a number of individual variations from this arrangement. In some of the larger and better built *taha tupapa'u* a single course of carefully matched waterworn boulders is laid along the tops of the slabs edging the depression and the depressed portion is divided into two nearly equal parts by a transverse wall, the top of which is at the level of the edging slabs, the two halves of the depression being at different levels. The depressed portion of some *taha tupapa'u* runs for only half or two-thirds the length of the platform. Two structures in the valley of Hanahehe, Hivaoa (p. 158), show a marked departure from the common form: the depressions are in the center instead of at the rear of these platforms and are lined with slabs of cut stone whose tops are level with the surrounding pavement. The depressions must have been originally nearly three feet deep. Pits running down from the depressed portion of the platform top to the original ground level are a nearly constant feature of the structures in Uahuka but are less numerous in Hivaoa. Such pits aided in the drainage of the juices which collected in the depression and were also used for the disposal of the viscera and small bones after the disintegration of the body.

A few stone walled enclosures within which houses for embalming had

been built were seen on the island of Hivaoa. Those in the valley of Hanahui were nearly six feet high and without openings.

The practice of mummification has been abandoned for many years and no well preserved embalming houses were seen. From the posts still standing it is evident that the *taha tupa'a'u* in Hivaoa were similar in form to an ordinary dwelling and covered the whole top of the platform. The end posts are much higher in proportion to the size of the structure than those of ordinary dwellings, indicating that the rear roof had a very steep pitch. The front, which was probably open, was very low; one set of front posts measured only 26 inches. Most of the posts were undecorated but some were carved into small Atlantid or Caryatid figures. Du Petit-Thouars mentions an embalming house on the island of Tahuata the posts of which were painted red and yellow. Handy (19 a) states that when in use the house was decorated with streamers of red and white tapa.

During the process of mummification the body was kept on a bier. Both portable and stationary biers were in use. The portable type was probably used wherever the corpse was mummified in the dwelling. One on the island of Uapou is described as follows by Handy: (19, p. 112-3).

The main part of this *papa tupa'aku* [bier] consisted of a heavy, hollowed board (*papa*) of exactly the same form as those used for beating *popoi*. This rested on legs called *toko papa*, spreading from a central support lashed to the board . . . There was one pair of legs at each end of the board and another pair in the middle, so that the pairs of legs were at right angles to the bier. The legs were carved with designs and the feet with conventional human figures. Poles for carrying the bier were lashed to the feet on either side. The bottom of the board was either carved or decorated with black or red ornamental sennit lashed over white bark cloth.

The stationary biers are quite different. The one seen on Hivaoa is 7 feet long and 2 feet, 5 inches wide. Four peeled poles of *fau*, each approximately 1 1-2 inches in diameter, which make the side and ends, are strongly, but not ornamentally, lashed together with sennit at their intersections, the ends projecting 4 to 6 inches beyond the body of the bier. Upon this square frame a number of smaller *fau* rods are laid longitudinally, their ends being lashed to the cross pieces with sennit. According to Handy, biers of this sort were raised on posts about four feet high and placed on the center of the platform of the embalming house. According to other information they were placed on the rear of the platform over the depressed portion and rested upon the upright stones which surrounded the depression. It seems probable that in houses built directly on the ground the bier was raised on posts but that in houses with a platform it was not so raised. The descriptions by Langsdorff (26, p. 154), Melville (30, p. 205), and Stewart

(40, p. 287) indicate that on Nukuhiva were some stationary biers made of interwoven bamboo. Stewart speaks of a bier "of spears and other warlike weapons fastened in wicker work together."

While undergoing mummification the body lay at full length on the bier or was propped up in a squatting position with the head and arms supported by two sticks lashed together in the form of a cross. The corpse was covered with a sheet of tapa.

There was evidently a good deal of variation in the treatment of the body after mummification. In Puamau, Hivaoa, the corpse was propped in a squatting position in the embalming house and kept there for a considerable time. A similar practice is said to have existed in Fatuhiva although there the corpse was kept in the dwelling. It was dressed and provided with ornaments and, according to one old informant, "it was hard to tell it from a living man." In Atuona, Hivaoa, most of the bodies seem to have been left on the bier until they fell to pieces. In Nukuhiva the embalmed body seems ordinarily to have been placed in a coffin and preserved for a time in the dwelling, in the embalming house, or in a house erected for it in some sacred place. Melville (30, p. 206) describes three bodies which he saw in Nukuhiva: "One was enveloped in immense folds of tapa, with only the face exposed, and hung erect against the side of the dwelling. The others were stretched out upon biers of bamboo in open elevated temples, which seemed consecrated to their memory." It is interesting that none of the early writers on Nukuhiva mention the practice of placing the coffined body in the branches of a tree in a *me'ae*, for the remains show that this form of disposal was very common on that island. It seems probable that tree burial was a form of final disposal resorted to only after the body had been kept in the dwelling or embalming house for the prescribed mourning period.

Coffins were used throughout the Marquesas, but they must have been used only after the body had undergone mummification for they are much too narrow to have contained unshrunk corpses. Coffins for adults are 7 to 8 feet in length and rarely over 18 inches in width. Many are as little as one foot wide. The cavity was about one foot deep. The thickness of the wood in the sides and bottom varies from 3-4 inch to 1 1-4 inches and in the ends from 2 to 4 inches. The coffin used in Hivaoa, Tahuata, and Fatuhiva was a flat ended, straight sided trough. All those seen are of breadfruit wood, but Lambert (25, p. 138) mentions coffins in Fatuhiva made from sections of coconut logs. All surfaces were rubbed down smoothly, obliterating the marks of the adzing, but the workmanship of most of the coffins seen is rather poor. Few if any of these trough-like coffins were carved, the wood being merely a base to which were applied

the real decorations, consisting of a covering of white tapa held in place by elaborate lashings of red and black sennit. Handy informs me that the designs for these lashings were derived from string figures and their arrangement was the work of a special craftsman, also that handles were bound to either side of the coffin with ornamental sennit lashings. Many fairly well preserved coffins seen at Hivaoa burial sites lacked the ornamental lashings, tapa covering, and handles, and it seems probable that these features were sometimes omitted.

Before it was laid in the coffin, the body was wrapped in a shroud of white tapa and then usually covered with a layer of banana or ti leaves. The cover of the coffin was made of peeled poles of fau about one and a half inches in diameter, cut the length of the coffin, laid side by side, and fastened together with sennit cords to form a sort of heavy mat which was rigid in one direction and flexible in the other, like the pole mats used as walls for houses. The mat was laid on the coffin with the poles lengthwise, its edges being brought well down on either side of the coffin body and fastened to crosspieces at the ends. (See Pl. III, C.) Some coffins were enclosed in a network of flat plaited rope of fau bark which was laid on in ornamental patterns.

Another type of coffin was used in Nukuhiva and Uahuka and possibly in Uapou. There are well preserved examples in a burial cave on Uahuka but the scruples of my guide prevented the taking of photographs or exact measurements. The coffins are 5 to 9 feet long, 16 inches to 2 feet wide at the center, tapering to 6 to 10 inches at the ends. Their edges are straight but at either end is a vertical flange, rounded at the corners, which rises 4 to 6 inches above the level of the sides. None of the coffins seen have lids but Stewart (40, p. 283) describes a Nukuhivan coffin as "something in the shape of a canoe, with a neatly wrought lid," and it seems probable that close fitting wooden lids were used with some coffins of this type and that the flanges were designed to keep the lid in place. The coffins were hewn from single logs of breadfruit or temanu wood and beautifully made, the curves being even and regular and the finish as smooth as that of a bowl. Except for the flanges at the ends, the outlines of the coffins are nearly the same as those of the underbodies of the large Marquesan canoes and it seems possible that they represent a development from some earlier form of canoe burial. None of the coffins seen in northern islands of the Marquesas are carved, none have the tapa coverings, ornamental lashings, and fau pole covers characteristic in southern Marquesas islands. The bodies in the Uahuka burial cave had been wrapped in shrouds of white tapa before being placed in the coffins but no outer covering of leaves is present. To judge from the remains, coffins were much more used in

northern than in southern islands and it seems probable that in the southern islands they were used only for chiefs and persons of importance.

The choice of methods for the final disposal of the dead seem to have depended partly upon the rank of the deceased and partly upon local preferences. Handy informs me that the priests of the two highest ranks (*tau'a* and *tuhuna o'ono*) were buried in pits or vaults within the precincts of the *me'ae*, after the bodies had been mummified, and that in Fatuhiva the *tau'a* was so sacred that his body could not be mummified; it was placed on a bier and carried to a cave in the mountains. It is evident from the remains that many bodies were placed in coffins, taken to sacred places and placed on one of the platforms or in the branches of a tree and left. When the bones had become exposed through the decay of the coffin they were gathered up and placed in a pit in the platform or buried somewhere in the precincts. Tree burial of this sort seems to have been much more common in Nukuhiva and Uahuka than in Hivaoa. In Puamau, Hivaoa, I was told that when the time came for final disposal, either the entire corpse in a coffin or the skull and long bones were carried up to one or the other of two *me'ae* and delivered to the priests who then concealed the remains in a place known only to themselves. Bodies not placed in coffins were usually left on the bier until they had partly disintegrated. The skull and long bones were then removed, cleaned, wrapped in tapa, and tied up in a bundle. Of some skeletons only the skull was preserved, as the mana of the dead man was supposed to reside primarily in that. According to Handy, skulls of bodies in coffins were removed and preserved separately but the actual remains indicate that this practice must have been rare. Handy states also that the skulls of chiefs were placed in small oval vessels decorated with a bird's head, and were kept in the *me'ae* and exhibited at certain ceremonies. It seems probable that the tapa covered skulls preserved in some European collections are chiefs' skulls which have been used as cult objects, for their decorations are quite different from those of the war trophy heads described by early writers. In Nukuhiva the tapa wrapped bones were sometimes hung from the roof of the dwelling and kept for an indefinite period and the same practice probably existed in the other Marquesas islands. Ultimately the skulls, or skulls and bones, were taken to a *me'ae* and left there. According to a reliable Atuona informant all places used for the final disposal of the dead, other than burial caves, clefts and rock slides, were classed as *me'ae*. Such mortuary *me'ae* might consist of nothing more than a tree or a barren hill top and did not necessarily contain any structures. In many, but not all, *me'ae* which contained platforms there were pits, into which the skulls and other bones were thrown. Some remains seem to have been buried within

the precincts or simply laid on one of the platforms. My informant said that only the bones of persons of no importance were placed in burial caves but this statement was not borne out by information obtained in the valleys of Hanamenu and Hanapaoa, on the same island, and the presence of coffins and offerings in many of the Atuona cave and rock burials makes it doubtful whether his statement holds even for this valley. It is certain that in Hivaoa many of the caves and rock clefts in which remains were placed were not classed as *me'ae* by the natives, even though they contained the remains of a considerable number of individuals. It seems possible that they were places of secondary disposal to which the remains were taken after a sojourn in the *me'ae*.

Very few real caves exist in the Marquesas and the only large cave seen had not been used for burial, probably because it was too easy of access. Most of the so-called burial caves are nothing more than ledges protected by a slight overhang and very few of them are large enough to accommodate more than two or three coffins (Pl. III, *D*). The burial place in the valley of Hanaei, Uahuka (p. 58) is an exception. It is a ledge rather than a cave, but the sheltered space is about 30 feet long and 5 to 10 feet wide. All the bodies in it had originally been confined. Most burial caves in Hivaoa, which are much smaller, contain only one or two confined bodies with a varying number of skulls and bones. The unconfined remains are piled together without regular order. The long bones of many skeletons are roughly tied together with sennit but nearly all the tapa wrappings described by informants have disappeared. A few small caves and ledges contain only skulls and bones with no trace of coffins.

Most of the places which the natives chose for the disposal of their dead are very difficult of access. Many of them can be reached only by ropes from above. In Hanamenu, Hivaoa, a small aperture high up in the face of the cliff was pointed out as the burial place of a former chief. An old woman who claimed to have been an eye witness to the burial stated that the body had been placed in a squatting position, knees to chin, then bound with ropes, and lowered until it was opposite the opening. A man sent down on another rope thrust the body into the aperture head first and placed some offerings with it.

Many skulls and bones especially of persons of little importance were thrown into deep clefts in the rock or hidden among the large irregular stones of rock slides—a method of disposal which afforded little protection from the elements or from human enemies. On a few such rock-slides, *me'ae* with platforms and images were built. The skulls were usually hidden among the rocks singly or in groups of two or three but

when large apertures were available they were filled with remains and walled up.

One of the most interesting of the mortuary sites visited was the *me'ae* of Puniaoha, Atuona Valley, where niches in a cliff contained skulls. (See p. 143.) No other sites of this sort were seen, but Handy visited a small burial cave on Uapou which either is artificial or has been artificially enlarged.

Mortuary offerings were found with some of the burials on ledges and in caves and are said to have been placed also with bodies exposed in the *me'ae*. These offerings, at no place very numerous, consisted of vessels containing food, ornaments, shell trumpets, and a few weapons and miscellaneous objects. No offerings were found with the remains in clefts and rock slides. With the exception of the vessels and trumpets all the offerings apparently had been broken at the time they were placed with the remains. This "killing" of mortuary offerings has not been recorded from any other part of Polynesia.

Tautain (41, p. 677) says that a wooden image of the deceased figured in the funeral ceremonies of important chiefs but gives no details of its use. Melville (30, p. 183-4) describes the tomb of a chief in Taipivai Valley, Nukuhiva, as follows:

In one of the most secluded portions of the valley . . . was the mausoleum of a deceased warrior chief. Like all the other edifices of any note, it was raised upon a small pi-pi of stones, which, being of unusual height, was a conspicuous object from a distance. A light thatching of bleached palmetto leaves hung over it like a self supporting canopy; for it was not until you came very near that it was supported by four slender columns of bamboo, rising at each corner to a little more than the height of a man. A clear area of a few yards surrounded the pi-pi, and was enclosed by four trunks of cocoanut trees, resting at the angles on massive blocks of stone . . .

On all sides, as you approached this silent spot, you caught sight of the dead chief's effigy, seated in the stern of a canoe, which was raised on a light frame a few inches above the level of the pi-pi. The canoe was about seven feet in length; of a rich, dark colored wood, handsomely carved, and adorned in many places with variegated bindings of stained sennate, into which were ingeniously wrought a number of sparkling sea shells, and a belt of the same shells ran all around it. The body of the figure—of whatever material it may have been made—was effectually concealed in a heavy robe of brown tapa, revealing only the hands and head; the latter skilfully carved in wood, and surmounted by a superb arch of plumes . . . The long leaves of the palmetto dropped over the eaves, and through them you saw the warrior, holding his paddle with both hands in the act of rowing, leaning forward and inclining his head, as if eager to hurry on his voyage. Glaring at him forever, and face to face, was a polished human skull, which crowned the prow of the canoe. The spectral figure head, reversed in its position, glancing backwards, seemed to mock the impatient attitude of the warrior.

Porter (32, p. III) mentions seeing four large war canoes, each with

an effigy of a man in the stern, in one of the *me'ae* in Taiohae Valley. It seems probable that these were funerary monuments similar to the one described by Melville. Neither Melville nor Porter state whether the remains of the chief were placed in the canoe. The existence of such effigies would seem to indicate that the spirits of the dead were believed to go to their final resting place by sea and is of considerable interest in view of the canoe-like form of the coffins in northern Marquesas islands. Canoe effigies are not mentioned by any of the early writers on southern Marquesas islands and no account of their use was obtained from the natives.

In this connection it may be mentioned that the chiefs of Hakau valley, Nukuhiva, are said always to have been buried on the small island of Motuiti, which lies several miles to the north. The coffined corpse was placed on a stage in the center of a large war canoe. A single steersman sat in the stern while the paddlers were in the bow.

COMPARISON

The Marquesan mortuary practices find their closest parallel in those of the Society Islands. The excellent account of these given by Ellis (9, vol. 1, pp. 399-406) may be summarized here. Both earth burial in a flexed position, and mummification, with a prolonged preservation of the corpse, were practiced. Earth burial was limited to commoners and was contemptuously called "burial of a dog." The method of mummification was practically the same as that used in the Marquesas but the art seems to have been rather more highly developed. In some burials the brain as well as the viscera was removed and the body cavity packed with tapa soaked in oil. The work of mummifying the body was carried on in a small house built for the purpose, the corpse being laid upon a movable bier. After mummification the corpse was clothed and placed in a sitting position. On a small altar built in front of it offerings were made daily. When the body fell to pieces the skull was preserved in the family dwelling and other parts buried in a marae or all the remains were hidden in a cave. In some of the islands the mummy was wrapped in many folds of tapa and hung from the roof of the dwelling, but this does not seem to have been a Tahitian practice. According to Tahitian traditions the work of embalming was originally carried on in the dwelling and the use of a separate house for this purpose marked the beginning of a new era. Ellis makes no mention of the use of coffins.

These practices in the Society Islands agree so closely with those in the Marquesas that the two island groups may be considered as a unit. The few differences which exist would seem to point to the survival in the

Marquesas of the more primitive methods, a natural result of greater isolation. The methods of mummification practiced in the Marquesas and Society islands appear in Mangareva (31, pp. 100-02), where the body was kept on a platform raised on posts (2, vol. 1, p. 125) and finally deposited in a cave. The early accounts are very brief and their failure to mention earth burial does not lessen the probability that it existed. In the Tuamotus the bodies of chiefs were exposed and those of commoners buried (34, vol. 2, p. 281). There are no reliable accounts of mummification, but as the Tuamotus were settled from Tahiti, Mangareva, and the Marquesas (14, p. 158) it probably existed.

In Easter Island earth burial was rare and mummification appears to have been unknown. Burial in stone structures and also exposure on the image platforms were practices and, according to Routledge (35, p. 229) the choice of these methods was not governed by any fixed rule. Burial was preferred for those whose ghosts might prove troublesome and also for those whose bodies were likely to be stolen and burned by enemies. When exposed, the bodies were wrapped in mats, placed on a raised frame, and left until they fell to pieces. The bones were then gathered up and placed in vaults in the *ahu* platform. The skulls of the members of one clan were preserved.

In a detailed account of Maori mortuary practices Tregear (43, pp. 386-401) states that slaves and commoners were buried in the ground and even the bodies of chiefs might be interred in the verandas of their houses. The bodies of important persons were tied up in a flexed position and placed in a tree, on a stage, in a coffin, or in a canoe and left in the depths of the forest or in some sacred place. A year or so later the bones were cleaned, oiled, and painted with red ocher, made into a bundle, and hidden in a cave, chasm, or hollow tree. The existence of mummification in New Zealand has been disputed by some authorities, but there can be little doubt that it was sometimes practiced in at least the South Island. According to Hare Hongi (20, pp. 269-72) the body was eviscerated, apparently by the anus, packed with tow, and then dried over an oven. The operation was performed in a small house built for the purpose and the body was kept in this house for a long time and occasionally exhibited. All the Maori seem to have preserved the heads of some chiefs. In the northern part of South Island and in a few parts of North Island the dead were cremated. Most of the Maori disliked this method, but did not scruple to use it when there was danger that their dead might fall into the hands of the enemy. Tregear concludes that cremation in volcanic fires was an ancient Maori custom.

The closely related Moriori of the Chatham Islands usually practiced

earth burial with the face toward the west. The bodies of commoners were wrapped in fern leaves before interment while those of chiefs were placed in canoes or in covered coffins. For some commoners partial interment, with the head or body above ground, was practiced. The bones were hidden in hollow trees. The bodies of noted fishermen were sometimes fastened in canoes and set adrift and one Moriori tribe practiced cremation. (See 36 a, pp. 43-49; 43, p. 581.)

The accounts of Hawaiian mortuary practices given by early writers agree on a few main points but vary considerably in details. Emory (9 b) has made a special study of these practices and I am indebted to him for most of the facts here presented. Where the geological conditions permitted, it was the custom to bury the bodies of commoners in the earth in a flexed position. In districts where thin soil covered the lava flows, cave burial seems to have been the rule for all classes. The finding of ivory emblems of rank with two earth burials on Lanai indicates that this method was sometimes employed even for chiefs. The skulls and long bones of important chiefs were preserved for an indefinite period. The flesh and small bones were buried or burned, and the skulls either deified and kept in a *luakini* or placed in a small sacred house near the family residence. If kept near dwellings, they were guarded night and day and, on the approach of danger, were carried away and hidden in some secret place. Great care was exercised to prevent such relics from falling into the hands of enemies. Most of them were placed in caves, but some were thrown into the sea, and Fornander (12, vol. 2, p. 283) relates one instance in which they were ground into powder and mixed with the food given to unsuspecting feasters. According to Ellis (9, vol. 4, p. 59) the bodies of priests and of chiefs of lesser rank were wrapped in many folds of tapa and buried in an extended position. A pile of stones or a circle of high stones marked the grave. Priests were generally buried within the heiau at which they had officiated. The platform tomb of a celebrated priest is described by Ellis (op. cit., p. 114) as a stone structure 8 feet square and 5 feet high having in the center a mound of earth higher than the walls. A small house was built over it. This structure probably was not a heiau. Similar platforms investigated by Emory contained stone vaults into which one to four bodies had been placed and one burial was found in the soil below a platform. Whether the Hawaiians ever exposed their dead is uncertain. This practice is not mentioned by any of the early writers, but Emory concludes that it may have existed. Malo (28, p. 132) describes a method of preserving the body which consisted of cutting it open, removing the viscera, and filling the cavity with salt. Fornander (12, vol. 1, p. 106) says that bodies were covered with a preparation made from the root of the ti plant

which sealed the pores and delayed decomposition. Bodies deposited in burial caves were often placed in canoes, but the prehistoric use of true coffins seems doubtful. Ellis (9, vol. 4, p. 361) says that the bodies of fishermen were wrapped in red tapa and thrown into the sea.

In the Cook Islands corpses were buried in the earth, placed in a cave, or thrown into a chasm. Rank seems to have played no part in determining their disposal, although Gill (16, pp. 71-2) speaks of a burial cave that had one entrance for chiefs and another for commoners. Earth burials were made in maraes. The corpse was buried in a flexed position, face down, and head to the east. The limbs were tied and the grave covered with heavy stones to prevent the ghost from troubling the living. Bodies placed in caves were carried out into the sun from time to time and rubbed with coconut oil so that they finally became mummified. They were not eviscerated, however, and the work of mummification does not seem to have been begun until after they were placed in the cave. At one place a small house for the corpse was built outside the entrance of the burial cave (16, p. 76). The bodies of warriors might be stolen and burned by enemies.

According to Pritchard (33, pp. 148-9), in Samoa earth burial was the rule for all classes. The corpse was laid in an extended position with the head to the east. Commoners were usually interred the day after death, but to give time for appropriate ceremonies the bodies of chiefs were preserved for ten to thirty days, then placed in canoes or in crude wooden coffins. Their graves were marked by low stone platforms about four feet high at the head and sloping to three feet at the foot. The skulls of some chiefs were preserved as sacred relics. The bodies of one family of chiefs were mummified by a method practically identical with that used in Tahiti, and kept in a house built for the purpose. Rivers (34, vol. 2, p. 270) says that some corpses were set adrift in canoes.

In Niue corpses were set adrift in canoes (34, vol. 2, p. 270; 45, p. 306) or exposed on a heap of stones in the forest and the bones placed in a cave or vault.

In Tonga earth burial in an extended position seems to have been the rule for all classes. The bodies of chiefs were placed in stone vaults in mounds. Mariner (29, vol. 1, p. 338) speaks of the body of a chief's daughter being placed in a canoe model before it was lowered into the vault but there seems to be no other mention of the use of canoes or coffins. Mummification and skull preservation seem to have been unknown.

From the facts recorded, there appear to be well marked differences between the mortuary practices of the western and the southern marginal

Polynesian peoples, those of the Hawaiians occupying an intermediate position. In western Polynesia extended earth burial was the rule for all classes. In southern marginal Polynesia earth burial was limited to the lowest classes, or to persons whose ghosts might, it was thought, prove malevolent, and the body was placed in a flexed position. In practically all the marginal islands the skulls, or skulls and long bones, of chiefs were preserved for an indefinite period after the disintegration of the body. This practice was well developed in Hawaii where exposure or long continued preservation of the body does not seem to have existed at the beginning of the historic period. It is evident from the distribution of the practices of exposure, body preservation, and skull preservation that the three are closely related and it seems probable that all arose from the same underlying idea of keeping the dead near the living as long as possible. Methods of disposal closely similar to those of southern marginal Polynesia were of wide occurrence in eastern Melanesia (34, vol. 2, pp. 265-8) and the custom of preserving the skulls of chiefs was almost universal in that area. The presence of skull preservation in Hawaii, where there is little if any indication of Melanesian influence, suggests that exposure and skull preservation were features of an early Polynesian culture and that the presence of these practices in Melanesia may be due to the influence of this culture.

A practically uniform method of mummification was practiced in the Marquesas, Mangareva, the Society Islands, and by one family of chiefs in Samoa. The body was eviscerated through the anus, anointed with coconut oil, and dried in the sun. A slightly different method was employed in New Zealand but its distinctive feature, the drying of the corpse over an oven, might easily have arisen from the local climatic conditions. The Cook Islanders practiced a semi-mummification by anointing and sun-drying without evisceration. In Hawaii, on the other hand, mummification seems to have been unknown. The methods of temporary preservation were:—(a) evisceration by an incision and packing the body cavity with salt, (b) varnishing the corpse with ti root. Several methods of temporary preservation were practiced in Melanesia but mummification by the Tahitian method seems to have been unknown. From this it appears probable that although the custom of body or bone preservation was introduced into Polynesia by some immigrant group, the elaborate method of mummification practiced in southeastern Polynesia was not developed until after the settlement of that region. Its high development in the Society Islands and the position of those islands with regard to the others in which it was practiced points to the Society Islands as its probable place of origin.

Rivers (34, vol. 2, p. 282) concludes that the simultaneous occurrence in marginal Polynesia of exposure or preservation for chiefs and of flexed

burial for commoners is a result of cultural superposition and that earth burial was the practice of the older and submerged stratum of the population. He recognizes two other possibilities: (a) that the bodies of chiefs may have been preserved because this was regarded as an honor appropriate to their rank, and (b) that the practice of interment may have been introduced later and adopted by commoners but ignored by chiefs. Although there are clear indications of cultural superposition in marginal Polynesia, all the evidence seems to indicate that the last wave of immigrants were of western Polynesian origin. In western Polynesia earth burial in an extended position was the rule for all classes and it seems highly improbable, therefore, that the practices of body and bone preservation were introduced into marginal Polynesia by these latest arrivals. The suggestion of Rivers that the practice of interment may have been introduced at a later date and adopted by commoners but ignored by chiefs also seems improbable, for marginal Polynesian earth burials were practically always in a flexed position, while the western Polynesian burials were extended. I am convinced that both flexed earth burial and body or bone preservation were practiced in marginal Polynesia before the arrival of the last group of immigrants, but it is impossible to tell whether these two methods of disposal are originally referable to the same or to different cultures. In the Society Islands and New Zealand, where earth burial seems to have been the rule for commoners and exposure or preservation for chiefs, the flexed position was employed for both, although in those parts of Polynesia in which earth burial alone was practiced the extended position was constant. In the Cook Islands, Easter Island, and the Marquesas the method of disposal seems to have been governed by considerations other than those of rank; bodies were buried through fear of the ghost, because of a desire to protect them from enemies, or because there was no one to give them proper care and attention.

The conditions in marginal Polynesia can be explained by the following hypothesis:—The first settlers of the region employed earth burial for the very poor and for those whose ghosts might prove malevolent but kept the bodies of persons of importance above ground until their disintegration and later preserved the skulls and large bones. They probably kept the dead in the dwelling with the living, a practice which still exists in some parts of Melanesia. In time they developed an effective method of mummification which rendered possible a prolonged preservation of the body. The Hawaiians, who had brought with them the same original methods of disposal, failed to discover this process and either did not attempt to delay decomposition or employed other and less effective means. Their inability to preserve the corpse for any length of time led to a more general

use of cave and earth burial and a concentration upon the preservation of the bones rather than the entire body.

The last wave of immigrants, who had been accustomed to bury their dead in an extended position and to place the bodies of their chiefs in vaults, found on their arrival in the Society Islands that earth burial carried a social stigma and that the bodies of all important persons were mummified. They probably did not arrive in overwhelming numbers and it was vitally necessary for them to maintain their prestige. They therefore abandoned their own practice, which was locally considered dishonorable, and adopted that of mummification which was associated with chiefly rank in the minds of the natives. In Tahiti the use of a separate house for embalming marked the beginning of a new era, the *hua una* or polished age, which continued until the time of the discovery by Europeans (9, vol. 1, p. 404). It seems possible, therefore, that this feature was due to the newcomers who, while willing to adopt the method of preservation, shunned the close contact with the corpse entailed by keeping it in the dwelling.

In the Marquesas the newcomers found the same conditions as in the Society Islands and also adopted the custom of mummification. The priests, always the most conservative element, retained their original custom of earth or vault burial but used it only as a method of final disposal preceded by mummification and preservation. The tapu character of the priest and the fear of his ghost may have contributed to the preservation of this method since the historic Marquesans buried those whose spirits were thought to be malevolent.

In Hawaii the later immigrants found earth and cave burial in more general use than in the southern islands and a custom of preserving the bones rather than the bodies of chiefs. These practices were not incompatible with their own and in course of time the two became blended. The priests and some of the lesser chiefs retained their original custom of vault burial; the high chiefs adopted the native method of bone preservation. The practice of cave burial differed little from the newcomers' own practice of vault burial and was freely adopted by them.

The occurrence of extended earth or vault burial as the only form of disposal in Tonga and the dominant form in Samoa is of great interest in view of the conditions in Micronesia. In the Gilbert Islands extended earth burial was the rule, but some bodies were kept in the dwelling until they fell to pieces and the preservation of chiefs' skulls was general (10, p. 47). In the Marshall Islands extended earth burial was the rule for men but some bodies of women were thrown into the sea (10, p. 138). The grave

was covered with a mound of stones faced with coral slabs, a practice reminiscent of the Tongan and Samoan grave mounds. In the Carolines earth burial was the rule, but sea burial was used in a few islands as an alternative method. In Ruk the bones of the dead were sometimes preserved in the dwelling, but the practice seems not to have been general (10, p. 318). Burials in stone vaults or chambers have been found in the famous ruins at Ponape. In both the Gilberts and Carolines the corpse was laid with the head east, as in Samoa and the Cook Islands. The flexed position seems not to have been used in Micronesia and there are no records of the use of coffins or canoes in burial.

Whether the western Polynesian practice of extended earth burial was due to Micronesian influence it is impossible to say, but the continuous geographic distribution of this method of disposal points to its common origin for both regions. It is also suggestive that the practice of skull preservation was limited in Micronesia to the Gilbert Islands, the group which, from its location, was most open to influence from marginal Polynesia.

Final disposal in caves was very wide-spread in Polynesia, but as this method was practiced by primitive people all over the world wherever the geographic conditions permitted, it is of little value in a comparative study. The custom of placing the body in a canoe or canoe-shaped coffin existed in Chatham Islands, New Zealand, the Marquesas, Hawaii, and Samoa, with a single recorded instance in Tonga.

Rivers concludes that this practice was a survival of sea burial, which existed in historic times in Chatham Islands, Niue, and Samoa. Sea burial seems not to have been general in any of these localities and in Chatham Islands was limited to famous fishermen (36 a). The Hawaiian practice of throwing the bodies of fishermen into the sea is interesting in this connection. In Polynesia the custom of placing the bones or bodies of the dead in trees seems to have been limited to the Marquesas, New Zealand, and Chatham Islands, but it occurred in several parts of eastern Melanesia. The practice of cremation was limited to southern New Zealand and Chatham Islands with a sporadic instance in Fanning Island. In Melanesia it existed in a few localities in the Solomon Islands (34, vol. 2, pp. 266-7) but was unknown elsewhere.

SCULPTURE

The Marquesans were expert carvers in both wood and stone. They decorated many of their artifacts with elaborate and beautiful designs and carved human effigies ranging in size from statuettes only a few inches high to great figures over eight feet tall. The methods used by wood carvers, the designs employed on different classes of objects, and the form and use of small figures of wood and stone, have been described by me in a previous publication (27). It remains to discuss relief carvings on stone and the effigies of larger size which were permanent parts of structures. The distinction between large and small figures may seem an arbitrary one, but is rendered advisable by the differences in significance and method of employment which existed between them. Designs or figures incised on stone are described on page 96.

IMAGES

Practically all Marquesan images were made in conventionalized human form. The figure of a bird in a temple on Nukuhiva mentioned by Garcia (18, p. 58) is the only record of animal forms. The images were carved either from wood—*mio*, breadfruit, and *temanu* being the species preferred—or from stone, commonly red or grey tuff, and the distinction between them is almost entirely one of material. Both wooden and stone figures were employed in the same way, frequently on the same site, and their convention is much the same. Wooden figures were originally much more numerous but because of the neglect of the old sacred places most of them are in the last stages of decay, and within ten or fifteen years all of them probably will have disappeared. Stone figures are reported from all the islands but seem to have been most numerous in Hivaoa. The manufacture of the smaller stone figures, used as architectural decorations, continued in that island until well within the historic period, and figures known to have been made within the last hundred years are among the best products of the Marquesan sculptor's art. Even the largest of the stone images were unquestionably made by the ancestors of the present natives.

WOODEN IMAGES

The controlling factor in the design of the large wooden figures seems to have been the shape of the original log. As nearly all figures were carved from logs, the limbs had to be so arranged as to fall within the

cylindrical outline of the log, thus greatly limiting the choice of positions. (See Pls. IV, C and V, C.) One wooden figure (Pl. IV, A), apparently carved from a thick slab was seen, but this is evidently exceptional. In making the figures, the artist marked out the proportions of the different parts and then began work on the legs, continuing from them upward. The head was brought to approximately its final shape and smoothly finished before the features were carved, a method which accounts in part for the extremely low relief in which the features are cut. The mouth was finished first, then the eyes. The head was evidently considered the most important part of the figure, and upon it the artist expended his greatest skill. The legs were considered least important; in many figures they are shortened disproportionately or even omitted. With the possible exception of one Atlantid figure, used as a house post, none of the old effigies seen show any attempt at naturalism. The artist followed a definite convention in the representation of all the parts and the grotesqueness of the images is due to this and not to any lack of skill in execution. It seems, indeed, that it was easier to carve naturalistic figures than to adhere to this convention rigidly, for the figures now-a-days carved for sale are much more naturalistic than the genuine ancient ones. Although the convention was fixed in its main points, certain minor variations seem to have been considered allowable. These variations were apparently dependent upon the caprice of the artist and do not seem to constitute local differences. It may be that local differences existed, but wooden images from the islands of Hivaoa, Uahuka, and Uapou are practically identical. It is unfortunate that no Nukuhivan wooden images were seen, as the stone carvings of that island seem to show a slightly different convention than those of Hivaoa. The convention employed by the native artists is revealed by a study of the figures detail by detail.

All the large wooden figures were apparently set up on terraces or platforms. An uncarved projection at the bottom, one to two feet long and usually of smaller diameter than the figure proper, was inserted between the stones of the pavement and served to hold the figure upright. It was entirely concealed when the figure was in position. Above the uncarved portion is a thick projecting flange, running either across the front of the figure or all around, its lower side resting upon the supporting surface. The feet are not as a rule indicated, the legs rising directly from this flange. The legs are shown in a half flexed position, with the lower leg disproportionately long and heavy and the thigh short and thin. The calf of the leg is greatly exaggerated. The knees approach each other closely in front, and the length of the thigh is as great as the diameter of the log permits, the knees and buttocks being on the line of its original

surface. The space between the legs in most figures is pierced to the height of the knees and in few images even higher. The proportion which the length of the legs bears to that of the rest of the figure is extremely variable. In a very few figures the legs are disproportionately long or of natural length, but in most figures they are much too short for the body. Some figures end at the waist, with no legs indicated.

It is rather curious, in view of the sexual habits of the Marquesans, that their figures are singularly free from obscenity. Indeed, they are much less suggestive than those of most other primitive peoples. The only difference between male and female figures is in the representation of the sexual organs and these are not exaggerated. In males the penis is shown as a small projecting knob; the female organs are carved on the plane of the surface of the body and are represented by an oblong depression, within and near the upper end of which is a small knob. In all the legless figures seen the sexual parts are absent.

The bodies of most wooden figures show little or no attempt at modeling. The front of the body slopes outward from the base of the neck or head and then curves downward and outward, reaching its maximum projection at a point approximately opposite the tops of the buttocks. Below this point it slopes inward rapidly. In a few figures the nipples are shown as small knobs, but the breasts are not represented in any of the female figures seen. The sides of the body are either straight or slightly concave. In a few figures the body is smoothly rounded, but in most the sides and front have been treated as separate planes which meet at sharp angles. In some figures the back is flat, but commonly it slopes inward gradually from the shoulders to the top of the buttocks, the shoulders being on the line of the original surface of the log. (See Pl. V, *A*.)

The canons of Marquesan art seem to have permitted only two positions for the arms. Fully eighty per cent of the figures show the upper arms held vertically against the body and the forearms extended forward horizontally with the hands resting upon the stomach. The upper arm is shown as a simple bar, usually of unnatural thinness. The upper edge of the forearm is horizontal; the lower edge slopes downward and forward so that the maximum width of the member comes at the finger tips. The space between the upper arm and body of some figures is pierced, but all the forearms and hands are carved in rather low relief. The hands are shown with five fingers of equal length. The grooves which separate the two outer fingers from the central three are joined behind these, forming a continuous U-shaped line. The finger tips of the two hands as they rest on the stomach are separated by an interval of a few inches.

In the less common pose one arm and hand is placed in the position assumed by most of the figures, but the other hand—either the right or the left—is raised to the mouth. The upper arm, instead of being vertical, slants forward slightly, but both elbows are at the same height. The forearm, greatly exaggerated in length, is carved in low relief, slanting across the front of the body, with the tips of the fingers resting on the lower lip. In some figures the space between the hand and the neck or upper body is pierced.

The head is the most important part of the figure. Most heads are cylindrical and rest either directly on the shoulders or on a thick neck. The back of the head, at its point of maximum projection, extends to the surface of the original log and is shown either flat or rounded, the two forms being about equally common. The jaw juts out over the body to an unnatural degree and from its point the face rises almost vertically. The top of the head, with a very few exceptions, is flat and surrounded with a low horizontal ridge or flange. All heads are disproportionately large, some of them forming a third of the total height of the figure. The features are carved in low relief and are highly conventionalized.

The chin is either lacking or very short. The mouth is shown either as a long narrow oval, with the upper and lower sides straight and parallel for most of their length, or as a segment of a circle, with the upper edge straight and the lower edge curved. The lips are shown as a continuous flat band of uniform width. Between the lips the tongue protrudes, its tip being on the level of their outer surface. The nose is excessively broad, with widely spaced nostrils and a flat bridge. The eyes are surrounded by low narrow rims from the inner ends of which narrow ridges run down to the nose. From the outer ends similar ridges run back to the ears. In carving the eyes the inner edges of the rims were first cut out to the required depth, and the eyeball then made by carving down to the rim cuts from the center of the eye, thus leaving a low but well marked ridge running longitudinally across the center of the eye. Some distance above the eye is a curved ridge, reaching to the top of the head at its center and connecting at its ends with the ridges running from the eye corners to the nose and ear. The space between this ridge and the upper border of the eye is concave. The ears might either be carved in relief upon the sides of the head or shown as projecting flanges, but the ear itself is shown as a double spiral, the spiral which forms the upper lobe being longer than that which forms the lower one. In figures with the ears projecting from the head, in many the center of the lower lobe is pierced, probably for the attachment of ornaments. Most ears simply carved in relief have a circular hole in the center of the lower lobe, drilled

probably for the insertion of a plug of bone or ivory. Stewart (40. p. 319) mentions a double-faced figure in Nukuhiva.

The surfaces of the smaller wooden figures seem to have been rubbed smooth and brought to a high polish by methods similar to those used in bowl manufacture (27, p. 361). Many of the larger images, however, were ornamentally adzed. The condition of most of those seen made determination of the designs impossible, but they seem to be chiefly simple series of horizontal grooves like those on the bodies of large drums. In a few figures slanting grooves seem to have been used on the abdomen, and the buttocks of one large figure in the valley of Atuona, Hivaoa, have been carved with a series of concentric circles. It is rather interesting that, in spite of the high development of tattooing, there seems to have been no attempt to reproduce tattoo designs on the statues.

STONE IMAGES

Marquesan stone figures fall into two classes: true images, and forms which, for lack of a better term, may be called architectural figures. The images were set up in sacred places; the architectural figures were incorporated into the walls of terraces or platforms of both secular and ceremonial structures. (See p. 79.)

True images seem nowhere to have been very numerous, but they are reported from all the large islands. The largest and finest are on Hivaoa. They are less plentiful in northern Marquesas Islands and those seen in Nukuhiva are technically inferior to those from Hivaoa. The only image seen in Uahuka is however, an unusually fine piece of carving.

Most of the stone images agree so closely with the wooden ones that I am convinced that they are simply copies of wooden prototypes. They preserve the cylindrical outline imposed upon the wooden figures by the shape of the logs, and the disposition of the limbs is the same.

The stone figures as a whole show a greater degree of variation than the wooden ones. Some of them suggest that the native artists had begun to realize that the new material released them from some of the old restrictions and were inclined to try innovations. Coupled with this increased freedom was a lack of familiarity with the new material and, for some carvers at least, an inability to accurately reproduce the wooden forms in the harder and more brittle medium. The quality of the stone available also did much to determine the excellence of the carving produced in any locality. The valley of Puamau, Hivaoa; contains deposits of both grey and red tuff. The grey is soft enough to be easily worked with primitive tools yet compact enough to take a smooth finish. Statues made from it

show a technical excellence scarcely inferior to that of the best wood carvings. The red tuff is coarser and less even in grain than the grey variety and practically all the figures made from it show an inferior finish and a coarsening or obliteration of the finer details of the facial convention. Images of both materials occur in the same temple and are presumably of nearly the same age so that the inferior character of the red figures seems to be directly referable to the poorer quality of the stone. The tuff on Nukuhiva is still coarser, and the figures carved from it are correspondingly crude.

The methods used in quarrying the stone from which the images were made seem to have been identical with those used in cutting the large stone slabs (p. 9).

A few stone images deserve special description, but the greater number agree so closely with the wooden ones that it is unnecessary to give as detailed an account of them. As a rule, they are shorter and more squat than the wooden figures and the legs are heavier in proportion to the rest of the body. The position of the legs is the same as in the wooden figures, but the space between them is less frequently pierced. It is said that on the island of Eiao there formerly was a stone figure which had one leg crossed in front of the other, but none of the images seen showed this position. Two seated or kneeling figures were seen, one in the valley of Puamau, Hivaoa (p. 162), the other in Taipivai, Nukuhiva. The Taipivai image had been built originally into a platform, but as it is large and carved in full round it seems best to consider it as an image rather than an architectural figure. In both these figures the lower leg is lacking and the thigh projects forward at an unusually sharp angle; the ends of the legs do not project beyond the line of the body. In the Puamau figure the leg ends in a slight enlargement, possibly intended to represent the foot.

All the larger standing images seem to have been provided with projections at the bottom similar to those on the wooden images, but in the seated figures this was lacking. The legs of the great statue of Takaii (Pl. VII, *A*) were decorated originally with shallow grooves similar to those adzed on the bodies of some of the largest figures (p. 161). On the lower leg these grooves are horizontal; on the thigh they seem to be arranged in herringbone patterns. So far as known, no other stone figures in the Marquesas show surface ornamentation.

The sex of stone figures is shown by the convention used for wooden ones. In most stone figures the sexual parts are even less prominent than in the wooden figures and in some are lacking. The bodies also of the stone images are like those of the wooden ones, but a few show more naturalism.

In two female figures seen in Taipivai, Nukuhiva, the breasts are represented by broad ovals, broken at their inner ends, carved in very low relief on the upper part of the chest. A similar convention appears on a figure in Puamau, Hivaoa, but the natives insist that this figure is male and that the carvings were meant to represent heavy pectoral muscles of a very strong man. The back of another large figure in the same valley shows unusually naturalistic modeling; the contours are smoothly rounded and the spine is shown as a shallow longitudinal groove (Pl. VI, *A*).

The position of the arms and hands is the same in the stone and wooden images. In the stone images the space between the upper arm and body is less commonly pierced and the arms themselves are thicker and more rounded. In some of the hands, the curved line connecting the grooves between the two outer and the three central fingers is lacking. No true images were seen which had the hand raised to the mouth, but this pose is not uncommon in the architectural figures and was said to be shown in an image formerly in Omoa, Fatuhiva.

The heads of stone images show a greater variability than any other part, but it is difficult to determine how many of the differences are intentional and how many are due to lack of technical skill. On the whole, one facial convention seems to have been common in Hivaoa and another in Nukuhiva. Most of the Hivaoan images, and the only image seen on Uahuka, are greatly superior in execution to those on Nukuhiva and it seems that the better the general finish of the images in the southern Marquesas islands the more closely their facial convention conforms to that normal for the wooden ones. Their faces are vertical or nearly so, and their features are carved in low relief. An image in Uahuka, and another in the valley of Atuona, Hivaoa, show the ears as projecting flanges, but more commonly they are simply carved in low relief on the sides of the head. The top of the head is usually flat and encircled by a low flange as in the wooden figures.

So little material is available for Nukuhiva that it is rather unsafe to generalize. The seven figures seen were all at a site in the valley of Taipivai. Although they had been built into platforms, all of them are carved in full round, and, with the exception of one small figure, belong technically in the class of images rather than of architectural figures. The faces of several of them are too badly weathered to permit a determination of the finer points of the carving, and unfortunately photographs taken of these figures were destroyed by a heavy rain. Photographs of an image formerly in Taiohae Valley have been preserved by some of the old European residents, and a picture of a Nukuhivan image, from an unknown locality, is given by Tautain (41, p. 676). Judging from these few ex-

amples, the faces of Nukuhivan figures were normally more prognathus than those of Hivaoa. The mouth, shown as a rather wide, sharply pointed oval, is not as broad; the lips are rounded instead of flat, and the tongue is thick and prominent. In most of the figures the nose is narrower and higher than in the Hivaoan figures; the eyes in proportion to the rest of the features are smaller, and their "spectacle" rims less carefully worked out. In many figures the wide arches over the eyes are not shown. The top of the head is rounded and there is no clear line of demarcation between it and the face. A convention rather similar to this from Nukuhiva appears on a few detached heads in the valley of Puamau, Hivaoa. On the whole, the Nukuhivan stone carvings appear both cruder and more naturalistic than those of Hivaoa.

On the evidence of workmanship alone, the Nukuhivan figures might be ascribed to an earlier period than the Hivaoan ones and might be assumed technically to represent a stage intermediate between an original naturalism and the rigid conventionalization of the historic period. However, there is no evidence to support such a theory. So far as known, there are no Nukuhivan stone figures whose features show the high conventionalization of figures from the more southern islands. The Taiohae image stood in a temple which was still in use at the time of Porter's visit (32, p. III), and the platform containing the Taipivai images seems to have borne a house at the time of Stewart's visit (40, p. 322). It is of course possible that in both these places images were made at a considerably earlier date, but it is difficult to see why a people should have carved stone during the earlier period of their artistic development and abandoned the practice when their art had become more rigidly conventionalized. It seems probable that the Nukuhivan artists lacked the skill necessary to accurately reproduce in stone the elaborately conventionalized features of the wooden images.

In addition to the figures of normal type there are on Hivaoa a few images of unusual form which deserve separate descriptions. The most remarkable is a large figure made of grey tuff in the temple of Oipona, Puamau Valley. (See p. 162 and Pl. VI, *B*.) At the time of my visit it was not in its original position, and as all its surfaces showed an equally smooth finish it was impossible to tell how it had formerly been set. No satisfactory information in regard to it could be obtained from the natives, but it probably represented a pregnant woman and may have been connected with some of the numerous beliefs regarding women who died in childbirth. The figure is 5 feet, 10 inches long with a maximum body width of 3 feet, 7 inches. The head is thrown backward so that the jaw lies in the plane of the ventral surface of the body. The face is shown

by the usual convention, but the ears are represented by small projecting flanges. The forehead is encircled by a band. The forearms and hands are raised on either side of the head. The legs, which are shown in the usual semi-flexed position, present some interesting features. The feet are narrow flanges, projecting equally on all sides of the ankle, and the knob on the ankle, formed by the head of the fibula, is an almost rectangular projection. This ankle knob is indicated in much the same way on some of the small stone statuettes. A wide flat band runs down the front of each leg from knee to foot. The sexual parts are not shown. The most remarkable feature of the image is a large nearly rectangular projection which extends out from the ventral surface of the body and probably represents the distended abdomen of a pregnant woman. Upon the sides and ends of this projection the same design is carved in low relief. On some of the most sheltered parts of this figure are traces of a red coloring matter, probably ocher, and it is not improbable that the entire figure was originally painted red.

Another image in this *me'ae* conforms to the normal type in general outline but has been carved without a head (Pl. VI, *A*), in its place is a shallow circular depression ten inches in diameter. This was the only intentionally headless figure seen in the Marquesas and in view of the care expended on the heads of all other images it is hard to believe that it was set up in this condition. A probable explanation is that the head had been broken during transportation and that the natives, rather than lose the great amount of labor expended on the figure, carved a shallow socket on the shoulders and made a separate head which was put in this socket after the figure had been set up. The head could not be found. It may have been secreted by the natives or carried away by a German trading company who removed several carvings from this temple a few years ago. This image is made of grey tuff, but shows no traces of paint.

A very crude image in Atuona Valley, Hivaoa, is shown in Plate VIII, *B*. (See p. 145.) It seems to have been asymmetrically carved, with one arm considerably longer than the other. The upper part of the figure was broken and the head missing. A head made from the same sort of stone was found nearby and was placed upon the figure for photographing, but I am now convinced that this head was an architectural decoration and did not belong to the figure.

The small image shown in Plate VII, *B*, was found in the great *me'ae* in Taaoa Valley, Hivaoa. (See p. 138.) It was made of some hard, porous rock, probably lava. One arm is missing, but the other is shown pendant at the side. The head is rounded and of natural size and the mouth and eyes are shown as simple depressions pecked in the stone. No

other figure which at all resembled this one was seen. It probably represents an unsuccessful attempt to carve in a stone too hard and coarse to be handled by the methods to which the artist was accustomed.

An interesting figure (Pl. VIII, *A*) was seen in a combined *tohua* and *me'ae*, name unknown, in the valley of Punaei. It consists of a long irregularly cylindrical piece of red tuff, evidently shaped by the action of water, on which a face, arms, and hands have been carved in very low relief. The upper part of the face agrees with the normal convention but the mouth is straight above and irregularly curved below. Within the mouth is what appears to be a second set of lips, parallel to the outer set and separated from them by an interval of about two inches. Immediately below the mouth two small ornamental details, visible in the illustration, have been incised. The hands and arms conform to the usual convention but show the crudity which characterizes the whole figure.

STONE CAPS

An old manuscript obtained by Handy in Uapou states that the images set up on *tokai* (p. 40) had stone caps placed upon their heads. No objects certainly identifiable as caps were seen at any of the sites visited and none of the living natives seem to have heard of their use. An artificially-shaped stone found near a *tokai* in Puamau Valley, Hivaoa, may have been such a cap. (See p. 165 and Pl. VIII, *C*.) Its lower surface has been worked flat and ground smooth. Near its center is a hemispherical depression similar to those made in rocks by long grinding with a stone pounder. If this stone is a cap, it must have been placed upon a wooden figure which has now rotted away, for there seems never to have been any stone image on the neighboring *tokai*.

ARCHITECTURAL FIGURES

One of the most interesting developments of Marquesan art is the use of figures as architectural decorations. This practice was far commoner in Hivaoa than in any of the other islands, but examples were seen in Uahuka and Nukuhiva. The large figures in Taipivai Valley, Nukuhiva, also might be classed as architectural figures as all of them had been built into the walls of platforms but they are carved in full round and have been described as images (p. 76).

The only genuine architectural figure seen in Nukuhiva is in Taipivai Valley. It is carved in full round, and is only twenty inches high. It had been placed between two of the large rectangular slabs which face the

upper level of a platform. The body and limbs are normal in position and proportion, but the head is unusually small and the eyes are indicated by pits. The rest of the features are too badly damaged for determination of their original character. A solitary Uahukan figure is practically identical in form with certain small architectural figures in Punaei Valley, Hivaoa. (See p. 154 and Pl. IX, B.)

Only the crudest of the Hivaoan architectural figures were carved in full round. Of the few figures of this technique seen, nearly all are natural boulders of cylindrical or cylindro-conical form upon whose smooth surfaces the details of a face, or of a face and body, have been carved in low relief. Such crude figures seem never to have been used in connection with slabs of cut stone, being simply built into the walls of rough stone with the carved portion out. The only well-made stone figure seen is incorporated in the base of the rough stone wall of a small *tohua* in Atuona Valley. This figure, evidently unfinished, is surrounded by large uncut stones (Pl. IX, A). The missing right side of its head is said to have been broken off by a native missionary.

The finest architectural figures were carved in half round to three-quarter round and their use was apparently limited to structures built at least in part of cut stone. All of them seem to have been placed between the large rectangular slabs used to face the highest level of a terrace or platform. Most of them are so arranged that the top of the head is flush with the tops of the adjoining slabs, but the head or even the entire body of a few images projected above these. The back of the figure is provided with a rectangular tenon which was inserted between the ends of the adjoining slabs, the top of the tenon being flush with the tops of these slabs. In the cruder images this tenon usually has the same width as the figure, but in the better made ones it is considerably narrower. The best figures, when in position, concealed the ends of the slabs on either side and appeared as statuettes in full round resting against a solid background. In a few structures a projecting flange was left between the figure and the tenon to serve as a background.

In most architectural figures the entire body was represented, but in a few the legs were omitted. One figure in Puamau shows the toes as small rectangular knobs—a unique feature. It is one of the last made figures, and its form may be due to European influence. The position of the limbs and the convention of the hands and features is the same as that normal in images. The ears of architectural figures are usually shown as projecting flanges decorated with double spirals. In one exceptionally fine figure the lower lobe has been pierced, probably for the attachment of an ornament. The top of the head is flat or, more commonly, rounded. In many

flat-headed figures the forehead is encircled by a projecting band on which simple geometric designs are incised.

Architectural figures seem to have been more numerous in Puamau Valley than in any other locality and many seen there show remarkably fine workmanship. Three of the finest are known to have been carved within the last century and work upon them may have been done with metal tools, although their smooth finish made determination of this point difficult. They show a complete mastery of the medium, and in spite of their grotesqueness, deserve high rank as works of art. The way in which the Marquesan artist achieved his effect by the use of a few large planes might excite the envy of European sculptors of the modern school. The whole figure has a solidity and an architectural quality almost Egyptian. It is unfortunate that an art of such high promise should have been destroyed just as it was beginning to flower.

Closely related to the architectural figures are a series of three carved slabs seen in the *me'ae* of Aaha, Atuona. They are inserted between large rectangular slabs of cut stone used to face the highest step of a platform. The central carving extends to the top of the platform, but those on either side are somewhat lower and, together with the adjoining slabs, are topped by a tier of large uncut stones. Only the head and body are shown and the details have been worked out in rather low relief. The upper arms are much shortened and most of the faces are large and broad. The features conform to the ordinary Marquesan convention, but are carved with great skill. The backs of these slabs are flat and the whole scarcely thicker than the ordinary building slabs (Pl. X, D).

DETACHED HEADS

The great importance attached by the Marquesan sculptor to the heads of figures probably led to the practice of making heads to which no bodies were attached. Most of these heads were used as architectural decorations, but two very large ones in the temple of Oipona, Puamau, Hivaoa (p. 159), seem to have had a significance similar to that of the true images. The larger of these heads was removed some years ago by a German trading company and its fate is unknown. It is said to have resembled the remaining head in all important details but to have been much larger. A trustworthy European who helped to remove it estimated its weight at three tons. I saw the smaller head in position (Pl. XI, D). It stands on the corner of the main platform, which also bears the large images. Like these images, it had an individual name, Makiitauapepe, and seems to have been considered of equal importance with them. The convention of the

features resembles that of the Nukuhivan images rather more than it does the ordinary Hivaoan form. The mouth is shown as a pointed oval. Between the lips and tongue is a ridge, following the line of the lips, which may be intended to represent the teeth. The nose is narrower, has a slightly raised bridge and tip, and is more naturalistic than in most Hivaoan figures. The orifices of the nostrils are indicated by slight excavations—a most unusual feature. The flat eyeballs are encircled by two ridges instead of the usual one. The ears are shown as thick flanges or knobs. The top of the rounded head is encircled, immediately above the features, by a band two inches wide and three-quarters of an inch high. Below the mouth, on the throat, three small figures are carved in rather high relief. These figures, which average seven inches high and seven and a half inches wide, are remarkable for their angularity. They are shown with spread legs and hands raised on either side of the head, but are so highly conventionalized as to be little more than decorative designs. The total height of this head at the front is three feet, one inch. (See p. 159.)

The use of heads as architectural details seems to have been far commoner in Hivaoa than elsewhere in the Marquesas. One was seen in the Taiohae Valley, Nukuhiva, but none are recorded from Uahuka or Uapou. They are known to exist in Tahuata and Fatuhiva but none were seen in either of these islands. The Nukuhivan head in the valley of Taiohae shows the convention usual in the heads of figures from that island, but with an exaggeration of those points which distinguish the Nukuhivan from the Hivaoan convention. The prognathism of the face is pronounced, the eyes are small and slope downward at the outer corners, and the tongue is prominent. The space between the mouth and eye is unusually wide and is deeply hollowed, giving the effect of sunken cheeks. The original position of this head could not be determined but there seems no doubt that it was used as an architectural detail.

The Hivaoan heads show considerable individual variation, but three main types are easily distinguishable.

Type 1. In the commonest type the convention of the features corresponds rather closely to that employed for stone and wooden images. But such heads are readily distinguished from those broken from images. They are much longer in proportion to their height and width (to permit of incorporation into walls) and the features are all carved well to the front to make them visible when the head is in place. The eyes seem to be usually somewhat rounder and the nose smaller and higher than in images. On most heads the ear is shown as a small crescent; on some it is lacking. The top of the head is flat and the forehead is finished with a low band (Pl. XI, B, E).

Type 2. Represented by only three heads, shows only the upper part of the face, the mouth being omitted. The features are carved in unusually bold relief (Pl. XI, A).

Type 3. Differs considerably from either of the other two types and indeed from Marquesan sculpture in general. The whole head, as seen from above, is wedge-shaped, the edge of the wedge forming the center line of the face. Two of the heads seen had been made from waterworn boulders of this form. The convention used for the features is practically identical with that employed for the grotesque faces found on petroglyphs. The round eyes are formed by two or more concentric circles with a pit in the center. The mouth is wide, with rounded lips and tongue, and runs back for some distance on either side of the head. On the side of the face, behind the mouth, are carved one to four V's or double curves, the point of the V being directed toward the corner of the mouth. (See fig. 1, a.) The ears are rarely indicated. The effect of these heads is fish-like rather than human and it seems possible that they were intended to represent fish. No information in regard to them could be obtained from the natives, but a Fatuhivan informant said that one of the temples on that island contained large eel heads carved in stone. Human sacrifices are referred to by the natives as fish and it is possible that these heads, with their resemblances to both fish and men, were intended to embody the same idea.

Several of the heads seen are intermediate in form between Types 1 and 3. They show the wedge-shape of Type 3 and a facial convention combining the mouths and cheek markings of Type 3 with the eyes of Type 1 (Pl. XI, C). In some of these heads the pupil of the eye is indicated by a pit.

ALTAR STONE AND RELIEF CARVINGS

Within the largest temple in Taaoa Valley, Hivaoa (p. 138), is a carved altar stone; a large boulder smoothed by water action. Upon its front an enormous face has been carved in low relief. The convention is the same as that used for images and the work has been done with considerable skill (Pl. X, C). The left arm and hand are shown in the usual position but the right arm is lacking, probably because of a fault in the stone. According to informants, human sacrifices were killed in the *tohua* connected with the *me'ae* and the bodies then carried up and laid on the sloping top of this stone.

The natives of Hivaoa and Tahuata decorated with relief carvings many cut stones used in construction. Similar relief carvings are reported by

Handy at two sites on Uapou, but they seem to be unknown in Nukuhiva and Uahuka. They are most numerous in Hivaoa.

With one exception all the reliefs seen are carved on the flat vertical faces of tuff slabs used to face terraces or platforms. Numerous unfinished reliefs show that the carving was done after the slabs had been transported and placed. Projecting blocks, later to be worked into reliefs, were left at the desired points at the time the slabs were quarried. Some of the slabs in finished structures bear blocks of this sort which have been so carefully squared and smoothed that it seems doubtful whether they were ever intended to be carved.

Relief carvings were rarely used except for ceremonial structures. Human faces and figures predominate, but there are a few decorative designs and unidentifiable forms and, in Hivaoa, at least two representations of animals. The faces are usually carved in low relief and show great variation in size and technical excellence. In the best examples a single rather large face is carved upon the center of the slab and forms its sole decoration. On some slabs a number of small faces are carved without regular order, but the execution of such faces is usually inferior. The convention employed seems to be identical with that normally used for images and some of the larger forms show workmanship of a high order (Pl. XII, *A*).

The human figures carved in relief are of two types. In the commonest type the figure is carved in half round with a large head and abbreviated body and limbs. Most of those seen are poorly executed, but the convention, when determinable, does not differ markedly from that of images. Although a few single figures were seen in Hivaoa, on that island such figures seem to have been ordinarily carved in pairs (Pl. XII, *C, D*). The distance separating the figures, and the distances from them to the ends of the slabs, are unlike in any two specimens, but there is always an attempt at balance. Both figures are approximately the same size, with their tops and bottoms in line. When the sex of such paired figures is indicated, one is usually male and the other female. Human figures of the second type are much less numerous than those of the first type. They are carved in much lower relief and, in their flatness and angularity, suggest designs rather than true figures. The legs are spread and the arms are raised on either side of the small square or triangular head. The features are either omitted or indicated by small pits. The figures carved on the throat of the great head in the *me'ae* of Oipona, Puamau, are excellent examples (Pl. XI, *D*). When used on slabs, the figures of the second type are not paired and they show considerable irregularity of position. One figure is carved with the long axis horizontal instead of vertical.

A small relief carving of a turtle was seen in Puamau, Hivaoa, on the upper edge of one of the large slabs which faced the raised house floor of a chief's *paepae*. It is the only relief carving seen which is not in a *tohua* or *me'ae*. The body is shown as a broad oval six inches long and five inches wide, and the legs and head as short projections. In one of the temples in Haniapa Valley there is said to have been a relief carving of an octopus. A reliable European informant described it as a good naturalistic figure about eighteen inches long.

A peculiar relief carving of unknown significance was seen in the *tohua* of Punaau, Haniapa. It consists of a square central figure, apparently intended to represent a head, on either side of which were broad outward curving bands incised with deep parallel grooves following the line of the curves (Pl. XII, B). The surface of the central figure is so badly battered that it was impossible to tell whether features had ever been carved upon it. As far as known, this figure is the only one of its sort in the Marquesas.

The only design carved in relief which was seen in Hivaoa is in a temple in Punaei Valley. It has the form of a short broad L, with the horizontal arm somewhat longer than the vertical one. On the angle of the L, is incised a broad oval enclosing a diamond, immediately below which, on the border of the figure, are three notches. It is possible that the figure originally had the form of an inverted T as the surface of the slab opposite the horizontal arm is rough and battered. The significance of this figure could not be learned (Pl. IX, B).

Several interesting relief carvings were found by Handy in the valley of Hakamoui, Uapou. (See fig. 15.)

SIGNIFICANCE AND USE OF SCULPTURES

All images and architectural figures were called tiki, but the use of this term did not imply that they were representations of the god Tiki, an important figure in Marquesan mythology. This word appears to be a generic term for all representation, for designs applied to the surfaces of objects, for tattooing, for ornamental carving, and for sculpture. According to Tautain (41, p. 677) Marquesan images were divided into two classes, representations of gods, which were placed in the *me'ae*, and representations of the dead, which were considered less tapu and were placed on the men's platform in the *tohua*. As the greater part of the Marquesan gods seem to have been chiefs or priests deified after death, it is doubtful whether any such clear division is possible. The building of a *tohua* formed part of the ceremonies for such deification (Handy) and it seems that the

images mentioned by Tautain were intended to represent the man thus honored. Whether images of other persons might be set up in the same *tohua* at a later date is not known, although Tautain's statement (41, p. 677) implies that such was the practice. If the images represented the man at whose deification the *tohua* was built, they also would be considered as representations of a god and their less tapu character may have been due to the recent date at which the new god had acquired divinity. Some of the most important images in *me'ae* were also unquestionably figures of the deified dead. The great statue of Takaii in Puamau is an example. The legend of the expulsion of the Naiki from that valley presents Takaii as an important warrior with no divine attributes, yet at a later date he is considered a god. A distinction between images of gods and mortuary images might arise through the existence of ceremonies by which the spirit of the god was called down into the image, but no proof of the existence of such ceremonies was found.

A curious feature of the Puamau images, not noted elsewhere, is the localization of the mana of the figure in some particular part. In the image of Takaii and in the figure of a pregnant woman it was concentrated in the left arm and in two other figures in the head. In all these images the part said to contain the mana had been broken off and carried away. According to the natives this had been done deliberately, with a view to destroying the power of the image. Offerings made to the god were placed before the image or hung up nearby. Gracia (18, p. 55) mentions having seen priests put food offerings to the mouth of the image. According to Handy (19) the offerings were placed on the head of images on *tokai*. The Puamau images are said to have been dressed in native costume and decorated with ornaments at the time of ceremonies, but as none of the early visitors mention clothed images this was probably a local practice.

None of the *tohua* or *tokai* images have survived and it seems safe to conclude that they were made of wood. The *me'ae* images, on the other hand, were made of wood and of stone, but no special significance seems to have been attached to the choice of material. Many of the most important *me'ae* contained no stone figures. When present, such figures seem to have been usually placed in a central or commanding position, the most important deities probably being the ones thus represented.

The arrangement of the images in Nukuhivan *me'ae* can not be ascertained at the present time. Stewart (40 p. 290) says that most small temples on Nukuhiva contained three images, one placed at either end of the platform facing inward and the third at the rear center, facing the front. The type of temple referred to by Stewart is a platform with two levels, like an ordinary house platform, with a house, open in front, cover-

ing either the entire top or the higher level at the rear. As he speaks of the central figure as "against the thatch behind" it was evidently within the house, but whether the other two were also inside is not clear. Tautain (41, p. 669) says that there were only two images, both of which were placed near one end of the lower level. In describing a large *me'ae* in Taiohae Valley, Porter (32, p. 111) says that there was one stone image on a platform and "arranged on each side of him, as well as in the rear and front, were several others, of nearly equal size, formed of the wood of the breadfruit tree." Gracia (18, p. 58) seems to have visited the temple described by Porter and speaks of the stone figure surrounded by "a thousand other forms, all more or less bizarre, all nevertheless imitating the human form except one which had the form of a bird."

The temples on Hivaoa show a much greater variation in form than those on Nukuhiva, but the commonest type consists of a series of terraces running up a sloping hillside. From most temples the images have disappeared, but where they remain they vary so much in number and position that it is doubtful whether there was any fixed rule for their arrangement. In general they seem to have been placed on the higher levels, facing down hill. In the temple of Muutea, Atuona, there formerly were four images, two male and one female, with the sex of the fourth uncertain. Only one remains in position, but from its location it appears probable that all four were in line across the hillside immediately above and behind the highest platform. The *me'ae* of Oovau, in the same valley, consists of three small platforms irregularly placed on a rock slide. The only remaining image is on a natural level place among the rocks, but the platforms also were said to have originally borne images. At the time of my visit, the *me'ae* of Tetoautani, Atuona, bore a single stone female figure, placed near the center of the next to the lowest level. The temple of Pouau also had only one image which was set on the center of a small platform built upon the highest terrace. In both these structures there were probably additional images of wood which have disappeared. Two temples, one in Hanamenu Valley and the other in Hanaheka Valley, had each originally three images set up along the rear of the next to highest level at equal intervals. Four of the images in the great *me'ae* of Oipona, Puamau, had been set up along the edge of the highest level while the position of the fifth is uncertain.

Architectural figures were much commoner in ceremonial than in secular structures, but in Puamau three very fine figures seen were incorporated into a house *paepae*. This platform had been used as a dwelling place by a chief within the memory of persons still living and was not tapu even to women. The natives insist that both these figures and the

similar ones seen in *tohua* and *me'ae* are purely decorative and possess no religious significance. Their statements were borne out by the attitude of the natives elsewhere toward such carvings. Individuals who refuse to enter the precincts of *me'ae* through fear of the tapu handle such figures with perfect unconcern even when they know that they have been removed from sacred structures. They also see no incongruity in using architectural figures, usually removed from older structures, as ornaments for tombs in the Christian burial grounds (Pl. IX, D). It is possible that, when in temple, figures of this sort may have possessed some slight religious significance and that this has been forgotten in the general breakdown of the old culture, but if so, they were certainly less tapu than the images.

With the exception of the head Makiitauapepe (p. 81), all the detached heads seen were also said by the natives to be purely decorative. They may have been intended to represent the heads of enemies killed in war as such heads were sometimes exposed on *me'ae* or *tohua*.

SIGNIFICANCE OF THE DISTRIBUTION OF SCULPTURE

The use of cut stone and the technical skill shown in its cutting declined rather uniformly from Nukuhiva southward and reached its lowest point in Fatuhiva, and it might be expected that a similar condition would hold for the stone sculpture. On the contrary this art reached its highest development in Hivaoa, the northernmost island of southern Marquesas. In the northern islands and in Fatuhiva, the southernmost island, stone figures are much less numerous and show, on the whole, an inferiority of execution. It is probable that the structural use of cut stone was introduced into the Marquesas as a developed art. Its high development in Nukuhiva and gradual decline southward seems to indicate that island as the point from which it was disseminated. The southern islands, although inferior in stone work, excelled in wood carving and tattooing. These differences are linked with others which make it probable that they were due to differences in the makeup of the population. Hivaoa was the natural meeting point for the people of northern and southern Marquesas and I believe that stone sculpture was developed on this island as a result of the interaction of the two racial elements, the northern skill in stone cutting uniting with the southern artistic ability. To the north and south of Hivaoa, where one or the other of these elements was weak, there was a corresponding decline in the amount and excellence of the stone sculpture.

COMPARISON

Wood carving probably preceded stone carving in Polynesia. At the beginning of the historic period wooden figures were relatively common in

eastern Polynesia and in New Zealand, but were rare or lacking in western Polynesia. Cook (7, vol. 5, p. 207) mentions small images in some of the Tongan sacred places, but gives no details of their appearance. Brigham (3, p. 296) figures a supposedly Samoan image now in the British Museum and Kramer (22, p. 207) shows the same image but doubts its authenticity. From Brigham's illustration it is evident that the figure was made with metal tools so, even if correctly ascribed, it is post-European. In Niue and in Ellice Islands there seem to be no wooden figures. In the Gilberts, on the other hand, some wooden ancestral figures were made, but none have been accurately described. One seen by Finsch (10, p. 47) closely resembled the old Hawaiian images. Wooden images are lacking in the Marshalls, but crude naturalistic figures were made formerly in the Carolines. Those which have been illustrated by Kubary (24, pls. 38 and 45) show little or no resemblance to the Polynesian images, and in view of the scanty information on the Gilberts and on western Polynesia, it seems best to limit the present comparison to the eastern Polynesian groups.

A study of eastern Polynesian images shows that certain conventions are practically universal and that a number of others are common to several groups. The most widespread of the conventions is that employed in carving the legs, nearly all of which are shown partly flexed, the nearest approach to a straight leg being seen in the small figures from Easter Island. Representations of seated or kneeling figures seem to have been limited to the Marquesas and even there were rare. It is significant that the squatting position, with knees to chin, which is common in Melanesian sculpture, seems to have been entirely absent in Polynesia. Coupled with the flexed position was a tendency to make the thigh unnaturally short and thin and the calf of the leg disproportionately heavy. The heavy calf is most in evidence in the Hawaiian and Marquesan figures and least noticeable in those from Easter Island. The arms and hands of Polynesian figures also show considerable uniformity of treatment. In most of those from the Society Islands, the Marquesas, Rarotonga, and New Zealand, the upper arm is carved in a vertical position with the forearm horizontal and the hands resting on either side of the abdomen. The stone figures from Raivavai in the Austral Islands show the same position (36, pl. xxii) and it occurs with only slight modification in the great Easter Island images. The alternate position in the Marquesan images—one arm and hand on the abdomen, the other hand raised to the mouth—also occurs in Tahiti and New Zealand. Throughout southern Polynesia exclusive of Easter Island at least ninety per cent of the wooden figures show one or the other of these positions. In most wooden images from Easter Island and Hawaii, however, the arms are shown slightly flexed with the hands on

the hips, and the hand to mouth position appears to be absent. For Hawaii, where the arm positions seem to be more variable than in any other part of Polynesia, this is rather surprising. Throughout most of Polynesia the hand is shown with five fingers of equal length, the three fingers of the Maori figures apparently representing a local development. The Marquesan convention in which the grooves outlining the two outer fingers are joined behind the central three, thus dividing the hand into three parts, may indicate the first step in the development of the Maori convention.

A study of the treatment of the body in Polynesian figures gives less positive results. As a rule there was little or no attempt at modeling and the breasts of female figures are either not indicated or are carved in very low relief. The body treatment of the small effigies from Easter Island and of the naturalistic Hawaiian figures departs from this rule, but that of the larger images adheres to it. The treatment of the body surface as a series of planes meeting in well defined angles, which is characteristic of the best Marquesan work, is apparent in many of the Hawaiian temple images, but had not been brought to the same stage of perfection. There are also suggestions of it in the cruder Tahitian figures, but it appears to be lacking elsewhere.

The greatest variation in Polynesian figures is in the treatment of the head and face. It seems to have been a universal rule that the head was made disproportionately large and was carved with more care than the rest of the figure, but beyond this it is difficult to generalize. There seems to have been no locality in which the carving of the features was uniformly naturalistic although a certain naturalism is recognizable in even the most conventionalized of the Easter Island figures. In Hawaii and New Zealand highly conventionalized and naturalistic forms were used simultaneously but were apparently utilized for different classes of images. In the Marquesas and in Rarotonga naturalistic faces were almost never made. The condition in the Society and Austral islands is difficult to determine as very few effigies from these groups have survived but those extant show in part a convention like that of Rarotonga and in part a crude naturalism. One of the best known figures from the Austral Islands has the features indicated by small figures carved in high relief. It is most unfortunate that none of the Mangarevan figures mentioned by early visitors have been illustrated or described.

None of the Polynesian sculptors were capable of accurate portraiture, and it is obvious that the more nearly correct the details of the naturalistic faces carved in the different islands, the greater would be their similarity. The proofs of contact or relationship lie in the conventionalized forms.

The only two island groups in which the similarity of the facial convention is at once apparent are Rarotonga and the Marquesas. The extent of the resemblance can best be brought out by a description of the Rarotongan image of Te Rongo figured by Brigham (3, fig. 236). Compared with the typical Marquesan figure, the face of Te Rongo is narrower and more wedge-shaped; the mouth is a pointed oval with thick rounded lips between which the tongue is visible; the nose is higher and narrower but the nostrils are identical in treatment. The eyes are narrower and more pointed, but the treatment is essentially the same, the eyeball being rounded and enclosed by a raised rim. The arches over the eyes, which are so much in evidence in the Marquesan figures, are present in simpler form, their outer ends being carried back and down to the forward edges of the ears.

The resemblances between the Marquesan and Rarotongan conventions, and the convention employed by the Maori are not obvious; they consist in underlying ideas rather than in details of treatment. The decorative idea has been carried much further by the Maori than by Rarotongans or Marquesans; but the concepts of a wide mouth with prominent tongue and of wide arches over the eyes is common to all three. The beaked or "figure-eight" mouths of the Maori figures seem to be foreign to Rarotongan art and are represented in the Marquesas by a single incised figure which is apparently of considerable age. The Hawaiian convention shows the wide mouth and over-eye arches but in the shape and downward slope of the eye, and in the shape of the mouth, agrees more closely with the Maori than with the Marquesan or Rarotongan conventions. The prominent tongue, which is practically constant in the carvings of southern Polynesia is represented in only a few small and semi-naturalistic figures.

The facial convention of the Easter Island figures differs greatly from that of the other Polynesian islands. Few mouths are exaggerated and some are unnaturally small; the lower face is elongated whereas in other Polynesian carvings it is disproportionately short. The brows are stressed, faintly suggesting the over-eye arches of the other images but the treatment of the eyes and nose is, on the whole, naturalistic. In view of these traits it seems safe to assume that the Easter Island convention was either a survival of one which had been completely superseded elsewhere in Polynesia or an independent development from a naturalistic prototype. As the conventionalization is never extreme, an independent development appears more probable.

The following summarization holds for eastern and southern Polynesia exclusive of Easter Island:—The half flexed position of the leg is universal and nearly constant. The hands-on-abdomen pose is nearly universal and

is normal in the figures from all the groups except Hawaii, where it seems to be rare or lacking. The pose of one hand on the abdomen and the other raised to the mouth is lacking in Hawaii and possibly in the Cook group, but occurs throughout the rest of Polynesia. The treatment of the body and limb surfaces as a series of planes meeting in well defined angles is characteristic of Marquesan figures. It also occurs in Hawaii and the Society Islands but appears to be lacking in the Cook Islands and New Zealand. Both naturalistic and conventionalized faces were carved in Hawaii, New Zealand, and the Society Islands, but naturalistic faces were practically never carved in the Marquesas and the Cook Islands. The conventionalized faces of the Marquesas, Society, and Cook islands show so many points of similarity that they must be considered as not very divergent developments of a single ancestral type. The conventionalization is most pronounced in the Marquesan figures; those from the other two groups show a technical inferiority and a tendency toward greater naturalism. In the Hawaiian and Maori images the conventionalization was carried much further than in the Marquesan ones but the same concepts are basic to all three. The Hawaiian and Maori conventions have certain elements in common which are lacking in the historic carvings of the intervening islands but one of these, the beaked mouth, was at one time present in the Marquesas.

The conventionalized figures from eastern Polynesia exclusive of Easter Island have so many features in common that it seems safe to assume that the local types of the historic period have all been developed from a single ancestral type. Reconstructing this form on the basis of the features common to all or nearly all Polynesian images, we find that it is characterized by a partly flexed leg, the use of two arm poses in one of which both hands rest on the abdomen while in the other one hand was raised to the mouth, little or no modeling of the body, a head of exaggerated size, an unnaturally short chin, a very wide mouth, a prominent tongue, a large eye with a convex eyeball, and great exaggeration of the brows. Although it is possible that this group of conventions originated in some one Polynesian locality and was carried to the rest of the area, it seems more probable that it was introduced into Polynesia by some group of immigrants who had developed it elsewhere. The poses of the naturalistic figures agree so closely with those of the conventionalized figures that it seems probable that these also owe their origin to the same group of immigrants. The recent movements of population in Polynesia appear to have been from the western islands into the marginal islands and as images were rarely made in western Polynesia it seems safe to assume that the carvers belonged to the first, or to an early, wave of immigrants.

The historic conditions in Polynesia seem best explained by the following hypothesis:—One of the earlier waves of Polynesian immigrants brought with it a well developed art of image carving. The poses given to the images had already become rigidly conventionalized but both naturalistic and conventional forms were employed in carving the face. It is probable that, as in historic Hawaii and New Zealand, the two types of facial representation were employed for different classes of images. After the coming of these immigrants the isolation of the various Polynesian groups resulted in the development of increasingly divergent local conventions which were linked by the concepts which all had inherited from the ancestral conventions, but which differed considerably in details. In Rarotonga and the Marquesas the development of a simple and readily reproduced facial convention resulted in the practical abandonment of the naturalistic style. In the Marquesas the beaked mouth does not occur in the late prehistoric carvings although it was used at some former time, and it seems possible that the Marquesan and the Rarotongan conventions represent a compromise between an extreme conventionalization and naturalism. The close resemblance in body and leg treatment between the Hawaiian temple images and the Marquesan figures suggests that the Hawaiian convention is due to the influence of the last wave of immigrants to Hawaii who almost certainly came from southeastern Polynesia. Whether the earlier Hawaiians carved images is uncertain, but if so they probably made only crude naturalistic forms. In the Society and Austral islands the steady influx of western Polynesians who made no images or only crude naturalistic ones resulted in the breaking down of the old conventions and a deterioration in the technique.

The Maori and Marquesan cultures show numerous Melanesian affinities and it might be expected that the basic conventions of the Polynesian images would be common in Melanesia also, but in spite of the great number and variety of the Melanesian images the traits which are common to all the eastern Polynesian images are conspicuous by their absence. Individual carvings from a few localities suggest the Polynesian forms, but the numerous local conventions of Melanesia seem to have been developed from a quite different source. It is improbable therefore that the Maori and the Marquesans owed this feature of their culture to Melanesian contact. Some indications of its source can be found in the regions still farther to the west. Many small carvings of the Igorot in the Philippines show a striking resemblance to the Polynesian forms in their pose and body treatment, although there is little facial resemblance, and some carved faces from the island of Engano south of Java are remarkably similar to the Marquesan

forms. The ancestral Polynesian conventions for image carving may have been developed somewhere in Indonesia.

It is impossible to say whether the people who introduced image carving into Polynesia were familiar with the manufacture of stone as well as wooden effigies. The occurrence of stone images of one sort or another throughout marginal Polynesia suggests that they were. Small stone figures were made at the beginning of the historic period in Hawaii, the Marquesas, Society Islands, Easter Island, and New Zealand. These figures resemble the local wooden forms more closely than they do the stone figures from other localities and it seems certain, therefore, that if stone sculpture was introduced into Polynesia as a developed art no convention for it, as distinct from wood carving, had become established. Their implements show that all the marginal Polynesians possessed great skill in stone working and the manufacture of small stone effigies would present no technical difficulties to them. The distribution of large stone figures makes it seem improbable that the original image carvers were familiar with their manufacture. A few rough attempts at large sculpture in stone occur in Hawaii and there was a single large stone image on Mangaia (16, p. 95), but large statues were numerous only in the Marquesas, in Raivavai, and in Easter Island. The Marquesan statues agree so closely with the wooden images in form and use that it seems that they are only stone imitations. Probably the same explanation holds good for Raivavai and Easter Island. If the manufacture of such large images had been introduced into Polynesia as a developed art the proofs of relationship should appear in the images themselves, but in none of them does the resemblance extend beyond details common to Polynesian sculpture as a whole. The pose of the figures from Raivavai and the Marquesas is closely similar but the treatment of the head and face is different and corresponds to that normal in the wooden images of each locality. In Easter Island the large stone images and the small wooden figures resemble each other much more than they resemble either the Raivavaian or the Marquesan figures. It should be noted that in all the localities where large stone figures are numerous there are extensive deposits of soft tuff, easily worked by the methods used in wood carving, and that this is the material normally employed for the images. The effect of the presence of such material on people who were not ordinarily stone cutters can be seen at Lake Rotorua, where in large deposits of tuff the Maori excavated artificial caves and steps, carved figures in relief (8, pp. 134-9), and even made stone images as much as four feet in height (21, vol. 19, p. 175).

Stone effigies seem to be entirely lacking in Samoa, Tonga, and Micronesia. In Melanesia they occur sporadically, apparently as a result of the

presence of deposits of easily worked stone, but none of these Melanesian figures are large. Rivers (34, vol. 1, pl. 3) figures a large image from a gamal in Santa Maria, Banks Islands, which he was told was of stone. A. B. Lewis of the Field Museum, who spent some time on Santa Maria, heard nothing of such figures and believes that Rivers was misinformed. The illustration given by Rogers strongly suggests a wooden image.

The use of stone effigies and heads as architectural decorations seems to have been limited to Easter Island and the Marquesas. In both these localities the practice probably arose independently as a result of the high local development of stone carving. The carving of high relief figures on stone also seems to have been practically limited to the Marquesas and Easter Island, although one example is recorded from the Lake Rotorua region of New Zealand. Neither relief carving nor architectural figures of stone are recorded from western Polynesia, Micronesia, or Melanesia.

PETROGLYPHS

Petroglyphs were seen in the islands of Hivaoa, Tahuata, and Uapou, but are by no means common in the Marquesas. A small boulder decorated with incised designs, and a slab with a face incised upon it, were also seen in Uahuka. Old European residents report petroglyphs in Hatiheu Valley, Nukuhiva, but the natives of this valley disclaim knowledge of them. By far the largest number of petroglyphs were found in Hivaoa, but this may very well have been due to the more intensive work carried on there.

So few petroglyphs were found that it is unsafe to generalize about their occurrence, but, with one exception, all the important collections seen were either in ceremonial structures or so near them that they were probably associated. In no place was more than one stone decorated in this way. At some localities the surface of this stone is almost covered with figures, while nearby stones, equally well adapted for the purpose, are unmarked. Most of the stones are large waterworn boulders, on which the figures were made by pecking. The execution of the larger ones must have required considerable labor. The segregation of the petroglyphs, their apparent connection with ceremonial structures, and the work expended upon them, indicate that they possessed some special significance, but most of the living natives can give no information in regard to them. My guide said that a large pictograph rock in Hapatoni Valley, Tahuata, marked the spot where boys were brought to be tattooed, and that the pictographs, which were for the most part grotesque faces, served as models for the tattooers. As this informant proved unreliable in some respects and as no similar designs are used in the modern tattooing, this information was considered of little value at the time. The pictures of tattooed natives given by Krusenstern (23) however, show a use of faces closely similar to those upon the rock, and these designs are placed in positions named by the informant, namely, on the calves of the legs and in the small of the back. As the Hapatoni pictograph rock is not connected with any sacred structure, the explanation given is plausible, it seems doubtful whether the other Marquesan petroglyphs can be explained in the same way.

It is difficult to make any classification of Marquesan petroglyphs and, because of the small number available for study, the results of such an attempt are of questionable value. With one important exception, the figures in all the sites show similarities and appear to be products of the same culture. Series of concentric circles are commoner than any other figures, occurring in all but two sites. A related form, consisting of a series of concentric circles pierced by a bar, was seen in two sites. (See

Pl. XIII, C.) This can probably be interpreted as a sex symbol, but it is also related to certain designs used in tattooing and in wood carving. Next to circles in order of abundance are grotesque faces, with round eyes and oval mouths (fig. 1, *a, b*; Pl. XIII, *E*). The eyes of such faces are identical with the concentric circle figure, many of which are in pairs and it is possible that some of these figures are parts of unfinished faces. The addition of chevron-like figures at the corners of the mouth was a feature observed only in Hapatoni. Similar chevrons are common on the heads of carved *popoi* pounders and on heads used as architectural decorations. Grill-like figures, made by a number of more or less straight lines intersecting at right angles, are also common. Most of them are carved on the flat up-

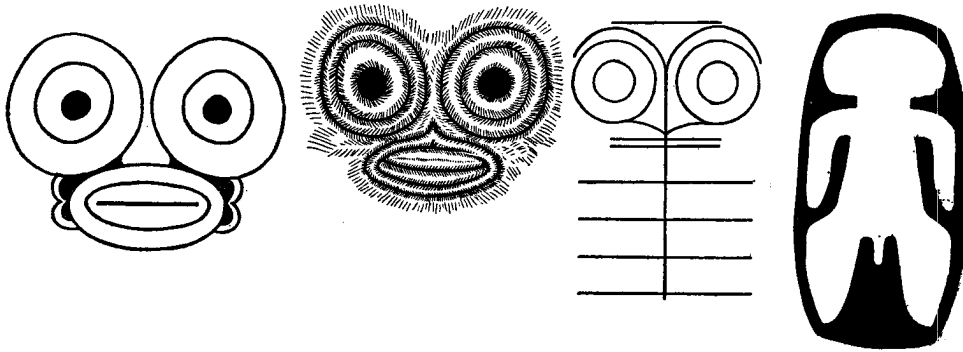


FIGURE 1.—Drawings of petroglyphs at Hapatoni, Tahuata: *a, b*, round eyes and oval mouths; *c*, an unusual form; *d*, design carved on a stone figure in the valley of Eiaone, Hivaoa. Length of *a*, 15 inches; of *b*, 18 inches; of *c*, 15 inches.

per surface of the stone (Pl. XIII, *B*). Small angular representations of human beings or quadrupeds (Pl. XIII, *A, D*) appear on most of the pictograph rocks, but are nowhere numerous. It should be noted that the occurrence of a figure of this sort links an exceptional series of pictographs (p. 98) with those of more usual type. In addition to these general forms, there are a whole series of figures represented by one or two examples each. A pictograph rock in the valley of Hapatoni, Tahuata, is decorated for the most part with grotesque faces, but on one side is a curious figure unlike anything seen elsewhere (fig. 1, *c*). A large part of the pictograph rock in Hanaiapa Valley, Hivaoa, is covered with a network of joined circles, ovals, curves, and straight lines, apparently disposed without definite order, which, in their general effect, suggest the carvings on some of the oldest Marquesan bowls (Pl. XIII, *F*). Among these designs a face is recognizable. A stone built into the wall of the *tohua* of Fatuuu, Hanapaoa Valley, bears an irregular incised design which differs somewhat

from any seen elsewhere (Pl. XIV, C). The small pits which appear above either end of the design are its most unusual feature. Some petroglyphs on a rock in a *me'ae* in Eiaone Valley, Hivaoa, are of especial interest (Pl. XIV, B, D). On one end of the rock a large face has been incised. Below it are three series of chevron-like figures. Two small human figures appear, one immediately behind the face and the other near the further end of the stone. These figures are about 8 inches long and 3 1-2 inches wide. The grooves outlining them are nearly 3-4 inch deep and this, coupled with the rounded contours of the figures themselves, gives them almost the appearance of having been carved in relief. One of these figures is shown in Plate XIV, B, immediately behind the eye of the large face, and a drawing of it is given in figure 1, d. The other figure resembles it except that the head is somewhat more pointed and the sex is not indicated. On other parts of this stone there are a number of concentric circles, and a small grill-like figure is deeply cut on its top.

In Tahauku Valley is a petroglyph rock of unusual interest. The petroglyphs are human figures or unidentifiable forms (Pl. XV, D), at least two of which may represent the female reproductive organ. Such figures as concentric circles and grotesque faces, which form the bulk of the designs in other sites, seem to be entirely absent. A small angular human figure, found in several of the other collections of petroglyphs, seems to be the only design which links this rock with the others. The human figures, several of which are nearly two feet long, are of especial interest. The limbs on either side of the body are formed by two nearly parallel lines which meet in a point at the extremities of the arms and legs. The limbs of the two sides are joined by a V-shaped line at the bottom, but are not connected at the top. The heads are shown as small circles within which are from one to four small depressions to represent the features. The smoothly curved contours of the limbs are decidedly at variance with the art canons of the historic natives. The petroglyphs cover the end and top of the rock, but those upon the top are not shown. They consist of human figures similar to those on the end and of a few unidentifiable forms (Pl. XV, A).

Although not all the figures found on the petroglyph rocks of usual type occur in the historic carvings of the natives, the grotesque faces and several of the other designs bear such a close resemblance to those upon objects made during or shortly before the historic period that there can be little doubt that these petroglyphs were made by the ancestors of the present inhabitants. Whether the same is true of the Tahauku petroglyphs, it is impossible to say. The rock on which they have been cut stands near a large structure which is unquestionably the work of a tribe of ordinary Mar-

quesan culture. The petroglyphs are certainly not more recent than this structure, but it is possible that they are much older and represent an extinct phase of art. The tribe which formerly occupied the locality is extinct or scattered, and no information in regard to these very curious figures could be obtained.

Certain decorated slabs seem to form a connecting link between true petroglyphs and relief sculptures. The most interesting of these slabs was found in a large structure, apparently a combined *tohua* and *me'ae*, in Tahauku Valley, Hivaoa. It was this structure with which the group of unusual petroglyphs (p. 149) was seemingly connected. The slab was found in the course of the excavation of a small platform on one of the terraces of the main structure and had apparently been used as building material. The design is a face below which are two pairs of upward curved lines, probably representing limbs. The eyes are shown by concentric circles, as in the grotesque faces found as petroglyphs, but the mouth is apparently beaked (Pl. XV, C). This is the only recorded example of the occurrence of a beaked mouth in Marquesan carving and it is of great interest in view of the prominence of this feature in Maori art and the numerous connecting links in the culture of the two peoples. The use of this slab as building material in a structure which was itself prehistoric indicates considerable age. An engraved slab seen in Vaipae Valley, Uahuka, bore a face of more ordinary type. Here also the eyes are shown as concentric circles, but the mouth is semicircular with a nearly straight upper edge. Scroll-like ears had apparently been carved on either side of the face. This slab had been built into the steps of a native house and some of the details of the design had been obliterated by modern wear. A small slab found in a temple in Eiaone Valley, Hivaoa, bears near its upper end a semicircular figure which is probably either the mouth of an unfinished face or of one whose eyes had been obliterated.

COMPARISON

So little information is available on Pacific petroglyphs that anything like a satisfactory comparative study is impossible. Their occurrence is reported from Hawaii, the Austral Islands, Pitcairn Island, Chatham Islands, and New Zealand in Polynesia, and from New Caledonia in Melanesia, but there seem to be none in Micronesia. A comparison of the figures from these localities with those from the Marquesas yields only negative results. Small angular representations of human beings also appear in Hawaii (9a) but this figure is such an obvious one that it can hardly be considered a proof of relationship. Some of the New Caledonia figures

shown by Archambault (1, pp. 4, 5,) bear a superficial resemblance to some of the more irregular Marquesan designs, but the commoner types are absent from the Marquesas and here also the resemblance is probably accidental. The designs from the other localities show no resemblance to those in the Marquesas.

MISCELLANEOUS STRUCTURES

AGRICULTURAL TERRACES

The statement of Tautain (41, p. 542) that agricultural terraces were to be found in all the Marquesan valleys was not borne out by my investigations. They probably were constructed on all the larger islands but were nowhere very numerous. They were employed for the cultivation of taro and as even the dry or upland variety of this plant requires a good deal of water there were few places in which terraces could profitably be built. Breadfruit was the native staple and even in well watered valleys taro was of little economic importance. Some small isolated terraces, or series of two or three terraces placed one above the other, were built on steep slopes where there was a seepage of water. Most of such terraces seem to have been small, some of those seen in Atuona, Hivaoa, having a surface of only five or six square yards. Most seeps did not supply enough water to flood the terraces in ordinary seasons and it seems probable that they were intended for the cultivation of the dry taro. Where a better supply of water was available the natives built some extensive terrace systems. A large system of this sort was seen by Handy on Uapou, and smaller systems were examined by me in Hivaoa and Uahuka. The Uakukan terraces are still in use. Their age was not ascertained. A large terrace system in Puamau, Hivaoa, said to be ancient by the natives, is also still in use. It is fan-shaped; the uppermost terrace built across the bed of a small stream, damming its waters, and below this the other terraces spreading out on both sides, filling the bottom of the small valley and extending along its sides. The inclination of the slope is about thirty-five degrees and the terraces themselves are low—few of them more than two feet high. They are supported on the lower side by roughly built retaining walls which rise about two feet above the surface of the bed to form a low fence. There seems to be no regular plan in the arrangement of the beds and the whole system is probably a gradual growth. There are no channels; the water is allowed to seep through the walls of one terrace and trickle down to the terrace below. Near the middle of this terrace system, in the old stream bed, is a clear pool about three feet deep, its sides lined with large upright slabs of uncut stone. According to the natives this was used as a turtle pound in which large numbers of turtles, caught in preparation for a feast, were kept alive by feeding with seaweed collected from the rocks by the young men and women. Although in this valley the

flesh of turtles was tapu to all but the chiefs and priests, this pound was not tapu in any way and was not associated with any ceremonial structure.

In some narrow and steep-sided valleys long narrow agricultural terraces were built longitudinally and fed by streams of water diverted from the main rivulet at some point higher up. At the time of my visit all the terraces of this sort had fallen into decay and the feeding canals were difficult to trace. In those seen at Atuona, Hivaoa, the canals seemed to have been simple ditches eight inches to one foot in depth and about eighteen inches wide. Tautain (41, p. 542) says that the similar canals in Nukuhiva were more carefully made and were lined with flat stones to prevent the earth from slipping in. The surplus water was not conducted back to the stream but was allowed to seep through the walls.

MA PITS

The preservation of fermented breadfruit has been reported from all the Polynesian islands in which the breadfruit tree is of economic importance. Most accounts are brief, but it is probable that the methods employed for the preservation of the fruit were everywhere much the same. The Marquesan method may be briefly summarized as follows:—The ripe fruit is peeled, cored, and the flesh reduced to a pulp. This pulp is placed in large circular containers made of coconut leaf mats supported by poles set in the ground. It is left in these containers until it ferments, usually a week to ten days, and is then buried in pits lined with leaves and covered with a thick layer of leaves weighted with stones. In most of the Polynesian islands only enough of the pulp was preserved to last until the next season, but the frequently recurring droughts of the Marquesas made larger storage necessary. At present, as in former times, each family has its *ma* pit, which is filled at the time of the breadfruit harvest, but there were formerly in addition great communal pits which were filled in good seasons and kept as a reserve for times of famine.

The *ma* pits used by the families at present are circular, about three feet in diameter and three to four feet deep. All of them are dug in stiff clay soil which prevents infiltration of ground water, and most of them are near the house. Many of the Nukuhivan house platforms contain rectangular pits which were explained by some natives as *ma* pits and by others are repositories in which tapu objects were thrown. Tautain (41 pp. 549-50) speaks of these pits in *paepae* as *ma* pits and says that the Nukuhivan natives in his time used both simple earth pits of the sort now in universal use and also stone lined pits, which were square instead of round. The great communal pits were built on the same principle as the family pits and square

and round forms seem about equally common throughout the Marquesas. The sides of some pits are faced with rough stones to a distance of two or three feet below the surface to prevent loose soil from falling in, but the interior of the pits seems not to have been stone-lined. The soil in which many of them are dug is very stiff and in some places preserves the marks of the primitive digging tools after the lapse of a century. These marks show that at least the final dressing of the walls was done with a flat-bladed sharp-edged tool three to four inches wide. The marks are so regular as to suggest an attempt at ornamentation.

The largest pit seen is in Taipivai Valley, Nukuhiva, about a mile and a half from the mouth of the valley, close to the modern road to Hatiheu. It is circular, approximately eighteen feet in diameter and at least thirty feet deep. It is evident that such a pit, when filled, would have supported the whole tribe for several months.

Many of the great communal pits were built in the village and were placed as a rule in or near the tribal assembly place. Additional pits were built high up in the hills, in secluded places, where they would be safe from an enemy and could provide food for the tribe if it were driven out of the valley. The natives set no limit on the length of time that *ma* could be preserved in one of these great pits. It darkened with age and probably lost much of its nutritive value, but would still be edible after fifty years.

OVENS FOR COOKING TI ROOT

In the neighborhood of some of the old village sites large shallow depressions were seen which were said to mark the site of the great communal ovens used for cooking the root of the ti plant. These roots, when properly prepared, are very sweet and are much relished by the natives. In the raw state they are tough and fibrous and require prolonged cooking to make them edible. For this reason, also probably because the supply was limited, in ancient times cooking of ti root was a tribal affair and was made the occasion of a general feast. The ovens used differed from ordinary earth ovens in size only. Some of those whose remains were seen must originally have been forty feet across and two to two and a half feet deep. The fires had to be kept up two or three days to heat such an oven, and at least two days more were required for the proper cooking of the roots. The same oven might be cleared out and used on successive occasions.

ARCHAEOLOGICAL SURVEY

FOREWORD

For the use of students and as a guide to visitors, a description of the more important archaeological features on each of the Marquesas islands has been prepared. No claim is made for completeness. According to an

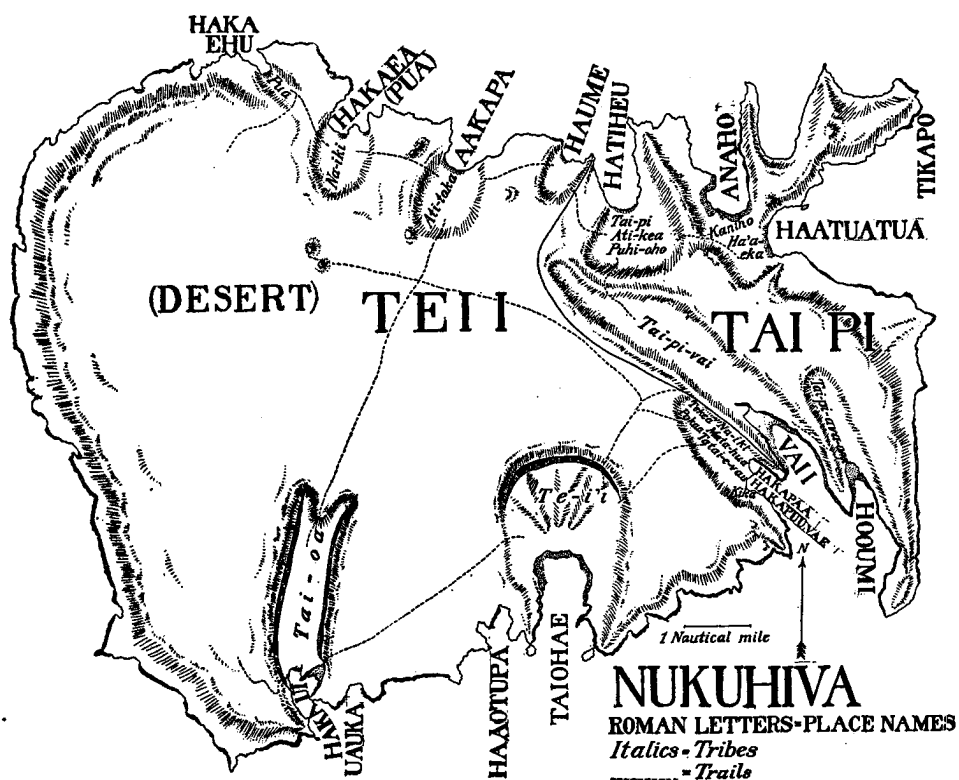


FIGURE 2.—Map of Nukuhiva (reproduced from Handy, 19).

early record, Taipivai Valley alone contained fourteen *tohua* and thirty-two *me'ae*. Hundreds of such structures are found in the other valleys and on other islands. The names and locations of many of these sites are at present unknown even to the natives.

The official maps of the Marquesas are navigators' charts which portray coast lines and conventionalized topography, and are therefore of little use in platting locations. The much more accurate sketch maps, (figs. 2,

7, 12, 27, and 28) reproduced from Handy (19), may serve to indicate the general location of archaeological sites.

EIAO

Eiao, or Isle Masse, is the northernmost island of the Marquesan group, with the possible exception of a low coral reef said to lie about twenty miles to the northeast. The only anchorage is in a small bay, Vaitahu, near the northern end of the island. A number of small shallow valleys run along the coast but the central part of the island is surrounded by high and almost sheer cliffs which are scalable only at a point above Vaitahu. The interior of the island is a rolling plateau covered with grass and open groves of fau and rosewood (*Therpesia populnea*) trees. There are a few waterholes and one or two small streams which fail in dry seasons. The rainfall is less than on any other Marquesan island.

The island was sparsely inhabited during the early historic period, population was almost destroyed by smallpox and the survivors moved to Nukuhiva. At a later time it was used as a penal settlement by the French, but has been uninhabited for many years. Apparently a small village was located at the bay of Vaitahu and another in the interior.

Site 1. House platforms situated at the village at the bay of Vaitahu; small and rather poorly built.

Site 2. House platforms situated at the interior village; said to have contained two stone images, both of which were removed years ago.

Site 3. A number of isolated house sites situated on the northern part of the plateau, rectangular enclosures of large stones set on edge, the tops rising four to six inches above the ground, unpaved but had probably been filled with earth to form low platforms. The area is about the same as that of ordinary house *paepae* so that the house proper probably did not cover the entire enclosed space.

Site 4. Probably a *me'ae*, situated along the southern edge of the plateau, overlooking the sea; consists of a small pavement surrounding a large unhewn stone roughly suggesting a human figure.

Site 5. A structure of ceremonial use, definite nature unknown; situated some distance to the east of site 4, on the southern edge of the plateau; consists of a pavement, approximately 50 feet by 20 feet, including three rectangular unpaved areas, probably the bed spaces of very small houses. Near the center of the pavement is a large unhewn stone in the top of which is a cavity, with a capacity of about 8 gallons, which may have been used as a cistern for rainwater. Near the pavement are three bowl-like depressions, apparently the remains of earth ovens.

Site 6. Several pavements, situated along the edge of the cliffs at the southern edge of the plateau. They are widely spaced and a long distance from the water; were probably for ceremonial use.

Site 7. Workshops for adzes; situated on the southern end of the island.

Eiao appears to have been the center for adz making for the Marquesas Islands. Broken adzes, rejects, and chips can be found in all parts of the

plateau and large abandoned workshops at the southern end of the island. One workshop near the southwestern corner of the plateau is quite extensive and at one place an area of about twenty square yards is so thickly covered with chips as to hide the soil. Other workshops are strung along the ridge to the east. Curiously enough, the soil at these sites is a red clay, containing few or no stones, and the material for adzes has evidently been brought from a considerable distance. The quarries were not found and it seems probable that the stone used was obtained from stream-borne in the valley bottoms or from some place on the face of the outer cliffs. No house sites were found in the immediate neighborhood of the workshops, which were, as a rule, far from water. No grinding stones were found on Eiao, although these are common in the neighborhood of villages on the other islands, and only one adz which showed grinding was collected. From this it seems safe to conclude that most of the adzes made here were exported in an unground condition and finished elsewhere. Great numbers of broken adzes and rejects were found and these show a preponderance of the smaller and thinner forms used in carving (27, p. 321).

According to Nukuhivan informants the tribe inhabiting Eiao was an offshoot of one of the Nukuhivan tribes and the adzes made by them were carried first to Nukuhiva and from there traded to the other islands of the group. The industry was not limited to Eiao, but was carried on independently throughout the Marquesas. It seems probable that the larger and coarser types of adzes were made of local material but that the superior Eiao stone was preferred for the finer forms.

HATUTU

Hatutu, separated from Eiao by a channel two to three miles wide, is waterless, with very little vegetation. It was never regularly inhabited. Fish are plentiful in the surrounding shallows and for this reason it is still occasionally visited by natives from Nukuhiva. The cliffs rise sheer from the sea and it was impossible to land at the time of my visit. There are said to be no structures upon the island but a few small caves in the face of the cliff may contain burials.

MOTUITI

Motuiti lies between Eiao and Nukuhiva and is famous for good fishing on the shoals about its base. It is a barren rock about half a mile long and 720 feet high, and landings can be made only in fair weather. The top of the island is gently sloping, the highest point being at the south. Being waterless, it was never regularly inhabited, but is said to have been used as a burial place for the chiefs of Hakau Valley, Nukuhiva.

Site 8. Burial cave located about half way up the cliff on the east side of the island; contains a few scattered bones.

Site 9. Shelters of bird hunters or mortuary structures situated on level ground at the top of the island; consist of three or four small enclosures, of single stones.

NUKUHIVA

Nukuhiva, the northernmost inhabited island of the Marquesas, has an area greater than that of Hivaoa, but its physical features are not as favorable and probably its population was somewhat smaller. On the southern side are a few large fertile valleys, the finest being Taipivai, but the northwestern part is a high waterless plateau intersected by dry canyons, and the remainder of the island is very mountainous. The plateau and the greater part of the small valleys running down from it to the sea were uninhabited in the earliest historic times.

HAKAUI VALLEY

Hakau Valley contains few archaeological remains. With one exception the *tohua* are situated in the level bed of the valley, while the *me'ae* are in the hills. No *me'ae* were visited, as it was impossible to obtain a guide who knew their location.

Site 10. The *tohua* of Ponaouoho (figure 3); situated on the beach on the west bank of the river; the best preserved structure in the valley. An unusual feature is the great *paepae* for the chief's house, which extends across one end and completely dominates the structure.

Site 11. The *tohua* of Hiekua; situated on the western bank of the river a short distance above Ponaouoha. It has been completely destroyed and the material used to build *paepae* and walls.

Site 12. The *tohua* of Haekua, situated in the bed of the valley a short distance above the town, is much broken, a great deal of the stone having been removed to build a paved road which runs through the old dance space, which is 351 feet long and 40 feet wide, and originally was enclosed on all sides by low platforms with some larger *paepae*. The eastern platform has been destroyed by a change in the bed of the stream. The first step of the platform on the western side seems to have been composed throughout of large slabs of cut stone set on edge—a unique feature. This platform bore at least two small *paepae*. There are large platforms to the west of the dance space at either end, the northern one of these is a regular dwelling *paepae*, containing a square pit. An unusual feature is a stone-lined pit, 6 feet by 4 feet, sunk in the dance floor near its western edge.

Site 13. Two old war canoes, both incomplete.

Site 14. An old house, the last on the island. Sites 13 and 14 are the most interesting remains in Hakau (27, p. 303).

TAIOHAE BAY

The Taiohae bay is surrounded by mountains from which a number of small valleys run down to a narrow coastal strip of comparatively level

land. Both the valleys and the flat land contain many old structures and it is noticeable that the *tohua* are for the most part built on the level ground, two of the largest being almost at the water's edge. Taiohae was

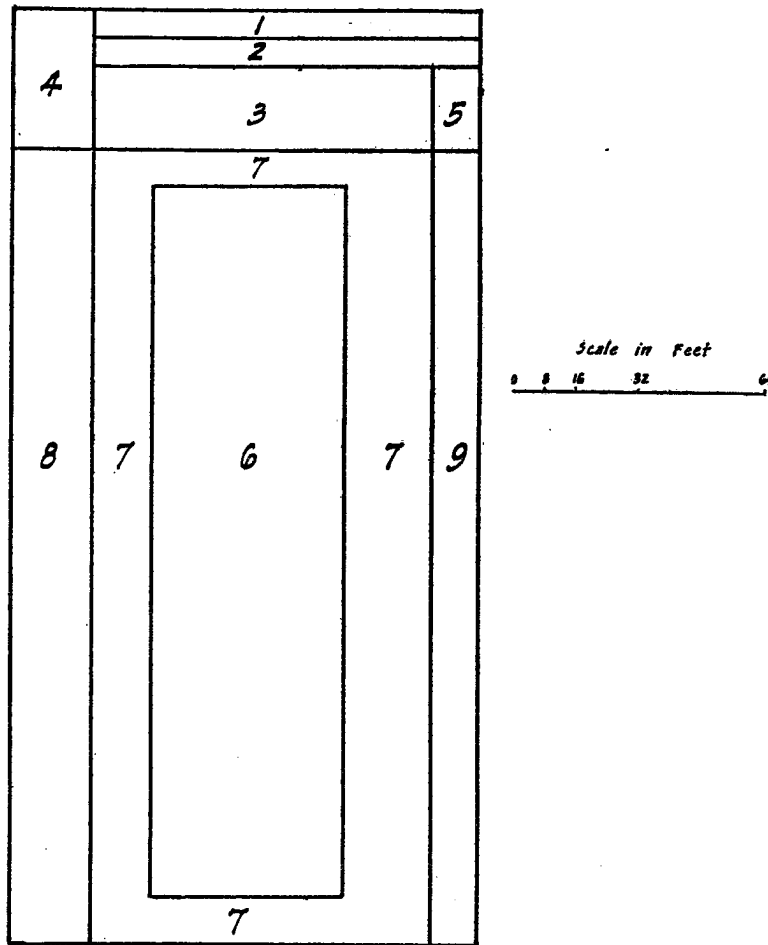


FIGURE 3.—Plan of *tohua* of Ponaouoho, Hakau Valley, Nukuhiva: (1) unpaved bed space of chief's house; (2) floor of chief's house, paved with slabs and edged with cut stone; (3) forward part of platform of chief's house, platform six feet high on side toward dance floor, and at level of slope in rear; (4) platform about four feet above dance floor, originally bore a small house, part of the chief's establishment; (5) platform about four feet above dance floor, bore the chief's cookhouse; (6) dance floor of *tohua*, unpaved; (7) continuous paved platform one to two feet above dance floor; (8) paved platform one foot higher than No. 7; (9) paved platform one foot higher than No. 7.

for many years the seat of the French administration and the center of Catholic missionary work, with a corresponding destruction of the old culture throughout Nukuhiva.

MEAU VALLEY

The Catholic Mission stands on the site of a very large *tohua*, but so much of the material has been removed that its outlines are no longer traceable. The large cross is erected on the spot where, traditionally, human victims were killed and dismembered. From the fragments of ancient construction still remaining the stones used seem to have been unusually large.

Site 15. The *tohua* of Kanino Havaikii, located on the level ground in the mouth of the valley only a short distance above the road. A slight natural elevation runs along its western side. The dance space proper is 264 feet long and 45 feet wide, and is completely surrounded by platforms and terraces. The platform on the eastern side is 25 feet wide and less than 18 inches high at the upper end, increasing gradually in height toward the sea. At the seaward end it bore a house whose bed space was edged with slabs of cut red stone, and there may have been other structures. At the upper end of the dance space is a large three-stepped platform, the highest level of which was covered by a house. The lowest step is 21 feet wide and 18 inches to 2 feet high; the second step, 7 feet wide and 2 feet high; and the third, or house floor, 9 feet wide and 18 inches high. On the western side of the dance space is a continuous terrace, now much broken, which certainly bore some *paepae* and may have had a continuous step placed about 15 feet back from its edge. Much stone has been removed from this part of the structure. On the floor of the dance space, against this rear terrace and 109 feet from the seaward end, is a low rectangular enclosure of single stones, 8 feet by 12 feet, which probably served as seats for singers. A very large house terrace overlooks the western corner of the dance space.

Site 16. The *me'ae* of Atuahoho is situated on the seaward side of the road slightly beyond the mission. This is a fairly extensive site with a number of rather small *paepae*, and traces of an enclosing wall. Some of the *paepae* appear fairly recent and may not have formed part of the original site, the largest is L-shaped, about four feet high, and paved throughout with small waterworn boulders. The most interesting structure is a *paepae* 18 feet square situated about 100 feet east of the L-shaped platform. It is three feet high with an enclosing wall two feet high around the top. In the center of the top is a pit 8 feet square in which the body of a woman, not a chiefess, is said to be buried.

Site 17. The *me'ae* of Taputehiavau; situated about 100 yards northeast of Site 15; an excellent example of the ordinary type of *me'ae* in Taiohae. It is a simple rectangular *paepae* of large stone, 33 by 42 feet, with a front height of 10 to 12 feet. A longitudinal strip, 1 foot high and comprising about one-third of the surface of the top, bore a house. Somewhat west of the center of the lower part is a rectangular slab-lined pit, 7 feet by 5 feet and at least 5 feet deep, said to have been used as a repository for the debris of sacrifices. A large banyan tree grows near the center of the *paepae*. A low, double stepped terrace extends for a short distance west of the large *paepae*, but this did not form part of the *me'ae* according to the guide, the term being applied to the large *paepae* only. On this terrace is a peculiar saddle-shaped stone about two feet long which is said to have been cut to this form, but no information could be had as to its use.

Site 18. The *me'ae* of Potekava (fig. 4); situated in the valley a short distance back of site 17, but still on level ground.

Site 19. The *me'ae* of Takahau Autea; situated on the crest of a low semi-detached hill behind Meau Valley, said to have been the residence of a priest named

Veketu. It is of very massive construction, five feet high in front and level with the ground at the rear. At the back of the main *paepae* is a paved space six feet wide edged with very large cut slabs of grey stone. This space is two feet above the rest of the platform and is probably the house floor. In the soil of the hill behind are signs of a narrow leveled area, of vague dimensions, probably the unpaved

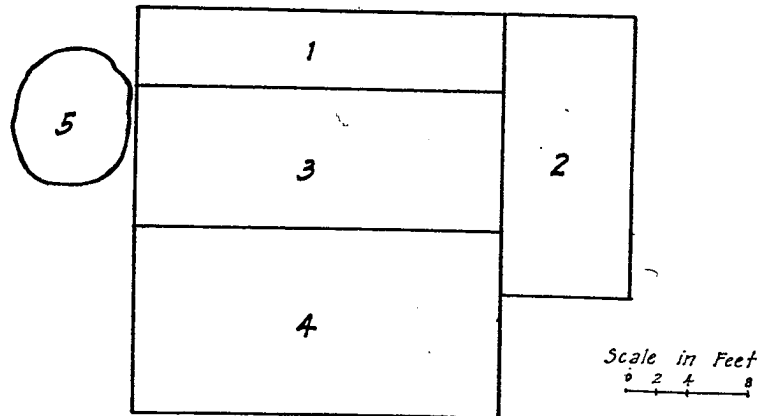


FIGURE 4.—Plan of *me'ae* of Potekava, at Meau, Taiohae Valley, Nukuhiva: (1) terrace of large stones 18 inches high on outer side; (2) platform three feet high; (3-4) main platform, seven to eight feet high, very massive construction; (3) paved area in front of sacred house; (4) floor of sacred house, floor edged with cut stone and elevated eighteen inches above No. 3; (5) large banyan tree.

bed space. Much red stone of the sort commonly used for tiki figures has been employed in the *paepae*, so that the use of a harder grey stone for edging slabs is rather remarkable. At the southern end of the space in front of the house floor is a shallow rectangular pit 5 feet by 6 feet, surrounded by a low wall.

HOATA VALLEY

Site 20. The *tohua* of Hopuau; situated at the western end of the shore road, the last hundred meters of the road being laid along one side of the dance space. It was originally one of the largest *tohua* in Taiohae. The dance space is 340 feet long and approximately 40 feet wide, of the completely enclosed type, having on the seaward side a platform 2 feet high and 27 feet wide, which bore either one long house or a series of houses. A similar platform is said to have been erected on the other side, but it has been broken up for road material. Near the western end there are two large house *paepae*, one on either side, bordering directly on the dance space. These are six feet high and of very massive construction. Beyond the *tohua* at the western end appears another very large *paepae* with its front parallel to the seaward edge of the *tohua* and evidently a part of the structure. Large transverse platforms had been built at either end of the dance space, but the eastern one has been almost destroyed by the removal of stone, while the western one bears a modern house.

Site 21. The *me'ae* of Vaovaoua; situated a short distance up valley from site 20, but apparently unconnected; much broken, but consisted of a rectangular *paepae* six feet high containing the usual pit. At the western end of this *paepae* is a typical

long narrow house *paepae*, and on the eastern end is a smaller and higher one, possibly a *taha tupapa*, both at a lower level than the main *paepae*. The eastern end of the main structure shows a few slabs of cut red stone.

Site 22. The *me'ae* of Mahaiata (fig. 5); situated in the upper part of the valley a short distance east of site 23.

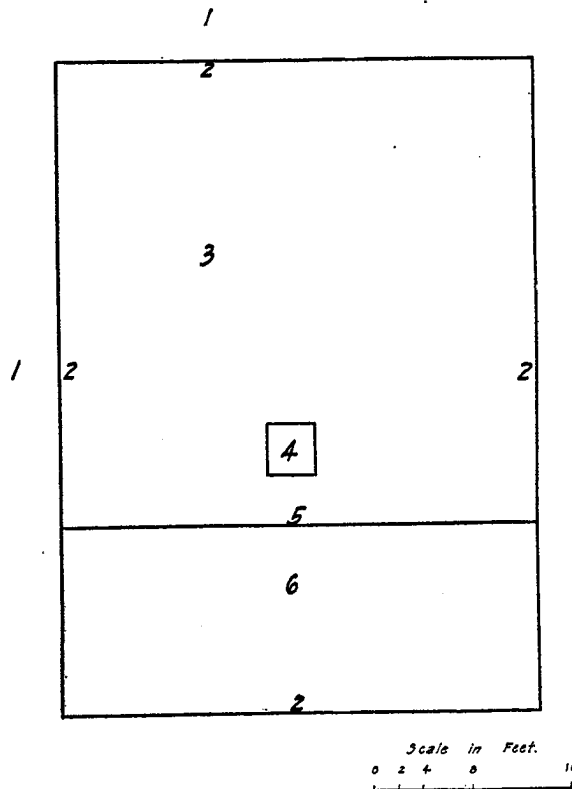


FIGURE 5.—Plan of *me'ae* of Mahaiata, Taiohai Valley, Nukuhiva: (1) Level ground surrounding platform; (2) retaining walls of platform, four to six feet high; (3) pavement; (4) sacrifice pit; (5) step eighteen inches high, faced with cut stone; (6) part of platform covered by house.

Site 23. A place for the final disposal of skulls and bones, the balanced rock of Putuhiaoa; an interesting natural formation. At present it is unscalable, but a large tree formerly grew against one side and from the top of tree it was possible to reach a crevice and from there the summit. The remains were placed on its top.

HAAVAU VALLEY

Site 24. The *tohua* of Koeva; situated just west of the road to Taipivai. This large structure is in an excellent state of preservation, but is much overgrown. The dance space is 246 feet long and is completely surrounded by platforms and terraces. The face of the outer wall is broken in four places by rectangular indentations like short passages walled across at the inner end. The platform on the seaward side

of the dance space appears to have borne a series of long houses. A number of large house *paepae* are grouped about the eastern end. Within the dance space near its eastern end is a small low platform on which bodies of victims were cut up, and at the western end, also within the dance space, a low *paepae* of considerable extent. The whole structure is of very large stone. Beyond the eastern end are additional *paepae* which seem to have formed part of the same complex.

Site 25. The *me'ae* of Hiatai; situated on a small hill to the west of Site 24; of the simple rectangular type; badly broken.

Site 26. The *me'ae* of Poheko; situated near Site 25 on a small hill to the west of site 24; rectangular type; is well preserved; bears on its platform two large banyan trees.

Site 27. The *me'ae* of Paetekeika; situated on a hill near the head of Haavau Valley; a large structure differing entirely in design from the ordinary, Nukuhivan type. It consists of three broad terraces built up a slope, one behind the other, with a number of additional pavements and low platforms, much broken, in front of the lowest terrace. The stones used are small as compared with the massive construction usual in Nukuhiva; cut red stone has been used liberally. Below the eastern corner of the second terrace is a large banyan tree evidently used for mortuary purposes, as two skulls, a few bones, and a much rotted coffin are now lying among its roots. The coffin is canoe-shaped, like those described in detail from Uahuka.

The first terrace seems to have borne at least three structures. On this terrace also lies the only piece of stone sculpture observed in Taiohae—a small head, apparently never attached to a body, probably an ornamental detail from one of the walls. The execution is poor, but the convention differs somewhat from that of any large carving seen elsewhere. The mouth is wide, with very thick rounded lips and protruding tongue, nose small and rather naturalistic, and the eyes almond-shaped, sloping downward at the outer corners. The eyeball bears a well marked longitudinal ridge. The entire face is wedge-shaped, running to an edge in front, and a peculiar feature is the deep hollowing of the space between the eye and mouth. The top of the head is rounded; the height of the face is fourteen inches.

PAKIU VALLEY

Site 28. The *tohua* of Tahunanui; a large structure. The dance space of this *tohua* is 195 feet long and 50 feet wide; it is of the usual Nukuhivan enclosed type; built on sloping ground so that the rear wall is a double terrace, the second step being 20 feet back from the edge. The usual transverse house platforms are at either end of the dance space. The front enclosing wall is a platform 36 feet wide, 2 feet high on the dance space and 8 to 10 feet high outside; it bears a number of low stone terraces. Within the dance space, near the lower western end, is a very large *ma* pit. A peculiar sunken area, appears near the eastern end of the outer platform, connected with the floor of the dance space by a channel barely two feet wide and having a similar channel running to the edge of the outer wall—perhaps an arrangement for drainage. Toward the western end of the dance space and about 20 yards behind it is a very large rectangular *paepae* built of enormous stones. Some of the rocks raised and placed in the wall must weigh several tons. The arrangement of the top is like that of most *me'ae*, but as the same features are sometimes found in large *paepae* for dwellings, the evidence is not conclusive. It probably had some ceremonial use, but the guide could give no information on this point.

Site 29. The *tohua* of Tokuhui; situated further down the valley than site 28; the smallest and crudest seen in Taiohae. The dance space has a terrace 18 inches high running along its upper side while a single row of stones marks the eastern end. At the western end there are two large *paepae*, one beyond the other, which

seem to have been house platforms. There are a few slabs of cut red stone, but the construction is inferior throughout. The absence of an enclosing wall on the outer side of the dance space is notable.

TAIPIVAI VALLEY

Taipivai Valley is the largest and most fertile in Nukuhiva, and was at one time very densely populated. Early records of the Catholic Mission give the names of fourteen *tohua* and thirty-two *me'ae*, while the structures themselves prove, by their massive stone work, the presence of a great number of laborers. At the present time there are less than a dozen adults in the entire valley, and even these survivors have forgotten the names and locations of almost all the old structures. The sites known to them were visited, but a systematic exploration would certainly reveal many others of interest.

Site 30. The *tohua* of Uahakekua; situated in the bed of the valley, the road to Hatiheu passing through the old dance floor, the largest structure in the valley and one of the largest in the island. The dance floor is 363 feet long. It was enclosed on three sides, the western side, where the ground drops away steeply, being formed by a terrace the top of which is at the level of the dance floor. Along this western edge, near either end, are a few isolated *paepae*. On the eastern side a continuous terrace of unusually massive construction bears a number of *paepae*, some of which extend out into the dance space at the northern end, narrowing it considerably. All these *paepae* show raised house floors edged with cut slabs, and one *paepae* behind the terrace near the southern end is faced with cut slabs throughout—an unusual feature. Near the center of the terrace there is an enormous *paepae*, called Hetuu, jutting for a short distance into the dance space. This has a front height of 15 feet and some of the stones of which it is built must weigh several tons. (See Plate I, A, and p. 7.) Informants state that the heads of enemies of the Hapaa tribe killed in battle were brought here and exposed while a fête was held and that the heads were thrown away after the fête. The site had just been cut over when visited, so that it was impossible to map it in the time available.

31. The *tohua* of Utukua; situated in the bed of Taipivai Valley some distance below site 30, is somewhat smaller than site 30; the stone work is much less massive, and it is in poor condition, much stone having been removed for walls and road building. It appears to be of the fully enclosed type, with many *paepae* along the platform on the western side and a few on the eastern. The cross *paepae* at the northern end is unusually large and is said to have been the residence of the chief. Within the dance space at the southern end are a number of rather small *paepae*, one of which has set on its wall a large stone tray on which the bodies of cannibal victims are said to have been laid to be cut up and distributed. This tray, which is a natural formation in part and unworked on the outside, was likened by the natives to a canoe, a natural projection at one end being called the prow. The depression is 3 feet, 6 inches long, and 20 inches wide, with an average depth of 3 inches, and has been made by enlarging a natural depression in the stone, probably a volcanic bubble.

Near the southern end of the *tohua*, and about 60 feet west of its outer wall, is a *tokai* named Paekehua. This is a small square terrace about 3 feet high and closely resembles a Hivaoan *tahu tupapau*. The guide was unable to say whether it had been used as a place for mummification.

Site 32. The *tohua* of Pehekua; located some distance up the eastern slope of the valley toward the sea from site 31; large structure. Pehekua is of the enclosed type, the lower edge being terraced to a height of 5 feet, to give a level dance floor, and surmounted by a broad continuous platform bearing a number of *paepae*. Along the upper edge there is a continuous double terrace, with several *paepae*, some of which are of massive construction. Beyond the northern end, and apparently associated with the *tohua*, is a large square *paepae*, with the usual raised house floor, which has in the front pavement a rectangular pit 6 feet by 4 1-2 feet, and 8 feet deep. A niche 2 feet deep appears at the northern side of this hole, its top 18 inches below the level of the pavement, roofed with a single heavy slab which is naturally slightly arched. Near the top of the niche a skull has been built into the wall, and the earth of the pit floor contains numerous fragments of human bone. The guide stated that prisoners destined to be eaten were confined in this pit for a time.

Site 33. The *tohua* of Kaka'atapu; located a short distance down hill from site 32, very large, the dance space enclosed on the upper side and ends only. The lower side is terraced to a height of 5 to 8 feet for at least 100 yards beyond the southern end. This terrace bears numerous *paepae*, one of which, of square form, was pointed out at a *taha tapu*, but the guide knew neither its name or use. It appears to be an ordinary house *paepae*. All this part of the site is covered with an almost impenetrable growth of *fau* and *pandanus*, making observations difficult, but all the structures investigated seem to be ordinary dwellings.

Site 34. The *me'ae* of Ahau; situated on the eastern slope of the valley between site 30 and site 31, and about 100 yards above the road to Hatiheu. On the mission list it is given as sacred to the god 'Tau'avahiaki "who makes the Mei grow," but the presence of skulls and bones and of fragments of coffins proves that it was also mortuary. It is unusually large and complex for sites of its class. At the upper end there are two *paepae*, one small and high, the other an ordinary house platform. Below these there is a square level space having on the northern and southern sides long but rather low house *paepae* which face inward. The one on the northern side is made of cut stone throughout. In all the structures on this site there is a liberal use of cut slabs. The pavements of all the *paepae* are made of waterworn boulders, mostly small ones, with selected boulders arranged along the edge above the slabs to give an ornamental effect. A short distance below the two house *paepae* just mentioned, and central to the level space, is a small square *paepae* containing a pit but no house floor, and just beyond this an ordinary house terrace, also facing the level space.

That part of the site lying below the group of structures just described appears to have rested on a large artificial terrace, consisting of a low stone wall, much broken, surrounding a very old banyan tree used for mortuary purposes, as shown by the presence of a rotting coffin in its branches. On the northern side of this tree is a pavement on which originally stood a house facing towards it. On the southern side is a small but massively constructed *paepae* containing a rectangular pit more than half full of skulls. The guide would not allow any of these to be touched and it was with great difficulty that he gave me permission to photograph it. As no skulls or bones lay in the roots of the trees it seems probable that they were gathered up and placed in this pit after the disintegration of the coffins.

Below and in front of the terrace bearing the tree traces of a pavement appear.

Site 35. The site of Paeke. This name does not occur in the Missions list of sites, and my guide, although unable to explain its nature, insisted that it was neither a *meae* nor a *taha tapu*. It seems certain that it had some special ceremonial use, but all that could be learned was that it had been the property and possibly the residence of a chief, Vehea. It consists of a square *paepae* about three feet high, with the usual raised house floor and square pit in the front pavement, facing which, about 90 feet uphill, is a very large platform bearing two long house *paepae* separated

by a way four feet wide. The whole site is remarkable for the profuse use of stone figures, a feature rare in Nukuhiva. The small *paepae* has four figures, three, of equal size, placed in the front wall, one in the center, and the others at the ends. The fourth, a much larger seated figure, now fallen, is in the middle of the northern side. The small figures in the front wall are three feet high, with a maximum width of 20 inches, and were evidently intended to be uniform. The position is the usual one, with legs half flexed and hands on either side of the stomach. They are carved in full round, an unusual feature in architectural ornaments, the space between the legs being pierced and the arms deeply cut. The heads, which form about one-quarter the total height, are almost spherical, being smoothly rounded on top. The features are carved in low relief, the eyes smaller than those of typical Hivaoan tiki and the mouths narrower and more oval. The "spectacles" about the eyes are barely traceable, and the ears are hardly indicated. The nose is of ordinary form, broad and flat. The sex of all the figures is female. The seated figure, now fallen on its face, appears to have had features of the same type.

Two unusually large stone figures are built into the front of the high terrace facing this small *paepae*. In most details they are replicas of those just described, but in addition to the usual conventional representation of the female sexual parts the breasts are indicated by two circles, carved in low relief, which overlap in the center of the chest. The figure at the northern end is 5 feet, 3 inches tall, probably the largest architectural carving in the Marquesas. Red tuff, too coarse to permit of fine finishing, is used for all the figures.

The house floors of both the *paepae* on the large platform are edged with unusually large cut slabs. In the middle of this edging, on the southern *paepae*, is a small figure of soft grey tuff, about twenty inches high, carved in full round. The position and general details of the small figure are the same as those of the large figures just described, but the head is much smaller in proportion to the body, and the eyes are indicated by pits, an unusual feature. The other features are obliterated by weathering, but the nose seems to have been high and naturalistic.

Site 36. A *taha tapu*; situated in the bed of the valley near the river. It consists of a rather small *paepae* built of enormous stone, the height on the side toward the river being 10 to 12 feet. The house floor, edged with cut slabs, is two feet high, an unusual elevation. This platform was sacred to the god Tehakanau, whose priest lived here. This priest was said to be able to see what was going on at a distance by gazing into a pool of water held in a taro leaf, charging one chicken for the exercise of his power.

Site 37. A *ma* pit; situated on the eastern slope of the valley, a short distance above the road to Hatiheu. This is circular in form, about 18 feet across, and has been excavated in the firm red soil to a depth of at least 30 feet. It must have contained food for several thousand persons, and is probably the largest *ma* pit in the Marquesas.

HOUME VALLEY

Houme Valley, although smaller than Taipivai, is fertile and held a large population in early times. Most of the *me'ae* and *tohua* are said to be in the head of the valley and I was unable to obtain a guide who knew their location.

Informants in other valleys insist that there is a large wooden image in the valley of Houme which is still held in veneration by the natives, but the people questioned there denied any knowledge of it.

Site 38. The *tohua* of Pueti; situated in the bed of the valley near the sea, almost completely destroyed to make walls and a road, but apparently not of the enclosed type, although a few scattered *paepae* are found along the lower side.

Site 39. The *tohua* of Maiki Tokiai; situated in the bed of the valley some distance above site 38; a natural level area about 300 feet long and 50 wide. A terrace of massive stone along the uphill side bears large *paepae* at either end, that toward the sea having been the residence of the chief, while the other bore the men's house. Above the terrace are some very large *paepae* overlooking the dance space. One of these, near the upper end, is 12 feet high in front and has the raised floor space and pit characteristic of ordinary dwelling *paepae* of the larger sort. There seems to have been no enclosing wall along the lower side of the dance space, although this is uncertain as a road runs through this part. A few small *paepae* are scattered along this side near the up valley end. There are also a few low platforms in the dance space.

HATIHEU VALLEY

Hatiheu Valley contains many old *tohua* and *me'ae*, but the first *tohua* visited presented features of so much interest that it seemed best to expend the limited time available in mapping it.

Site 40. The *tohua* of Nanauhi (see fig. 6) is very large, the dance space being slightly over 300 feet long; well preserved with the exception of its eastern end. It is of the regular enclosed type, with platforms and *paepae* completely surrounding the dance space.

The extraordinary feature of the site is a tunnel 72 feet long, to which the name U'upo was given by my informant, which runs under the dance floor. This seems to have been actually a drain as there are deep waterworn gulleys in the earth above and below its entrances. At the present time none of the natives know its use, but some say it may have been a tomb and all are reluctant to enter it. Entrance at the upper end is made by means of a stone-faced well. The opening at the lower end is 4 feet, 10 inches high and 2 feet, 9 inches wide. The walls throughout are of large rough stones which support a roof of slabs, also uncut but of fairly uniform width. At a place 24 feet from the lower entrance the tunnel expands into a very rough chamber 9 feet high, 5 feet wide, and about 12 feet long. The sides of this chamber are formed by four or five great boulders, so large that it seems probable that they were in their present position before the building of the *tohua*. At the lower end of this chamber the roof shows a few much rotted wooden beams arranged transversely at the level of the stone slabs of the passage and it seems probable that the greater height of this part of the tunnel is due to the rotting away of wooden roof beams with a consequent fall of the earth fill from above. The remainder of the passage has the same form as the first section.

The second feature of interest at this site is an entrance, with a series of low platforms which served as steps (fig. 6, No. 1).

The structures surrounding the dance space include a house for men, tapu to women; a house for the priest, used only during ceremonies; a house for women and children; a house for guests; and a house for old men. There are also a number of stone slabs, raised on other stones, said to have been pedestals on which young women danced at certain ceremonies.

Below the western end of the *tohua* is an irregular piece of uncultivated ground said to have been a *me'ae*. It contains no structures. A second *me'ae* visited was a simple square *paepae* with elevated house floor and pit, identical with the ordinary type in Taiohae.

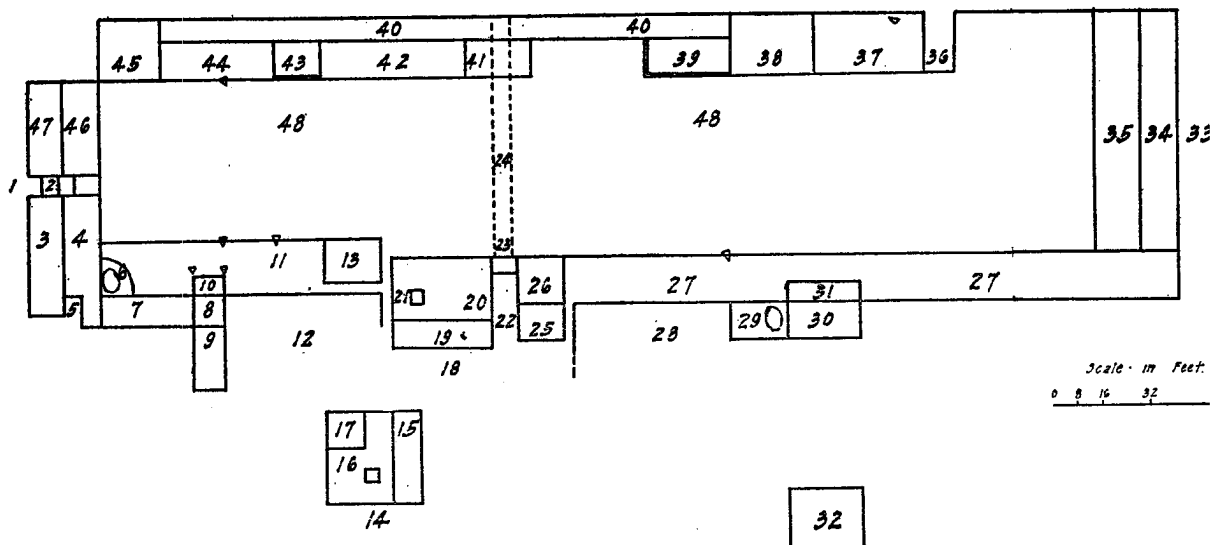


FIGURE 6.—Plan of *tohua* of Nanauhi, Hatiheu Valley, Nukuhiva: (1) entrance way; (2) series of terraces used as steps, height in inches, respectively, sixteen, about fourteen, and twelve; (3) house platform, two feet high inner side, four to five feet high outer side; (4) paved terrace eighteen inches above dance floor; (5) unpaved passageway, probably entrance from uphill side; (6) large *ma* pit protected by curved wall of rough stone; (7) paved platform eighteen inches high in front; (8) platform, three feet high front; (9) platform one foot below No. 8 in front and running into slope at rear; (10) low broken platform about one foot high; (11) paved terrace eighteen inches above dance floor, low retaining wall at rear; (12) low unpaved terrace passing into slope at rear; (13) small platform, about three feet high, was called *Taua mana oa* and bore the high roofed house of the inspirational priest; (14) large detached house platform ten feet high on side toward *tohua*; (15) house floor raised two feet above general level of platform; (16) pavement with pit; (17) small platform one foot high on top of main house platform; (18) large tribal house platform, four feet high in front; bore men's or warrior's house, tapu to women; (19) raised floor of house, eighteen inches high in front; (20) paved space in front of house; (21) pit in pavement; (22) dry watercourse; (23) well about eight feet square and ten feet deep connecting with passage under dance floor; (24) passage under dance floor, expands into chamber 9 feet high, 5 feet wide, 12 feet long; (25) terrace two feet six inches high in front, meeting slope at rear; (26) platform three feet high in front; (27) broad terrace, originally paved, one foot to eighteen inches high at front; (28) unpaved terrace, two feet above No. 27 at front, bore house for visitors from other tribes; (29) stone walled enclosure with large *ma* pit at one end; (30) terrace or platform, front two feet above No. 31; (31) lower level of platform, four feet high at front, (Nos. 30 and 31 bore a house reserved for women and children); (32) detached house platform, probably not connected with the *tohua*; (33) end wall of *tohua*, three to four feet high; (34) floor of long house at level of top of *tohua* wall; (35) paved terrace one foot above dance floor; (36) indentation in wall of *tohua* which is here ten to twelve feet high, not an entrance; (37) pavement about one foot above dance floor; (38) platform four feet high, reserved for old men; (39) paved area at level of dance floor enclosed by low wall; (40) platform one to two feet above dance floor; (41) low platform or enclosure much broken; (42) paved terrace one foot above dance floor; (43) unpaved area at level of dance floor, low wall across front; (44) paved terrace one foot above dance floor; (45) platform four feet high, where stood beaters of the long drums; (46) pavement eighteen inches above dance floor; (47) house floor, two feet higher than No. 46, has traces of low wall around; (48) dance floor of *tohua*; the whole *tohua* is built on a long terrace from eight to fifteen feet high on the lower side. The triangular figures indicate the position of stone pedestals on which dancers stood.

Site 41. A pit; situated near the road to Aakapa. This pit, which is 30 feet across and still 3 to 4 feet deep, is said to have been used as an earth oven for cooking the roots of the ti plant. These roots were cooked only for a general fête. The great oven must have contained enough for several hundred people.

AAKAPA VALLEY

Site 42. The *tohua* of Puamau; situated along the road from Hatiheu; a large structure of the enclosed type of comparatively simple construction. It was used for cannibal feasts, revenge victims being killed and eaten here with the regular ceremonies. The natives insist that true human sacrifices were also made here. A captive enemy was killed, the body washed in a special spring a short distance below the *tohua*, and carried to a large stone on the edge of the *tohua* dance space. On this stone the body was exposed until decomposed. The informant was not clear as to what determined whether the captive was to be eaten or sacrificed, but only those persons who were not required to square the revenge account of the tribe appear to have been sacrificed.

Site 43. The *tohua* of Tahuka, a large site so nearly destroyed that its plan could not be determined.

Site 44. A place pointed out at a *me'ae*; no structures. An overgrown area with two large *temanu* trees.

MOTUHEE VALLEY AND PLATEAU

Motuhee appears to be the westernmost inhabited valley on the northwest coast of the island. Although fertile and well watered it contains very few remains, the only structures seen being a few ordinary house *paepae*. A curious pounder with a head of unusual form was obtained here, the owner stating that he had dug it out of a sand dune near the sea. The dune was visited and appeared to be recently formed.

The plateau was uninhabited in the earliest historic times and in the course of a long trip throughout the most fertile part of it no remains were seen. In the mouths of the valleys which run down to the sea are occasional house *paepae* which are said to have been built by fishermen who spent the night there when on long trips. These *paepae* were tapu to all except fishermen, but their use seems to have been purely utilitarian.

Informants in Hakau stated that the skulls and bones of the dead were formerly taken to the plateau for final disposal, but none of these ancient burial places are now known.

UAHUKA

Uahuka belongs to the northern division of the Marquesan group and lies almost due east of Nukuhiva. In shape it is a short broad crescent with a chain of almost impassable volcanic mountains running east and west. On the northern side of the island are a few small valleys which have running water and a fairly dense tree growth in their upper parts, but all this coast

is extremely barren and forbidding, with high sea cliffs and long slopes or broken volcanic rock devoid of vegetation. The valleys on the southern coast are larger and are, for the most part, well watered and fertile. The lower parts of the larger valleys are sandy, but coconuts and breadfruit grow well in the light soil.

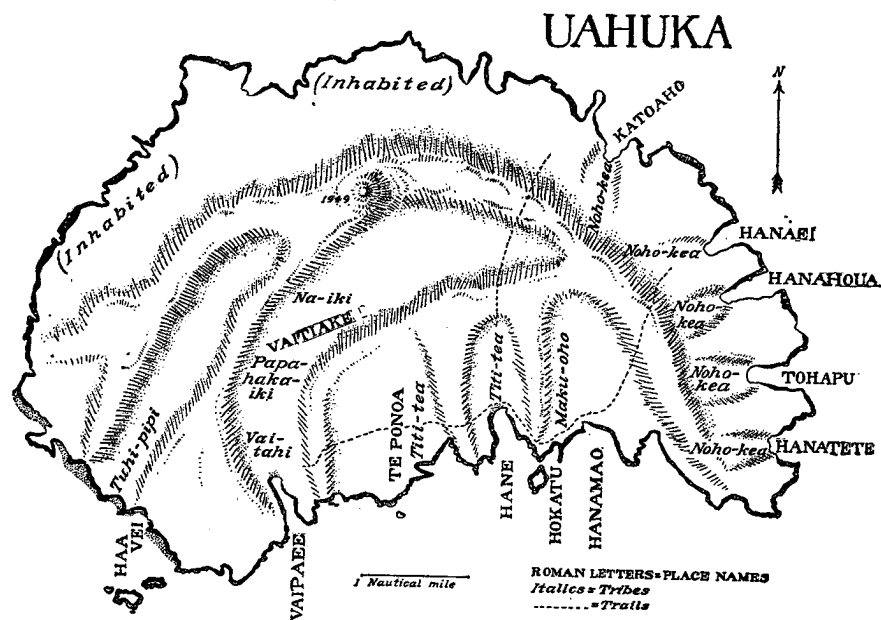


FIGURE 7.—Map of Uahuka (reproduced from Handy, 19).

Three of the southern valleys are inhabited at present: Vaipaeë, Hane, and Hokatu. The contact of the natives with the French authorities has been closer and longer here than in the islands of the southern division, and the old culture has suffered a correspondingly greater destruction. Much of the present population has been drawn from the other islands of the group, and even those born on Uahuka remember little more than the names and locations of the old *tohua* and sacred places and are unable to give any definite information as to their uses.

Most published charts for Uahuka are defective, almost all the place names being incorrect. In my descriptions the actual native names have been used instead of the chart names, as follows: Hanaëi for Hana He, Hokatu for Hana Nui, Hane for Hana Nai, Hiniaëhi for Iniaëi, Vaipaeë for Vai Take.

HANA EI VALLEY

Hanaei is an uninhabited valley on the north side of the island. It is divided into two parts by a ridge running down almost to the sea.

Site 45. Sacred place for fishermen; situated in the lower part of the valley, western side, about fifty yards back from the sea; well-preserved; main *paepae* of large seaworn boulders; some posts still standing. For details see fig. 8.

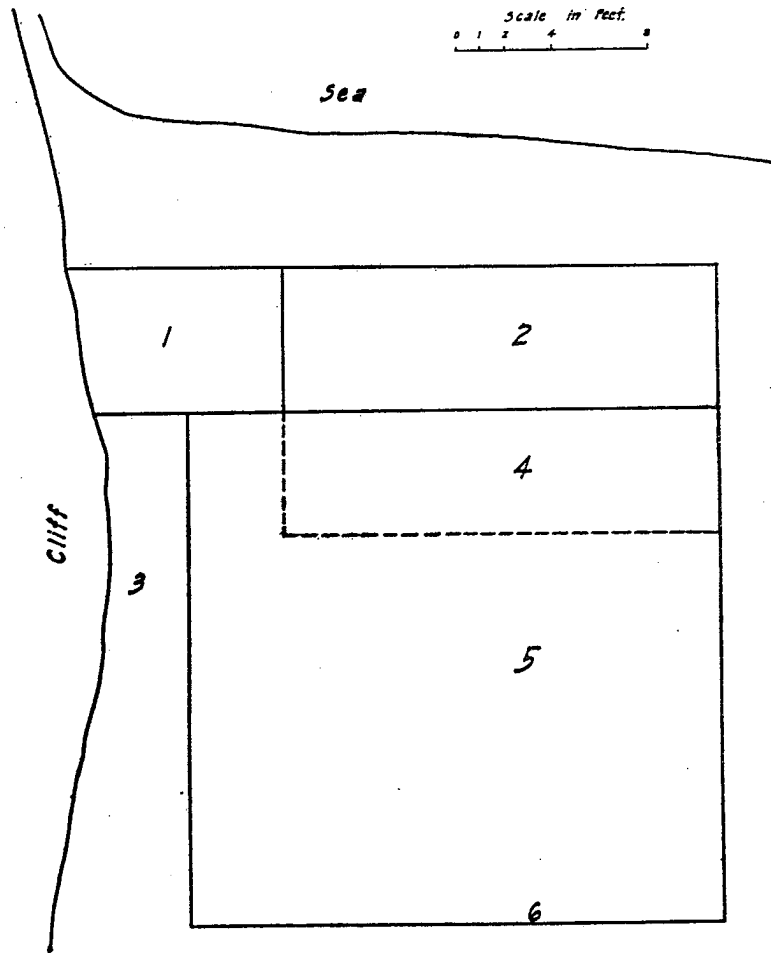


FIGURE 8.—Plan of sacred place of fishermen, Hanaei Valley, Uahuka: (1) unpaved area bordered on seaward side by low wall; (2) bed space of house, filled with soft earth; (3) platform eighteen inches above level of No. 5 in front and sloping upward at the rear, made of small stones and faced with large slabs; (4) floor of house; (5) pavement; (6) low retaining wall, much broken, ground behind No. 6 at a higher level than No. 5.

Site 46. A heap of eight or ten large rough stones, pointed out as a *tokai*; situated on the eastern side of the ridge dividing the valley; 8 feet across and 2 feet high; no terraces or *paepae*.

Site 47. The *me'ae* of Mataihumanu; located on the eastern side of the dividing ridge, about six hundred yards farther up the valley, at a higher level; construction simple, reminiscent of the *tohua* type (fig. 9). A large banyan tree grows short distance down hill from the *me'ae*, but neither this nor the site itself showed any sign of mortuary use.

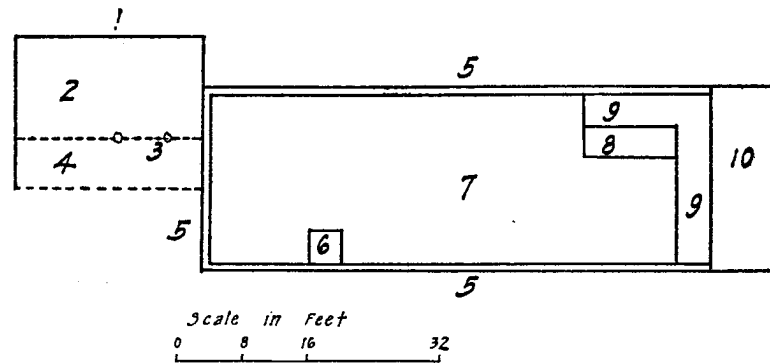


FIGURE 9.—Plan of *me'ae*, Hanaei Valley, Uahuka: (1) terrace or platform three feet high in front and at level of slope in rear; (2) paved forward part of platform; (3) line of front of house with four carved posts still standing (p. 305); (4) unpaved interior of house; (5) walls of rough stone two feet high, one to two feet thick; (6) small rectangular enclosure of single large stones; (7) artificially leveled area, unpaved; (8) pavement; (9) paved platform one foot high; (10) paved platform eighteen inches high in front and two to three feet high in rear.

The interesting feature of this site is a series of four carved house posts, two of which are still standing on the main *paepae*. From the size and arrangement of those remaining it seems probable that originally there were six posts, four supporting the front stringer and two the ridge pole. The front posts are 5 feet, 2 inches high, while the end posts, both of which are now badly weathered, are 8 feet, 6 inches high. The posts remaining are carved into tiki figures. The tiki on the end posts of the front row faced inward, as did those of the end posts proper, while those of the other front posts faced forward.

The carving follows the usual Marquesan technique, with wide mouth and spectacle eyes, and the heads of the figures are of uniform size. The figures on the end posts of the front row are legless, those on the other posts are complete, the space between the legs being pierced. The backs show some slight attempt at modeling, but the figures are conventional rather than naturalistic. Three of the tiki have the hands on the stomach, the common position, but the fourth has the left hand to the chin, a pose common on small carvings, but unusual in large figures. A striking feature of all the figures is their great height in proportion to their width, plainly a result of their use as house posts. (See Pl. V, C.)

Site 48. Burial site; situated near the head of the eastern fork of the valley. About half way up a sharp detached pinnacle of rock a groove approximately 5 feet wide and 4 feet high has been formed by the wearing away of a soft stratum. This groove curves across the face of the rock for at least 200 feet, sloping gradually upward, and can be reached only at the eastern end. At least half its length is filled with coffins, stacks like cord wood, the oldest being at the further end. The nearest

coffin has a covering of ordinary white cotton cloth and an unopened can of sardines beside it as a food offering.

The scruples of the guide prevented the taking of photographs or the least disturbance of the remains at Site 48 but it was evident that the mortuary practices here differed somewhat from those in Hivaoa. The bodies were carried to the cave in coffins, probably after mummification, but the body seems to have been covered by a simple pall of tapa. No traces were seen of the covering mats of heavy fau poles, which are an almost constant feature in Hivaoa. The coffins also differ in form, being widest and deepest in the middle, with a gradual taper toward the ends. The ends are flat, in the form of a circle or square with rounded corners, the upper part being formed by a flange of wood which projects above the level of the edges of the coffin to a distance equal to approximately two-thirds of the depth of the depression at the end. Each of the coffins was cut from a single log, the surface being rubbed as smooth as that of the ordinary wooden bowl, but no traces of ornamental carving are apparent. The ornamental lashings seen on some Hivaoan coffins are also lacking.

MEASUREMENTS OF HOUSE POST FIGURES IN HANAËI VALLEY

	<i>Tiki A</i>	<i>Tiki B</i>	<i>Tiki C</i>	<i>Tiki D</i>
Height	5 ft. 2 in.	5 ft. 1 in.	7 ft. 8 in.	6 ft.
Projection above head ..	1 ft. 1 in.	1 ft.	1 ft.	10 in.
Band above face	2 in.	1-1/2 in.	2 in.	2 in.
Length face	1 ft. 2 in.	1 ft. 2 in.	1 ft. 2 in.	1 ft. 2 in.
Band to ear	4 in.	4-1/2 in.	4 in.	4 in.
Length ear	6 in.	6 in.	6 in.	6 in.
Width ear	—————	1-1/2 in.	—————	1-1/2 in.
Jaw to shoulder	6-1/4 in.	4-1/2 in.	4-1/2 in.	—————
Length arm	1 ft. 5 in.	10-1/2 in.	1 ft. 4 in.	5 in.
Width arm	2 in.	2 in.	2 in.	9-1/2 in.
Elbow to thigh	Legless	5 in.	11 in.	6 in.
Thigh to knee	"	—————	10 in.	—————
Total leg length	"	11 in.	2 ft. 4 in.	1 ft. 11 in.
Shoulder width	1 ft.	1 ft. 1 in.	1 ft. 1 in.	11 in.
Length forearm	—————	—————	1 ft. 7 in.	—————
Length base	—————	—————	1 ft. 7 in.	—————

HOKATU VALLEY

Hokatu is one of the three inhabited valleys of Uahuka, the next valley to the east of Hane. Although small, it was formerly thickly inhabited and was at war with Hane and Vaipee. Practically no remains are to be found in the lower part of the valley, but many *paepae*, *tohua*, and *me'ae* on the steep slopes around its head.

Site 49. The *tohua* of Hinapootu, situated on the eastern side of the valley near the foot of the cliff; a simple platform nearly 200 feet long, 6 to 8 feet high on the lower side, about 40 feet wide. On the upper side is a low terrace with a

few irregularly arranged *paepae*. At either end of the dance space is a low house. A series of six *ma* pits, originally approximately 6 feet wide and at least 10 feet deep are arranged about 15 feet apart along the back of the dance space at its eastern end. The easternmost pit is walled with stone to a depth of about four feet.

Site 50. The *tohua* of Pihiei; situated below and to the left of Site 49, and slightly smaller than it; built on the same lines, but has no terrace behind the dance space. At the western end of the main platform are some other structures. The *tohua* is much broken, the stones having been removed to build walls.

Site 51. The *tohua* of Peketani, best preserved in the valley, said to be comparatively new. The structure is unusually symmetrical, consisting of a large dance space 132 feet long and 42 feet wide, flanked at either end by low house pavements extending the entire width. Behind the first terrace, which is about 5 feet high on the lower side, is a second terrace 3 feet high, near the center of which, a short distance back from the edge, are two square *paepae* connected by a low wall flush with their fronts. The easternmost *paepae* is the deeper, but both *paepae* have the same frontage on the dance space, and both bore houses. Guide stated that Peketani meant English.

Site 52. The *tohua* of Teveohomana; said to have been the great central meeting place of the valley; largest *tohua* visited; much overgrown and in some places broken and built over by modern walls. My informant states that the dance space was surrounded with houses (statement borne out by the presence of *paepae* on the line of the outer edge of the lower terrace as well as at its ends); and that there was also a very large house, over 100 feet long, on the edge of the second terrace. At the eastern end of the main *tohua*, separated from it by a narrow gully, is a series of platforms and *paepae*, a ceremonial structure. At the western end is a simple, long, paved platform, the front wall continuous with that of the second terrace of the *tohua*, its top at a slightly lower level. This structure is not considered part of the *tohua* but seems to have had some special ceremonial use, which the guide was unable to explain. The guide said it was formerly the dwelling of a *vahini hai* (an ogress). The *tohua* of Teveohomana was used for cannibal feasts; on one occasion the son of a chief of Vaipae was killed and eaten here.

Site 52a. The *me'ae* of Ahau; west of Site 52, separated by a short distance and probably definitely associated with it. This structure consists of (a) a lower platform, wide and paved, and seeming originally to have borne several houses, said by guide to be the *me'ae* proper, full of skeletons; and (b) a large, almost square platform, 12 feet high on the lower side, behind and above the lower platform, overlooking it but not continuous with it; bearing a banyan tree; and having at the rear center a small but high *paepae*, reminiscent in its form of a *taha tupapau* which was said by the guide to be the *paepae* of the priest's house. The guide distinguished sharply between the upper and lower platforms, saying the lower was the *me'ae*, the upper the priest's platform.

Site 53. The *me'ae* of Taiaipaita; largest *me'ae* visited in Hokatu Valley; situated some distance above Site 49. Built on a steep slope, unconnected with any other structure. The temple proper consists of a long terrace of rather massive masonry 5 to 6 feet high on the lower side. Two *paepae* of unequal size are on the main terrace of the *me'ae* proper, their front flush with its edge. The western *paepae*, the largest, is terminated by a wall of single large stones and seems to have had a continuous pavement, now much broken. The eastern *paepae*, separated from the western one by a narrow depression, is smaller; its top is divided into two parts, the eastern one edged by a line of cut red stone, its top being 18 inches above the other. This portion of the *paepae* is said to have originally had wooden images on it. Leaf mold on the top contains fragments of human bones. About 20 yards below

the *me'ae* proper is a small *paepae*, from whose ends two walls project forward for about 4 feet; the statement of the guide that this was the house *paepae* of a resident priest is made improbable by the presence of human bones. Beyond the main terrace on the east, separated by 12 feet of natural surface, is a second *paepae*, its front on a line with the main terrace, and of approximately the same elevation. A banyan tree, growing on the western edge of the *paepae* and in the space between it and the main terrace, has many skulls and bones scattered among its roots and in its branches are the much rotted remains of at least four wooden coffins with bones protruding from them. No artifacts were found but a large lump of coral and a pig's skull lay among the human bones, and the barrels of three old muzzle loading guns were picked up close by. The steep slope behind the *me'ae* yielded the skulls and long bones of three persons, evidently brought there after the disintegration of the bodies, and it probably contains other remains.

HANE VALLEY

Hane Valley is small, but it is the main harbor of Uahuka. The lower part is sandy and contains only a small *paepae* and a *tokai*. On the rising ground toward the head of the valley are many large and well built house

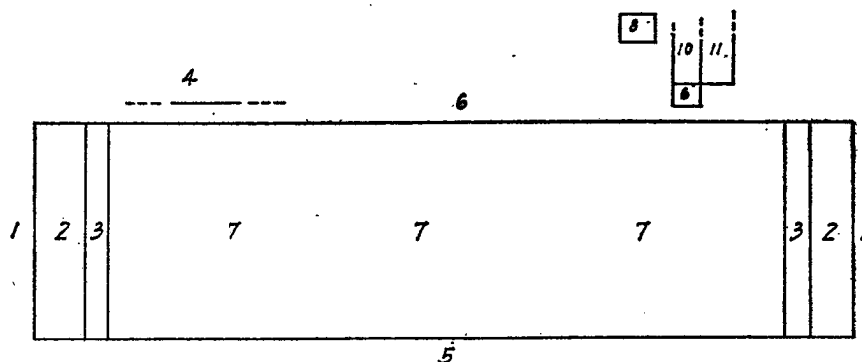


FIGURE 10.—Plan of *tohua* of Vaitukuhai, Hane Valley, Uahuka: (1) outer walls of *tohua*, four feet high; (2) house platforms, surfaces at level of top of outer walls; (3) paved strips eighteen inches above level of No. 7, and two feet below level of No. 2; (4) traces of a terrace or platform, much broken; (5) stone faced terrace supporting *tohua*, four to six feet high; (6) stone faced terrace overlooking dance floor, three feet high; (7) dance floor; (8) small paved platform; (9) small paved terrace; (10 and 11) small paved terraces, top of No. 11, about eighteen inches below that of No. 10. The ground slopes upward steeply behind No. 6, so that structures Nos. 4, 8, 9, 10, and 11 are from six to fourteen feet above the level of No. 7.

paepae, several *tohua*, and at least one *me'ae*, though the natives insist that there are no *me'ae* in Hane, all belonging to the valley being situated in the head of the next valley to the west.

Site 54. A *tokai*, situated across the road from the French Government house; consists of a single round stone of moderate size, around which are traces of a pavement, small and broken.

Site 55. The *tohua* of Oneei; situated a short distance west of the main road up the valley; a simple rectangular platform well over a hundred feet long. At either

end of the platform is a low house *paepae* running the entire width, and at the rear center a large and well built *paepae* three feet high, said to have been the *faepukau* or seat of the queen during fêtes. There are no other *paepae* or seats, and no rear terrace, the dance space running lengthwise of a narrow ridge.

Site 56. The *tohua* of Vaitukuhai; simple construction; has a rear terrace and a few small *paepae*, evidently seats, on the slope above one end. See figure 10 for dimensions and arrangement.

Site 57. The *tohua* of Keetupu; built transversely on a narrow ridge which drops away almost vertically on the western side and slopes steeply on the eastern side and lower end; consists of a long dance space with a house *paepae* at either end, a rear terrace, and several small *paepae* for seats. It has a rectangular enclosure surrounding the eastern two-thirds of the dance space, in the nature of a fortification, newer than the main part of the structure, the wall of the enclosure set back 8 to 10 feet from the edge of the lower terrace and is 4 feet high and from 2 to 3 feet thick, and at the eastern end flush with the edge of the terrace. About fifty yards uphill from the *tohua* is a second wall similar to the first, and loop-holed for musketry; this wall runs to the edge of the steep slope on the west and is joined at the eastern end by another breastwork which runs along the eastern edge of the second terrace of the *tohua* and probably originally connected with the enclosed part of the dance space.

58. The *tokai* of Anitahaana; situated on the top of a ridge not far from the *tohua* of Keetupu; for form and dimensions see the map, figure 11. The sides of the platform are much broken, but appear to have originally sloped inward toward the top—an unusual form of construction. This *tokai* was sacred to Queen Manuhekua but the guide was unable to say whether regular ceremonies were performed here.

Site 59. The *me'ae* of Meaiaute; situated in the eastern part of the head of the valley; hidden by dense growth of pandanus; seems to consist of three independent platforms, unpaved, arranged one above the other on a narrow and very steep ridge; has crude stonework. The highest platform has a step or low terrace 7 feet deep running the width of its front, the top of the step being 18 inches below the level of the terrace proper. Near the center of this step is a large fallen tiki (Pl. VII, C), 5 feet long, cut out of the usual soft red stone; the face of this figure shows the common convention of spectacle eyes and broad mouth, but the eyes are slightly slanting; the ears are carved in full, standing at right angles to the head, a rare convention in stone figures. The guide stated that there were four other large stone figures but was unable to find them because of the dense growth. Behind the large fallen tiki is a slab of cut stone set in the wall with a figure a foot high in very high relief carved on one end. This figure is much broken and defaced.

HINIAEHI VALLEY

Hiniaehi Valley, which has been uninhabited for many years, contains very few stone structures, but some skeletal material was obtained from burial places.

Site 60. Burial place; situated at the edge of the sea on the western side of the valley; a natural crevice in the rock, not prepared in any way; contained the skulls of five adults, a great number of coconut shells, skulls of pigs, and large fish, probably food offerings; no artifacts. The bones had been placed in the crevice after the disintegration of the body. Immediately in front of the cave was a *paepae* which seemed to be a *taha tupapu*, but which had an unusually large pavement in

front of the space for the corpse. A single much weathered skull lay among the rocks behind this structure.

Site 61. Burial place; eastern side of the valley; a small crevice in the face of the cliff near the top of a very high crag; contained only two skulls with their jaws, and fragments of a third.

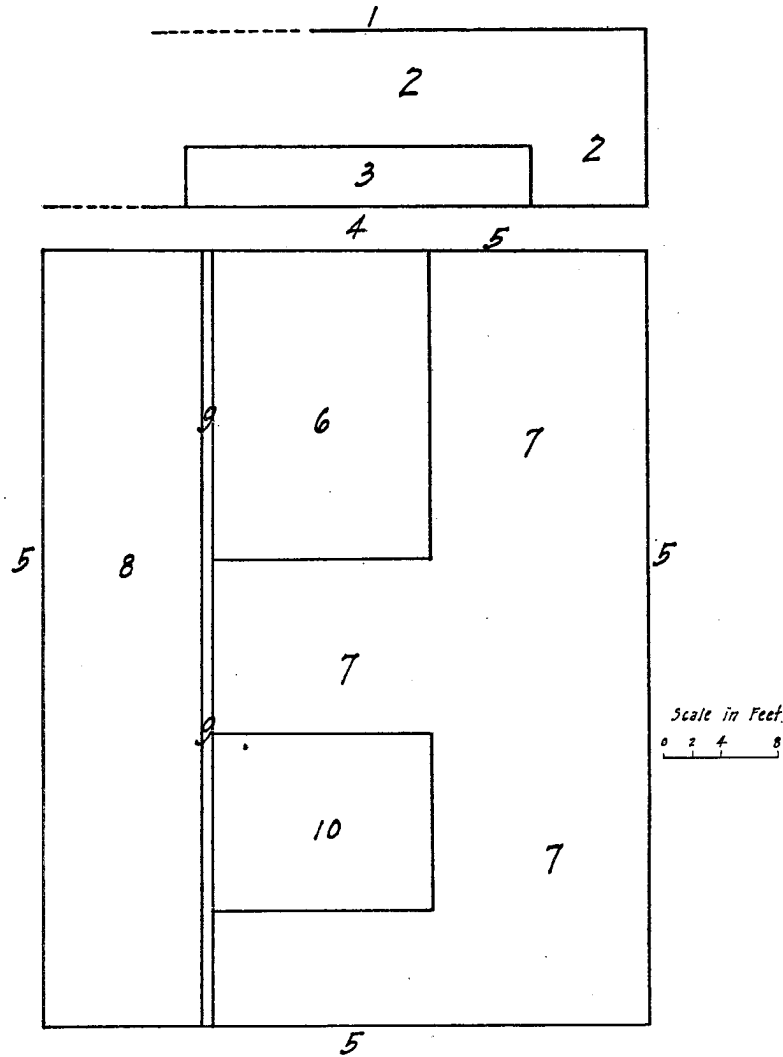


FIGURE 11.—Plan of *tokai* of Anitahaana, Hane Valley, Uahuka: (1) low, much broken terrace, apparently upper boundary of structure; (2) unpaved top of terrace; (3) pavement; (4) level ground between terrace and large platform; (5) retaining walls of platform, eighteen inches to two feet high, sloping inward toward the top; (6) unpaved area at level of No. 7; (7) paved top of platform; (8) unpaved area, apparently site of house; (9) low wall of large stones; (10) depressed paved area eighteen inches below level of No. 7.

Site 62. A *me'ae*, situated on the summit of the crag, above Site 61; a large *paepae*. It is reached by climbing a very narrow steeply sloping ridge, on a part of which a causeway of large stone has been built apparently to improve the route.

Site 63. Two small houses; situated at the mouth of the valley, just back from the beach; built of rough stones, the walls about 3 feet high; probably modern. Stone houses are very rare in the Marquesas Islands.

VAIPAEE VALLEY

Vaipae, an inhabited valley, is more than five miles long, but the bottom is nowhere more than a few hundred yards wide. The numerous old stone structures are confined to the slopes around the head of the valley and the crests of the ridges bordering it. The natives say that there is a large stone figure in one of the *me'ae* in this valley, but no guide who knew the location could be found.

Site 64. The *tohua* of Puahaka; said to be the largest in the valley; situated on the eastern side, about three miles from the mouth of the valley and near the top of the ridge; consists of a rectangular dance space terraced out from the hillside and bordered on the lower side by a low wall 6 feet wide. At either end of the dance space is a large house *paepae* with a paved step, extending the length of the space. On the upper side of the dance space are a series of stepped terraces and platforms, reminiscent in arrangement of those in the great *tohua* in Taaoa Valley, Hivaoa. Behind the *tohua* proper are a series of detached *paepae* extending some distance uphill, the whole group having been formerly enclosed by a wall of rough stone. This was probably a *me'ae* connected with the *tohua*. One *paepae* is a *taha tupapau*; one contains a pit like those used for the deposition of skulls in the Hivaoa *me'ae*; one is a house *paepae* with a *ma* pit beside it, and two others bear very large banyan trees, artificially planted. The stone work at this site is excellent, many of the rocks being very large, but there is an absence of cut stone and carvings.

Site 65. The *tohua* of Vaiapa; situated a few hundred yards farther up the valley from Site 64, at approximately the same level. The dance space is a strip of naturally level ground, without any enclosing wall; the terraces and platforms overlooking it are less extensive and elaborate than those of Puahaka. No *me'ae* is connected with it.

Site 66. The *tohua* of Tomitahuna; situated on the main trail, a short distance beyond Site 65; stands on a naturally level space behind which the ground slopes up steeply to a wooded crag, which is visible from the trail for some distance and may serve as a land mark. It is smaller than Sites 64 and 65. The dance space cannot now be identified. There are three fairly large and a few small *paepae*. On one of the large *paepae* lies a much rotted small drum, and on another a large drum.

Site 67. The *tohua* or *me'ae* of Vavau; situated at the foot of the same crag as Site 66, on the northern side; consists of two large *paepae* and a natural elevation, paved and stone-faced to form a third, which probably bore a large house. The two large *paepae* have their fronts in line. There is, midway between and behind them, a very large banyan tree, apparently artificially planted. The name Vavau appears in the list of *tohua* for this valley, and also in the list of *me'ae*, and the guide did not know to which class this site belonged. The form suggests that it is a *me'ae*.

Site 68. The *me'ae* of Metanioata; located on the top of one of the hills dividing Vaipae from the next valley to the east. The ground is fairly level and the

me'ae consists of a series of small narrow *paepae*, scarcely higher than pavements, arranged around the edges of a large rectangular space. Near the western end of the rectangular space are the remains of a rough pavement, much broken. The *paepae* are built of a porous lava not found in the immediate neighborhood. Half a dozen old ironwood trees grow at the eastern end of the *me'ae* and have enclosed or displaced many of the stones. The site contains no images or cut stone, and there are no signs of mortuary use.

Site 69. House *paepae*, large and well built, of ordinary form; situated on the slopes in the neighborhood of the *tohua*.

Site 70. *Taha tupapau*; each has in the rear half a rectangular pit, going down to the ground level. One pit contained fragments of a skull and long bones.

UAPOU

FROM NOTES BY E. S. CRAIGHILL HANDY

HAKAHETAU VALLEY

Site 71. The *tohua* Aotoka; situated in the flat part of the valley about three hundred yards from the sea, beside the stream; site is now occupied by the house of Samuel Kekela; is badly torn up. The *tohua* ran lengthwise of the valley, and is said on trustworthy authority, to have been fully one hundred and fifty yards long. The *me'ae* attached to this *tohua* consisted of a *paepae* (perhaps several) on the side toward the stream, and was surmounted by a great banyan tree. There is no evidence of cut stone.

Site 72. The *me'ae* Tapaiupoho; situated in the middle of the valley about three quarters of a mile up from the sea (Pl. I, B). (See figure 13 for plan.) The main *paepae* has at the down valley end two house *paepae*, at different levels and at right angles. The upper levels of these *paepae* are faced with *ke'etu*, without carving. The lower section of the upper house *paepae* is filled with the remains of sacrifices—bones of humans or of pigs, and shells. There is no evidence of a pit. In the main *paepae* the only *ke'etu* is one stuck into the wall merely as building material, two large ones lay abandoned on the lower hillside, relics of earlier construction or of uncompleted work. A high relief *tiki*, judged to be old from the amount of weathering, was photographed on one of these blocks. The banyan, at least twenty-five feet in diameter, standing on the main *paepae*, has around it, buried in the ground beneath, and entangled in the roots, so many of the large sea shells called *puhaha* (very common in this bay) that the conclusion is unavoidable that these were offerings or for decoration. In the banyan were found a skull and mandible and several long bones; the remains of a coffin lie at one side. Behind the banyan is what was either a stairway or a ramp (p. 14). The sides of this stairway were made with naturally square stones accurately laid. At the upper end, where the depressed plane of what appear to have been steps meets the level of the main *paepae*, there is a long flat slab of stone on its side like a sill or upper step. The stairway, about 4 feet wide and 8 to 10 feet long, is in a bad state of preservation, but the position of the large, flat, round, weatherworn stones leads to the belief that they were true steps. The *paepae* of this *me'ae* are accommodated to the side of a small hill at the base of which they are built. This hill runs back and up like a gradually ascending causeway until it ends in a great, high, outcropping rock which stands over the stream with a straight drop of about fifty feet. On parts of this ascending slope are evidences of paving, not level, but running with the slope toward the *paepae*.

Site 73. The *mouka* (fort) Vaiponi, situated in Hakahetau Valley, consists of small house *paepae* in a protected position with water and food stores nearby.

Site 74. The fort Totamahiti; situated in the valley; consists of small house *paepae* in a protected position with water and food stores nearby.

Site 75. The fort Hapava; situated on the mountain top on the west side of the valley, in an ironwood grove; served as a refuge and a lookout, viewing the

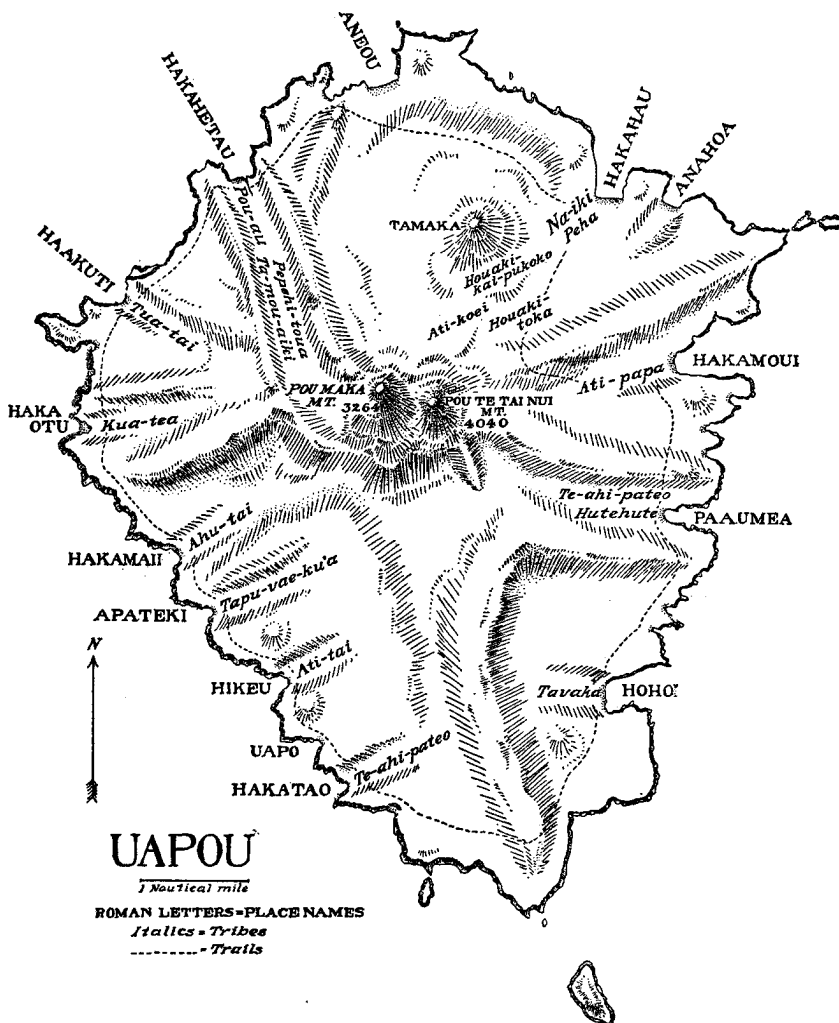


FIGURE 12.—Map of Uapou (reproduced from Handy, 19).

approach from the east, the direction from which the enemies of the Pouau came. The fort consists of a long house *paepae* of two levels scarcely raised above the ground; approximate dimensions, length 60 feet, breadth 12 feet. The usual line of *ke'etu* forms the facings of the upper level, which was paved with very small sea boulders (*kiva*). The rest of the *paepae* is made of rough mountain stones. About thirty yards southwest is a small rough pavement 4 feet wide and 8 feet long. A few yards northwest are two sections of rough stone wall, one 18 feet long, 4 feet

broad, and from one to 2-1/2 feet high, the other 12 feet long, 5 feet wide, and from 2 to 2-1/2 feet high. The walls are separated from each other by a 12 foot break. The second wall runs into a pile of stones, such as are used in the walls, the pile being of roughly rectangular shape but without lining walls. It is about 25 feet long by 18 feet broad. Mr. Kekela said this was a place for religious ceremonies. Nearby are two old ironwood trees at the bases of which have been small pavements. A hundred yards or so to the southwest of the site is a break in the cliff which would give access to the fort from the valley below. The chief here called this a bad *mouka* because there was neither water nor food supply.

Site 76. The *tapu paepae* of the fishermen; situated at the northwest corner of the bay, Hakanahi, just east of Hakahetau; consists of a large house *paepae*.

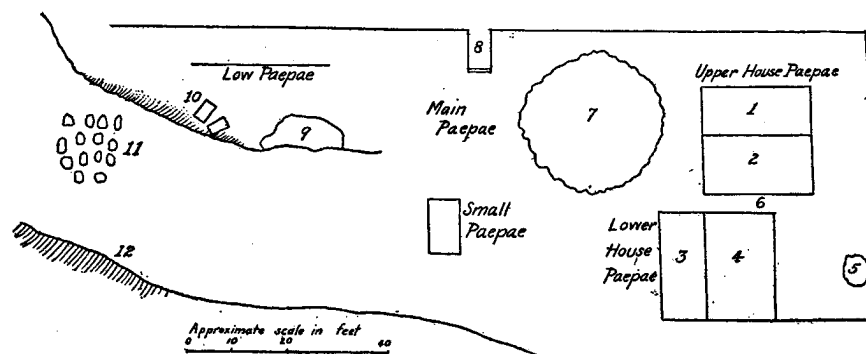


FIGURE 13—Plan of *me'ae* of Tapaipuoho, Hakahetau, Uapou; (1) upper level and (2), lower level (front) of upper house *paepae*; (3) upper level and (4) lower level (front) of lower house *paepae*; (5) small banyan tree; (6) passage way; (7) large banyan tree; (8) stairway or ramp; (9) pile of stone; (10) *ke'etu*; (11) paved area; (12) hill leading back to a high rock. At its front, the structure stands 5 feet above level ground; the floors of the house *paepae*, 1, 2, 3 and 4, are respectively, 4 feet, 3 feet, 18 inches, and 6 inches above the level of the main *paepae*.

Site 77. A burial cave; situated about a quarter of a mile from Hakahetau along the road to Hakahau, about a hundred yards up the hillside; has an entrance with a diameter of about two feet, showing evidence of having been artificially hollowed in the soft crumbling, whitish rock. A new looking coffin made of boards obstructed the entrance. In the bushes on the hillside below are the remains of several coffins of the hollowed log type with flat ends, and a very few scattered bones.

Site 78. The *tohua* Utukua; situated half a mile up from the sea; runs transversely with the length of the valley, and along the stream, whose course here is at right angles to the valley, and along the stream, whose course here is at right angles to the valley; ancient; overgrown with brush. There are several large house *paepae*, the upper level of one faced with *ke'etu*, and several large *paepae* of indeterminate use. One *paepae*, about 8 feet high and 25 feet square, has associated with it, at right angles to it, a house *paepae* of about the same dimensions but lower. At one end of the *tohua* is a large *paepae*, probably for a house, partly undermined and washed away by the stream.

HAAKUTI VALLEY

Site 79. The *tohua* Papaei; situated in the middle of the valley on a gradually sloping hillside running transversely to the length of the valley; inside dimensions 130 by 30 feet; paved. The *tohua* is formed by a level platform of earth and stone, in some places twelve feet high, built out from the hillside. No very large stone was used. On the front side of the platform a single *paepae* runs the whole length, consisting of two levels, each about 10 feet wide, one two feet above the other. In the lower course of the lower level *ke'etu* was used. There is no bordering wall. At each end of the dance area, at right angles to and continuous with the elevations bordering each side, is a house *paepae* running the whole width of the area, of two levels with the same elevations as the long *paepae* at the front, the upper level faced with *ke'etu*, as is usual with house *paepae*. There are no bas-reliefs. At the back of the *tohua* at the west end, the hill comes down in a very gentle slope and seems to have been merely faced with stone. It is likely that there is a *paepae* here covered by earth which was washed in. Ten feet out from the stone facing is a row of *ke'etu* set on edge on the floor of the *tohua*. Twenty-five feet from the west end of the *tohua*, beside and on the dance area, is a very old banyan, which once stood on a small *paepae*, now broken to pieces by the tree. Behind this tree is a *paepae*, four feet high and eight feet square, which appears to have caved in from the top. There can be little doubt that this was the *me'ae* associated with the *tohua*. Beyond this great banyan runs a double *paepae* backing on the hill, a replica of the long *paepae* on the other side. The interesting feature of this site is that the *me'ae* is situated near the middle of one long side of the *tohua*, corresponding with the relation of the *me'ae* to the *tohua* Aotoka at Hakahetau, but differing from it in that in Haakuti the *me'ae* falls on the uphill side, while in Hakahetau it is on level ground overlooking the stream.

Site 80. The *me'ae* Taapaku; situated on the top of a little mountain which juts into the sea on the western side of the valley; is said to have a *paepae*.

VALLEY OF HAKAHAU

The valley of Hakahau is very flat so that no terracing was necessary for the *tohua*. Penapena, chief of Hakahau, a trustworthy and wellposted informant, since he has always lived here and is of chiefly stock, insisted that there were no *me'ae* or *ahu* associated with these *tohua*.

Site 81. The *tohua* Teavatete; situated in the center of the town of Hakahau at right angles to the length of the valley, about a mile from the sea; *paepae* originally at the side have recently been pulled to pieces to build house *paepae*. A very large high *paepae* at the western end of the *tohua* is recent. The dance area, contains four large trees, three banyans and a *tou*. The most interesting feature of this *tohua* is a great upright stone block, *keho*, 5 feet high, on which the chief used to dance and display himself at feasts. This stone was evidently planted in the floor of the dance area at one side.

Site 82. The *tohua* Teautohuhu; situated just below Site 81 to seaward, was designated by a priest of this valley as his burial place. Thereafter the *tohua* was an *ahu* (or *me'ae*), superseding the former *ahu* that had been on the mountain.

Site 83. The *tohua* Puokeu; adjoins Site 81; runs up the valley; was a

quarter, perhaps a third, of a mile long and of considerable width. The *paepae* have been demolished for building material.

Site 84. The *tohua* Tekuahe; situated further up the valley than Site 83; also demolished.

Site 85. The *me'ae* Teheu; situated on the mountains at the western side of the valley. This site was not visited.

Site 86. Omaetehaa; the *taha tapu No Te Avaika*; a large sacred *paepae* by the sea, where fishermen lived.

Site 87. The *tokai* Teonapu; situated near the road at the top of the pass between Hakahau and Hakamaoui, only a small area of bare rock which outcrops on the top of the low ridge. The fishermen used to bring fish and throw them on the rock to propitiate the goddess.

There are other *tokai* in the valley with small *paepae*.—

Site 88. The fort Hautemumu; situated on a prominent rock elevation at the lower end of the valley on the west side; has small *paepae*.

Site 89. The fort Kuatau; situated on a prominent rock elevation at the lower end of the valley on the west side; has small *paepae*.

In both Sites 88 and 89 the somewhat flat top of the great rocks on which the forts are placed are covered with coconut trees. The inaccessibility of the forts makes it obvious that the trees were not recently planted for commercial purposes.

HAKAMOUI VALLEY

In riding through Hakamoui Valley one sees many house *paepae* of much greater size, both as to length and height, than elsewhere on Uapou. The house *paepae* Mataautea, belonging to a chief, is said to be 25 feet high.

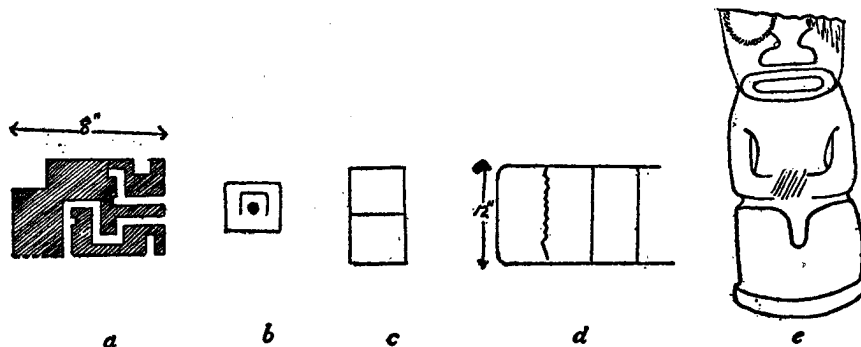


FIGURE 14.—Sketches of bas-relief and incised carvings at the *me'ae*, Paepae o Manui, Hakamoui, Uapou: *a*, relief design raised about two-thirds inch on a *ke'etu* facing slab, raised portion represented by shading; *b*, *c*, *d*, designs made by narrow incised lines on *ke'etu*; *e*, a fallen *ke'etu* tiki.

Hakamoui boasted that it was the one valley never defeated in war, its chiefs having never been overcome and superseded by conquering chiefs.

Site 90; from 6 to 15 feet high, varying according to the contour of the valley on the southern side, in the flat, with no flanking hillside; has one high *paepae*, 20 feet long, with two levels, the lower 4 feet high and 12 feet deep, the other 2 feet higher with a depth of 15 feet, the surface of both levels covered with waterworn boulders (*kiva*), *ke'etu* borders the front edge of both levels. There

were both bas-relief and incised carvings on the *ke'etu* of the upper levels. (See fig. 14.) The *ke'etu* tiki which now lies broken on the ground in front of the *paepae* originally stood on the lower level of the *paepae* on which the remains of a coffin are lying. Adjoining this lower level is a lower *paepae* of about the same length and breadth, badly broken up by a great banyan. No bone pit was seen. This site was the *Vahi no te papa haka'iki*, place of the chiefly class. Penapena was told by his father that it was very old. Banyan trees grow around the site.

Site 91. The *paepae* of Menaha; situated less than a hundred yards back of Site 90; from 6 to 15 feet high, varying according to the contour of the land, and standing alone; 120 feet long, 60 feet broad; no *tohua* connected. There are three levels on top of the *paepae*, the lowest in front, each rising from 3 to 4 feet higher than the level in front, each approximately 20 feet deep, and each faced with great blocks of *ke'etu*, many with carvings, some of the cut blocks being 9 feet long, 3 feet high, and 8 inches thick. The rear, or upper, level was designed

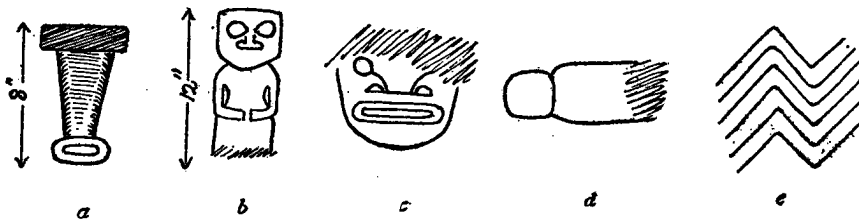


FIGURE 15.—Sketches of bas-relief on *ke'etu* at the *paepae* of Puheputoka, Moui Valley, Uapou. Some of the figures have a relief of as much as four inches; the meaning of design *a* is not understood; *d* is unusual—an unfinished or much worn tiki figure carved in a horizontal position; *e* represents ornamental adzing used on large *ke'etu*.

for the house of the chief, and is like the upper level of the usual house *paepae* but of great size; the bed space, 8 feet wide and running the whole length of the *paepae*, is filled with earth; and in front of this is the paved part of the interior. Along the front of this level are the remains of a number of carved wooden houseposts (fig. 16), and on it were the remains of several coffins. Nearly midway along the middle level is a medium sized banyan, the space in which it stands being enclosed by small *ke'etu* set on edge. Near the right hand end (facing front) of the front level is a round pit, caved in on one side, originally 8 to 10 feet in diameter. A human tibia projected from the rubbish at the bottom of this pit. This *paepae*, according to Penapena, was built before the birth of his father (Penapena is sixty-four) by the chief Puheputoka in honor of his mother, great festivities attending its building. It was the home of the chief, at his death becoming a *me'ae*.

Site 92. The *tohua* Taiei; situated further up the valley than Site 90 and very near Site 91; is 360 feet long by 48 feet wide; one end overlooks the stream. At either end of this *tohua* is a house *paepae*, that at the end next the stream being 10 feet wide, and from 10 to 12 feet high where it is built up above the stream. This *paepae* is faced on the front with *ke'etu*. The other end of the *tohua* is likewise closed by a large house *paepae*. A continuous stone platform with one level runs the entire length of the *tohua* on either side. At the far end (from the stream) of the left hand side, are several small *paepae*, a few feet high and twelve feet square, for the use of chiefs and old men who took part in the ceremonies. Toward the stream end, centrally placed on the *tohua*, is a square elevation of stone, not large enough to be called a *paepae*, where the chief sat to be seen and admired during festivals. (Penapena attended *koika* [feasts] here when a boy.) There is no *me'ae* connected with the *tohua*. An interesting feature of the site are the evi-

dences that the large earth bank on one side was cut away in making the *tohua*, and the earth used in filling on the other side.

Site 93. The *tohua* Tamaeka (p. 30); situated on the opposite side of the stream from Site 92, parallel to the stream; 600 feet long (one hundred *mao* [fathoms] measured with a line by Penapena), and 120 feet wide. This *tohua* is built along the gradually sloping hillside along the stream, the lower side elevated to make the dance area level. This elevation is supported on the stream side by a solid stone wall, some of the blocks being of great size. The wall is 20 feet high in its highest section. In the lower part, where the largest stones were used, the wall is inclined at a considerable angle to strengthen it in supporting the weight above. Long *paepae* run the entire length of the sides of the *tohua*. One end of the dance space is closed by a *paepae*, the other terminates in an abrupt little hill, on top of which was the chief's *paepae*, from which he watched the festivities. It is difficult to make out details of construction because of washed-in earth. Large *ke'etu* were used in the *paepae*. The *me'ae* of this site is to the left and in front of the chief's *paepae*; it is elevated above the *tohua* on the rocky summit of the little hill and

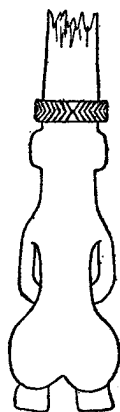


FIGURE 16.—Sketch of back of a tiki house post at the *paepae* of Puheputoka, Hakamouï Valley, Uapou.

looks down on the dance area; it has a roughly built, moderate size *paepae*, on the front portion of which is a banyan of moderate age. It was not used for depositing remains of the dead (according to Penapena). Behind the banyan is a stone platform, 8 feet long by 4 feet wide, where the priest sat during rites. The chief's *paepae*, beyond the *me'ae*, is 15 feet wide and 25 feet long, and 10 feet high at its highest point. Close by one corner is another smaller but similarly high *paepae*. A short distance from this, also overlooking the *tohua* is a very new looking *paepae* that was built for the son of the chief who lived on the small corner *paepae*. Penapena helped build this about 1880.

Site 94. An interesting site, which I did not learn of until I had returned to Hakahetau, natives say it is the oven in which a mythical hog of great size was roasted. It is a rectangular depression of not very great depth, 72 feet (12 *mao*) long, the borders finished with cut *ke'etu* blocks. It is hard to know what this may have been.

At the bay of Hohoi, which was too distant to be visited in our limited time, is a cave in which are two stone tiki. The cave can be visited only

in the early morning when the rising sun lights up the interior, and at low tide when a canoe can approach within easy swimming distance. According to Penapena the figures in the cave are headless, the necks attaching to the ceiling of the cave, the feet likewise being one with the base rock which is under shallow water. In other words, the figures are carved out of the solid rock. Penapena had not observed anything more about them except that the legs were separated. The rock is said to be hard and black. The figures are about eight feet high and three feet across the shoulders. Tradition ascribes them to Tupa, the mythical stone builder.

FATUHUKU

Fatuhuku lies fifteen and a half miles north of Hivaoa and in ordinary weather can be clearly seen from there. It is a barren rock 1180 feet high and approximately a mile in length, very difficult of ascent. The top is nearly flat and has a small stagnant pond near the center. I am indebted to Mr. Henry Lie, of Puamau, Hivaoa, for the description of the ancient structures upon its top.

The island was never regularly inhabited but is still occasionally visited by native fishermen and bird hunters. One species of bird, apparently a ground pigeon, is found only on this island and was formerly considered sacred by the natives. In some places the trail leads up the vertical face of the cliff and here the natives have cut hand and foot holds in the rock. The only structures seen by Mr. Lie were small heaps of stones at the places of greatest danger built in honor of the spirits who watched over the trail. Offerings were placed on these rocks by the hunters to placate the spirits of the trail.

HIVAOA

Hivaoa is the second largest island in the Marquesan group and its culture dominated the islands of the southern division in the same way that of Nukuhiva dominated those of the northern division. Although somewhat smaller than Nukuhiva it was damper and more fertile and probably supported a larger population. According to native traditions, certain of the large valleys on its southern coast were the first points of settlement in the group. The number and extent of the remains found in all parts of the island indicate that it was densely inhabited at the beginning of the historic period.

TAAOA VALLEY

Taaoa is the first important valley to the west of Atuona and formerly supported a large population who were at war with the Atuona natives.

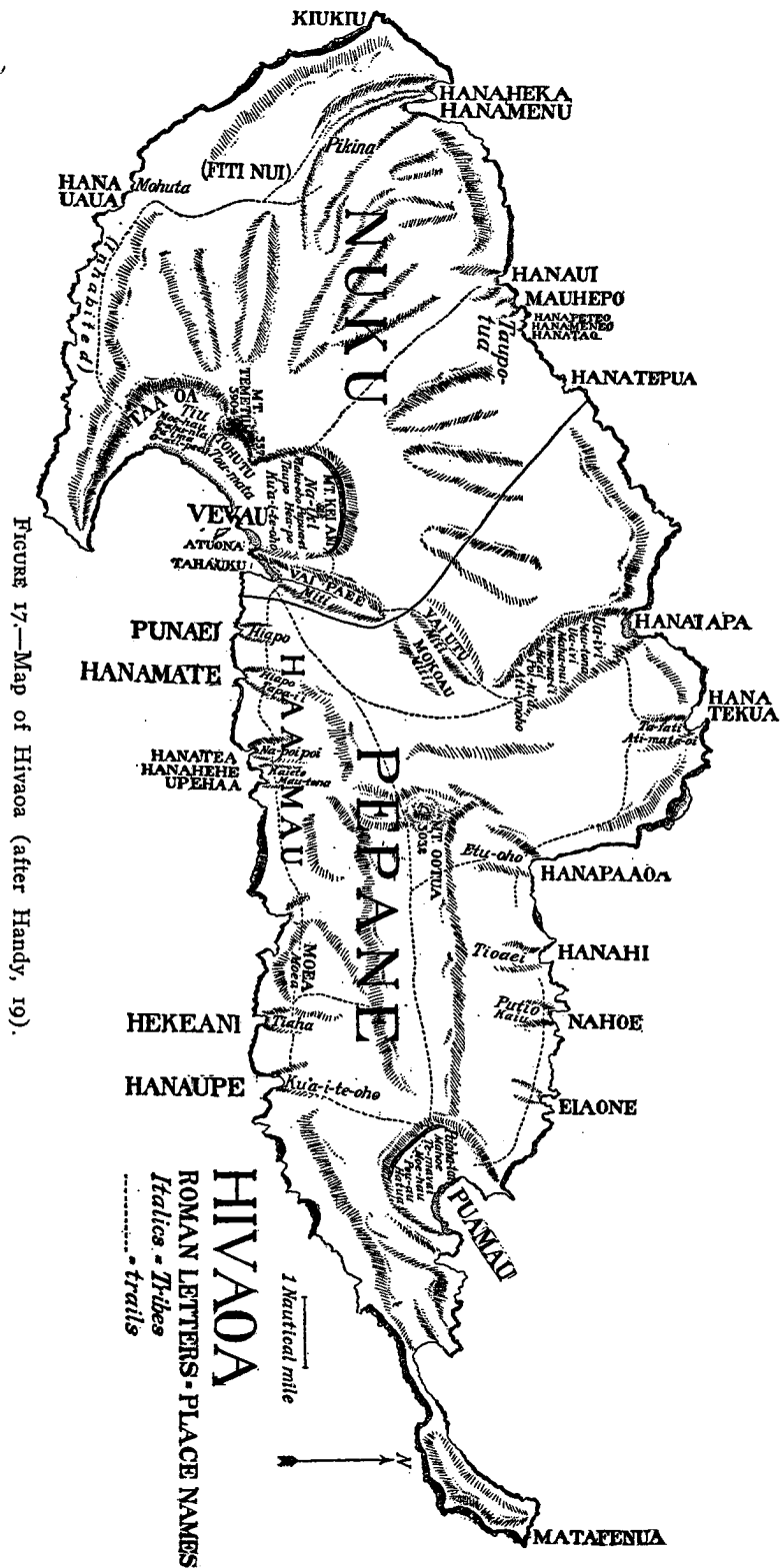


FIGURE 17.—Map of Hivaona (after Handy, 19).

Its inhabitants are much mixed, including individuals from several of the other Polynesian groups. The valley figures largely in Marquesan mythology and was evidently one of the most important on Hivaoa. It contains the remains of many ceremonial structures but is chiefly notable for its great *tohua*, which, with its associated structures, covers a greater area than any other structure in the Marquesas.

Site 95. *Tohua* and associated structures (fig. 18). The *tohua* is of the fully enclosed type, rare on Hivaoa, and is built of very large stone. The platforms running along the lower side are too narrow to have borne houses and probably served as seats for spectators. Larger platforms, which probably bore houses, are built at the ends and along the upper side. At the eastern end of the dance floor, and separated from it by a small dry watercourse are a few large platforms which probably constituted the *me'ae* regularly associated with Hivaoan *tohua*. To the rear of the *tohua* proper are many terraces and platforms and at the eastern end of these is a second *me'ae* which was used for human sacrifices. This *me'ae* is linked to the *tohua* by a continuous series of terraces which probably served as a staircase. According to native informants, the sacrifice was killed in the *tohua* and borne up to this *me'ae*, where it was laid on the altar stone. This stone is a large block of grey rock upon which the features of a gigantic face have been carved in low relief. The débris of the sacrifice are said to have been thrown into a large pit some distance behind the *me'ae*, but this pit could not be located and was probably outside the area mapped. On a small platform to the west and slightly below that bearing the altar stone are a separate head, probably an architectural decoration, and a small figure of hard stone which differs in several particulars from the usual Marquesan convention. (See Pl. VII, B.) To the east of the altar stone platform, were built the houses of the priests. An unusual feature of the whole structure are walls which divide it into units of several structures each, and which are said to have marked the limits to which different classes of the population were admitted during ceremonies.

ATUONA VALLEY

Site 96. The *tohua* of Pekiā; great central *tohua* of the valley of Atuona, used by the five Atuonan tribes for the ceremonies held in common; situated at the upper end of the present village on the main road leading to the head of the valley.

The structure has suffered from a shift in the course of the river, which carried away its western half, and from modern road makers, who have pierced the northern end in two places. The only parts of the ancient *tohua* remaining are the large platform on the eastern side of the dance space and parts of the platform at the northern end, with a number of structures behind and above the dance space. Native statements in regard to the original plan of the structure are contradictory, but it seems to have been of the open type, with few, if any, platforms on its western and southern sides.

At the time that the roads were made, the material from the partially destroyed northern platform was built into a long stone bench along the western side of the much curtailed dance space. The work was well done and at first glance appears to be part of the original structure.

The western platform, although not comparable with much of the Nukuhivan masonry, is quite impressive. A step, 18 inches high and of the same width, which probably served as a seat, runs along its base. Above this rises the wall of the platform, faced with large *ke'etu* and topped with a tier of river boulders. The

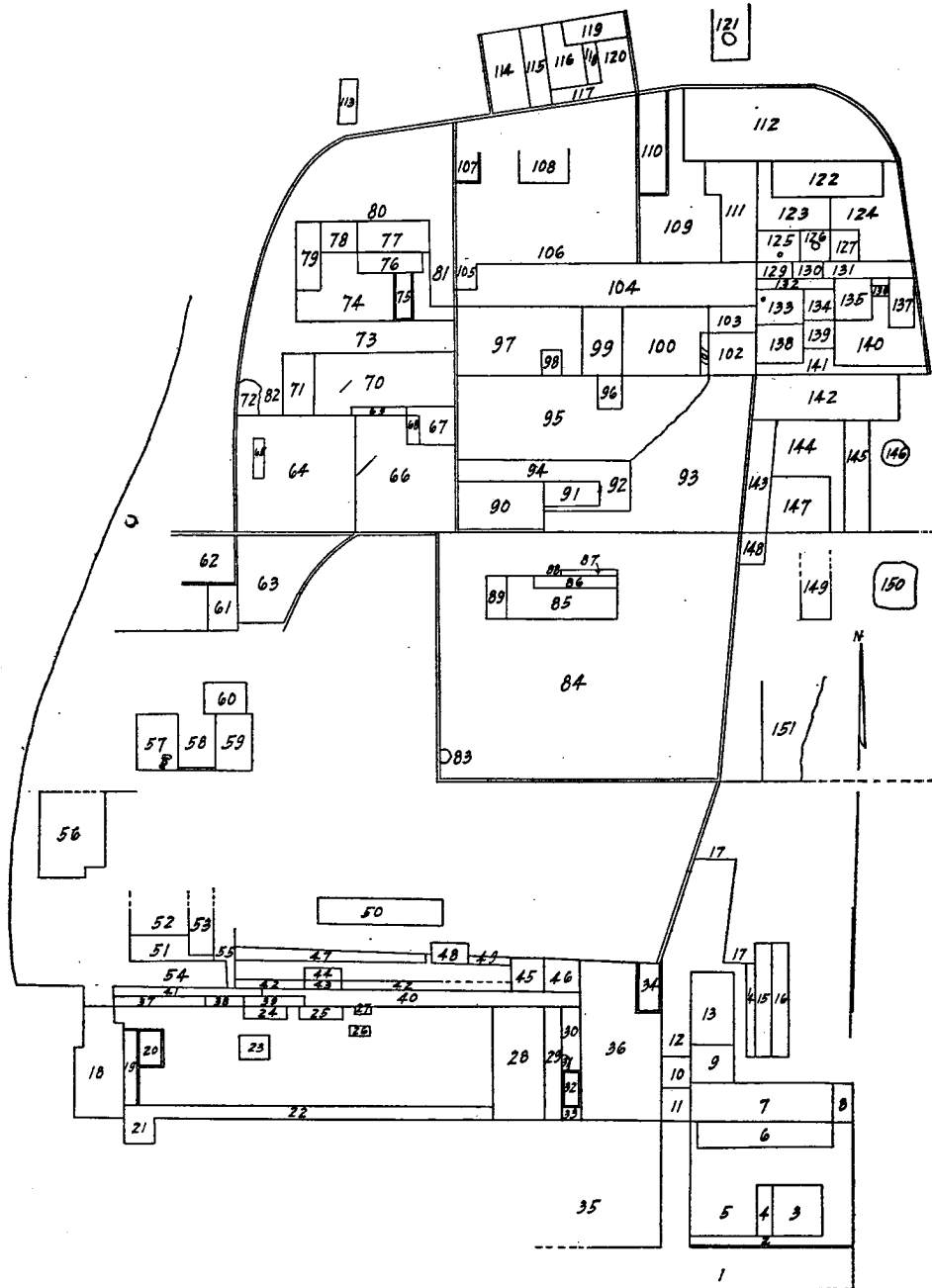


FIGURE 18.—Plan of community center, Taaoa Valley, Hivaoa: The entire structure is built on a broad sloping ridge which runs approximately north and south, double lines indicate walls: (1) low terrace, badly broken; (2) terrace two to three feet high topped by low wall of rough stone; (3, 4) stepped platform of

form of construction can be seen in Plate II, C. Here and there small projecting stones, serving as steps, have been inserted between the *ke'etu*. The top of the platform is paved with large river boulders, and has, at its northwestern corner, a pit two feet in diameter which runs down to the original ground level. Male relatives of persons killed by other tribes allowed their hair to grow until a victim had been captured from the offending tribe; when the victim was brought to be killed and eaten the hair was cut and the clippings thrown into the pit.

At the southern end of the main platform, but at a lower level, was formerly a large house *paepae* on which stood the dwelling of the chief. The *paepae* has been largely demolished and the site is occupied by a modern house.

At the northern end of the main platform is a second platform, whose top is continuous with that of the first. Its front is set back a short distance from the line of the main platform and it is made of boulders throughout, without the *ke'etu* facing. It extends for some distance beyond the northern end of the dance space, its upper end being now destroyed. Both this and the main platform were tapu to women. At the southern end of the second platform, near the front, is a depression

rather small stone six feet to eight feet high, top of No. 4 two feet below level of No. 3; side of No. 3 opposite No. 4, faced with cut stone; (5) unpaved terrace eighteen inches high on south side; (6) paved terrace two to three feet high on south side; (7) paved terrace two feet high on south running to ground level at north; (8) paved area intermediate in height between No. 5 and No. 7; (9) platform or terrace eighteen inches high on south side; (10) small platform two feet high; (11) terrace four to five feet high on south side; (12) unpaved area sloping upward toward original ground level; (13) platform of unusually massive stone three feet high on west and south sides; (14, 15, 16) house platform of massive construction, No. 14, space before house, No. 15, house floor, No. 16, bed space; (17) rough terraces or retaining walls (structures No. 1 to No. 17, inclusive, evidently form a unit and probably constitute the public *me'ae* connected with the *tohua* which lies to the west); (18) end platform of *tohua*, external height twelve feet, internal height four feet; (19, 20) low walled enclosures, probably recent; (21, 22) platforms on southern lower side of *tohua* dance floor, external height six to eight feet, internal height, two feet; (23) paved area on dance floor reserved for chanters; (24, 25) platforms eighteen inches high on south side; (26, 27) low enclosures bordered by single lines of stones; (28) end platform of *tohua*, internal height three feet; (29) unpaved area at level of *tohua* dance floor; (30) platform of large stones, two feet high; (31) irregular pit in No. 30; (32) unpaved enclosure; (33) small terrace somewhat below level of 29; (34) walled enclosure, external height of walls eight feet to ten feet on west and south, internal height two to three feet; (35) broad irregular terrace; (36) broken ground, southern end of area supported by retaining wall; (37, 38, 39, 40) terrace of massive construction overlooking dance floor; Nos. 37 and 39, three to four feet high on southern side, No. 38, eight feet high on southern side, No. 40, seven feet high on southern side; (41) terrace two to three feet above level of Nos. 37 and 39; (42) broad wall or narrow platform two feet high on southern side, eastern end broken and partly removed; (43, 44) small platform with top at two levels, No. 43, three feet high, No. 44, five feet high; (45) unusually well built platform of massive stone four feet high, bottom of platform surrounded by stone step one foot high, and eighteen inches wide; (46) paved area at level of No. 40; (47) long narrow platform one foot high; (48) platform four feet high; (49) narrow platform, a continuation of No. 47; (50) large house platform three feet high on southern side (probably site of men's house); (51) platform three feet high on southern side; (52) terrace or platform one foot high on southern side; (53) platform one foot high on southern and western sides; (54) massive terrace five feet high on southern side; (55) paved area; structures Nos. 18 to 33 and Nos. 37 to 55, inclusive, form a unit, the *tohua* or tribal assembly place; (56) large platform four feet high on southern side and running into slope on northern side; (57, 59) low platforms, No. 59 faced with cut stone; (58) unpaved area walled on southern side; (60) well

18 inches deep and about 6 feet in diameter faced with natural stone slabs which slope inward at an angle of about sixty degrees. At festivals this circle was occupied by a choir of old men who chanted. Persons from other valleys were sometimes present under protection, but if the chanters could entice them into the circle they were immediately killed and eaten, even the chief being powerless to save them. Circles of slab back rests for the choir of chanters are seen in many *tohua*, but practically always in the dance space, not, as here, on a platform.

The structures at the northern end of the dance space have been partially destroyed. Along the edge of the dance floor there is a row of stone seats with sloping backs (p. 26) made of waterworn slabs and boulders. (See Pl. III, B.) No other *tohua* visited contains seats of this kind, and, although the natives insist that they formed part of the original structure, it is hard to believe that they are not the work of the same French engineers who built the seats along the western side. At the eastern end of the row of seats, and slightly above and behind them, is a large crescent-shaped stone, apparently a natural formation. A similar stone, which has been carried away by the river, is said to have stood at the other end of the row of seats. These two stones were, according to a reliable informant, the

constructed *taha tupāpau* (platform for embalming house) six feet high on southern and four feet high on northern side; (61) platform two feet high on southern side, low terrace traceable for some distance to west; (62) enclosure, wall broken away on west; (63) terrace one foot high on southern side; (64) paved terrace four feet high on southern side; (65) bed space of small house; (66) unpaved area with terrace and wall on southern side; (67) platform four feet high on southern side; (68, 69) unpaved terraces two feet above level of No. 66; (70) large paved area; (71) paved platform one foot high on eastern side; (72) modern excavation; (73) terrace two feet high on southern side; (74) paved terrace two feet high on southern side; (75) enclosure, bottom one foot below level of No. 74; (76) pavement one foot higher than No. 74; (77) pavement one foot higher than No. 76; (78) unpaved depression; (79) house platform two to three feet high; (80) low terrace, traces of pavement along southern edge; (81) platform with top at level of No. 80, four to five feet high on southern and western sides; (82) paved terrace one foot high on eastern and two to three feet high on southern sides—structures Nos. 56 to 82, inclusive, were clearly ceremonial but were not tapu to women; (83) very old banyan tree; (84) walled enclosure, ground slopes upward steeply toward north; (85-89) very large platform, site of chief's house, platform ten feet high on southern side and at ground level on northern side; paved top of platform; (86) bed space of house; (87) narrow pavement; (88) site of box two feet square made of slabs of cut stone; (89) paved area two feet below level of No. 85, probably site of cook house or *fata'a* (store house); (90) unpaved area bounded by walls on two sides and by platforms or terraces on the other two; (91) paved platform two feet high on southern side; (92, 94) paved terrace two to three feet high on southern and eastern sides; (93) level area, southern side, supported by terrace four to five feet high; (95) paved area raised eighteen inches above level of No. 94, pavement broken on eastern end; (96) platform two feet high; (97) paved terrace two feet six inches high on southern side; (98) depressed area, paved, surface eighteen inches below level of No. 97; (99) platform two feet high on eastern and western sides; (100) paved terrace at level of No. 97; (101) small paved platform eighteen inches high; (102) paved area at slightly higher level than No. 100; (103) platform of massive stone three feet high on southern and western sides; (104) paved terrace, surface four feet above level of Nos. 97 and 100; (105) small platform, top at level of No. 106; (106) terrace three to four feet high, unpaved natural slope to north; (107) small enclosure (modern?); (108) platform three feet high on southern side and at level of ground on northern side; (109) unpaved area bounded on southern side by retaining wall three to four feet high; (110) platform, mostly demolished; (111) paved platform of large stone two feet high on western side; (112) paved terrace three feet high on west; (113) small platform, partly demolished; (114) unpaved

cradles on which the war canoe of the chief of Atuona rested when not in use. According to the same informant, it was a common practice to keep war canoes in *tohua*, on cradles of wood, the stone cradles at Pekia being unique. The storage of canoes in the *tohua* is of interest in connection with the Tahitian custom of carrying canoes up into the marae.

A short distance above and behind the canoe cradle is a low terrace bearing a few large bowlders which are said to have served as seats for the daughters of the chief, and behind the bowlders is a well built terrace of large bowlders. This part of the structure has been partially rebuilt, so that the original plan is uncertain.

Behind the bowlders and the terrace just described, which overlook the dance space, are a series of platforms and terraces running up the slope for at least fifty yards. From the size and position, this would appear to be the *me'ae* of the *tohua*, but informants say that the *me'ae* was on the western side and was destroyed by the river. This portion of the site contains nothing of special interest except an unusually large temple drum, over two feet in diameter and at least seven feet long, which lies at the base of a long narrow platform a short distance above the *tohua* proper. According to Hapuani, the best Atuonian informant, the name of the *me'ae* associated with Pekia was Tapu Manuhi'i.

Site 97. The *tohua* of Pahuone; small *tohua* and *me'ae* located well up the slope on the western side of the sub-valley of Puaci. The *tohua* proper consists of a square structure, terraced on the front and southern side and about 3 feet high, overlooking a natural level space of irregular outline and small extent. The *me'ae* section is at the northern end and is separated from the *tohua* by a very massive wall four feet high. It seems to have consisted of a small paved area bearing a single long narrow *paepae*. In the top of this *paepae* there is a longitudinal depression, like those in *taha tupapau*, but the structure appears rather large for this

enclosure walled with single large stones on western and northern sides; (115) platform three feet high at south; (116) partly demolished platform eighteen inches high on south; (117, 120) unpaved area; (118) rough pavement; (119) low platform, partly demolished; (121) platform three feet high on south bearing large banyan tree; (122) paved platform six feet high on west and two feet high on north; (123) paved terrace, top at slightly lower level than No. 111; (124) unpaved area; (125) paved platform, top one foot to eighteen inches below levels of Nos. 111 and 123 (here lay a small stone figure of unusual type. See P. VII, B.) (126) platform of massive stone six feet high on south (here stands a large carved altar stone); (127) paved platform three feet high on south and east; (129) paved platform three feet high on south, two feet high on east; (130) paved platform eighteen inches high on south; (131) pavement, slightly higher than No. 132; (132) pavement; (133) well built platform five feet high on south side, three feet high on east. (Near western end of platform lies a carved stone head); (134) unpaved area; (135) paved platform three feet high on south; (136) square, stone lined pit three feet deep; (137) house platform two to three feet high on south (said to be dwelling for priest); (138) paved terrace eighteen inches high on south; (139) traces of pavement sloping upward toward north; (140) pavement; (141) unpaved terrace eighteen inches to two feet high on south; (142) massive paved platform two feet, six inches high on south and east; (143) long low platform, probably for house; (144) pavement; (145) house platform; (146) large pit, apparently community *ma* pit; (147) paved terrace two feet high on south, top one foot below level of No. 144; (148) small platform two to three feet high on south and east, top two feet below level of No. 143; (149) large, roughly built house platform, partly demolished; (150) large rectangular pit, apparently community *ma* pit; (151) very roughly built house platform on natural ridge, dimensions uncertain. Structures Nos. 122 to 142, inclusive, constituted a *me'ae* at which human sacrifices were made. Structures Nos. 143, 144, 145, and 147 may have constituted a small *tohua* used in connection with the rites performed at this *me'ae*.

purpose. At the southern end of the single platform of the *tohua* is a very large *ma* pit.

Site 98. The *tohua* of Hekokua; large; located in the sub-valley of Puai on the eastern side of the stream a short distance above its mouth. It is of open type, the dance space being a rather narrow naturally level strip in the bed of the stream overlooked by an excellently constructed terrace 5 feet high. The western half of this terrace is faced with large *ke'etu* similar to those in the *tohua* of Pekia, the top being finished with a tier of river boulders. Behind the *ke'etu* faced section are three additional terraces of massive masonry running up the steep hillside. The highest terrace is said to have been the *me'ae*, but it presents no features of especial interest. At the lower end of these terraces lies a large much rotted temple drum six feet long.

The most interesting feature of the *tohua* is a large *paepae*, like a house *paepae*, seven feet high, erected in the middle of the upper half of the dance space. This is, according to reliable informants, the place of a special house where young men were tattooed.

Site 99. The *me'ae* of Puniaoha is especially interesting, for it was a place for the final disposition of the heads of chiefs. It was also used as a citadel in time of war. It is situated on the divide between the valleys of Puai and Unauatikua, a high, almost sheer sided ridge of earth and soft rock, approachable only at the upper and lower ends. On the crest is a strip of level ground 10 to 30 feet wide and perhaps a hundred yards long which has been fortified with a series of trenches.

At the lower end of the level space the earth has been cut away across the entire width of the ridge leaving a sheer face 10 to 12 feet high. About 100 yards beyond this, is a straight-sided, flat-bottomed trench 12 to 15 feet wide and 12 to 15 feet deep, cut through the ridge, and continuing down either slope for a short distance. The slope below this trench is so steep as to be impassable even to bare-footed natives. In either side of the ridge, about thirty feet beyond this trench, deep pits have been dug, narrowing the level portion to about ten feet.

Beyond the *me'ae* proper are two other deep trenches, separated by an interval of about sixty feet, identical in form with the one at the down valley end of the site, but the lateral pits are lacking.

The earth from the excavations was evidently thrown down the hillside for the tops of the trenches are level with the ridge. No stone work was observed in connection with the trenches, and no signs of palisades were seen, although the earth being bare old post holes could be easily detected. This is curious, as the Marquesans made extensive use of slings in warfare, and troops on the bare hill top would have lost heavily from missiles. The guide, who was familiar with the recent European war, insisted that the soldiers stayed in the trenches, but other informants agree that the trenches were simple barriers. Trenches were used in both Hivaoa and Nukuhiva.

The *me'ae* proper contains only a single structure, a small platform one foot high and five to six feet square, edged with slabs of cut red stone, said to be the burial place of the last chief of Unauatikua. There is not a house *paepae*, though informants insist the site was constantly occupied by the chief and a guard of soldiers.

Five repositories for skulls were reported by informants. On the western side of the ridge, a short distance beyond the lateral pit at the lower end of the site, two small repositories were seen, cut in the earth of the ridge about ten feet below the top. Because of the sheerness of the ridge, they are difficult of access. The repository visited consists of an oval chamber 30 inches long and 18 inches wide with an opening 18 by 12 inches. The flat stone which closed the opening has now fallen. This chamber contains two skulls, said to be those of chief Hoonui and his brother. The skulls are still visible, wrapped in brown tapa, now much rotted,

though fallen earth from the roof has filled the chamber to a depth of three or four inches. Some small objects are said to have been placed with the skulls as

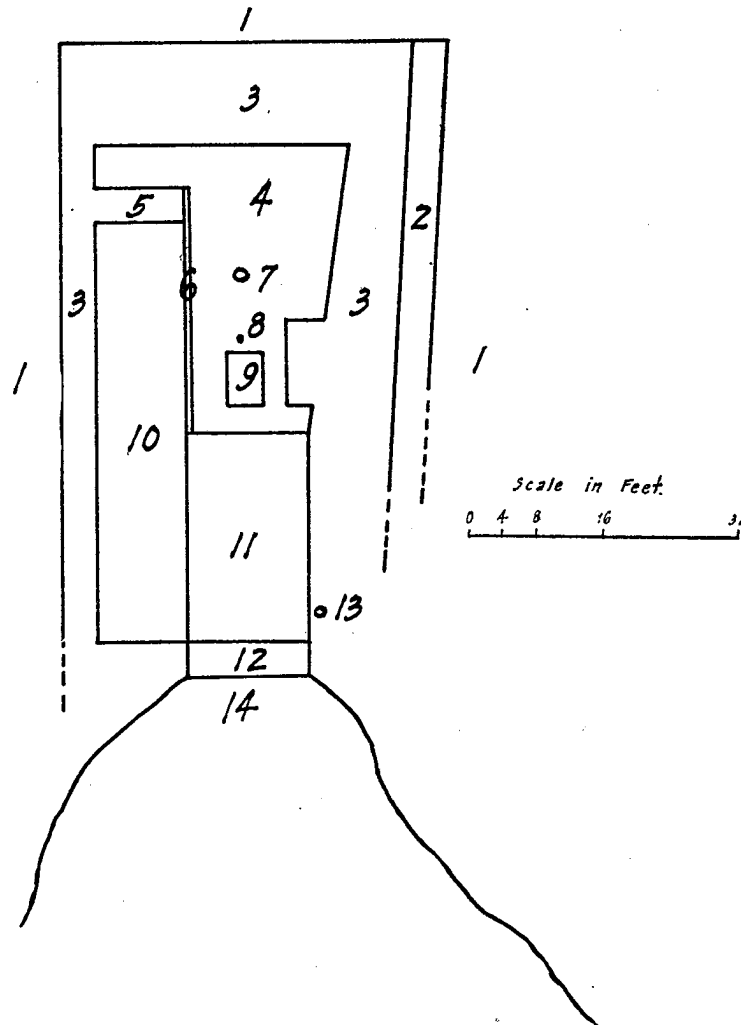


FIGURE 19.—Plan of *me'ae* of Tetoaautani, Atuona Valley, Hivaoa: (1) steeply sloping sides of ridge on which *me'ae* is built; (2) terrace with roughly built retaining wall two feet high; (3) main platform of *me'ae* four to six feet high in front and running to level of ground at rear; (4) paved platform eighteen inches high; (5) unpaved sloping way connecting surfaces of Nos. 3 and 4; (6) roughly built wall one to two feet high; (7) large stone image facing No. 3; (8) detached stone head, probably architectural ornament; (9) skull pit; (10) site of house, floor at same level as No. 4; (11) paved platform faced with cut stone, height at front two feet to two feet, six inches; (12) terrace one foot above No. 11 at front; (13) large detached stone head, probably architectural ornament; (14) steep upward slope, the end of which is cut off vertically behind No. 12 and faced with stone.

offerings, but this could not be verified for it had been necessary to promise not to disturb anything in order to be allowed by the natives to visit this site.

Site 100. The *me'ae* of Tetoautani; located on the eastern side of Atuona Valley about a mile above Site 96. The site is known to most of the natives as Ahuahu, a name also applied to a small cemetery just below it.

The part of the ridge on which the *me'ae* stands is almost level, but the crest narrows toward the rear and the builders were compelled to follow its contour. (See fig. 19.) The facing of the first terrace is of large stone and fairly well built, but the construction of the rest is inferior in both material and workmanship, and very little cut stone has been used.

The most interesting features of this site are a large stone figure and two detached heads (marked 7, 8, and 13 on fig. 19), rather remarkable in a single small site of rather inferior construction and seemingly without any special sanctity. Stone figures are not uncommon in Atuona, but with the exception of the large figure here and one in the *me'ae* of Pouau they are architectural decorations. The practice of inseting large heads as architectural decorations, observed in several other valleys, is also rare or lacking in Atuona.

The stone figure (fig. 19, No. 7) is badly mutilated, the heads and parts of the body being broken off. It stands facing the front of the *me'ae*, set in the ground up to the crotch, the roughly finished legs ending at mid-thigh. The exaggerated abdomen suggests that the figure may represent a pregnant woman. The arms are markedly asymmetrical, the left being much the larger and better carved, and in both the upper arm passes into the forearm in a long curve, without the usual sharp angle at the elbow. The hands cannot be distinguished, but may have been destroyed by weathering.

The carving of the head photographed with this figure (Pl. VIII, B), strongly suggests that of the heads inset in the walls of the large *me'ae* in Tahauku, (p. 149). The length considerably exceeds the breadth, and the finish is equally good on all sides. The carving is confined to the forward third, whereas, in the heads of most full figures it covers a half to two-thirds. The mouth is narrow and oval, with rounded lips. The eyes are comparatively small and almost circular, and are closely set. (See Pl. XI, B.) The nose is badly weathered, but seems to have been small and rather naturalistic. The ear is indicated by a simple curve, like a parenthesis mark, which is carved in low relief directly behind the end of either eye. Above the face the stone projects in a band, and the sides also project slightly beyond the carved portion, giving the impression of a hood.

The second head (No. 13, fig. 19, and Pl. XI, E) is interesting on account of its material, a very heavy and rather hard grey stone of fine grain, no other specimens of which were seen in Atuona. In convention it is intermediate between the head just described and the form commonest for full figures, but leans toward the full figures. It also was probably an architectural detail, but the most careful search failed to show any place in the walls of the *me'ae* from which these heads could have been removed. It seems possible therefore that they were set on top of the wall, as were the detached heads in the *me'ae* of Oipona in Puamau.

Site 101. The *me'ae* of Muutea; located on the western side of Atuona Valley near the crest of the first ridge running down into the valley from that side; a fairly extensive structure. The form of this *me'ae* is shown in figure 20. Additional structures, much dilapidated, are below and to the east of the main platform, and some distance above it on the ridge. The lower structures consist of a fragment of a wall, originally about four feet high, probably the boundary of the sacred precincts, and a terrace and a few platforms which have borne houses.

The structure above the *me'ae* proper is especially interesting because it appears to be older than the main structure and contains no cut stone, although a large outcrop of *ke'etu* suitable for cutting is located within a few yards of it. Much of

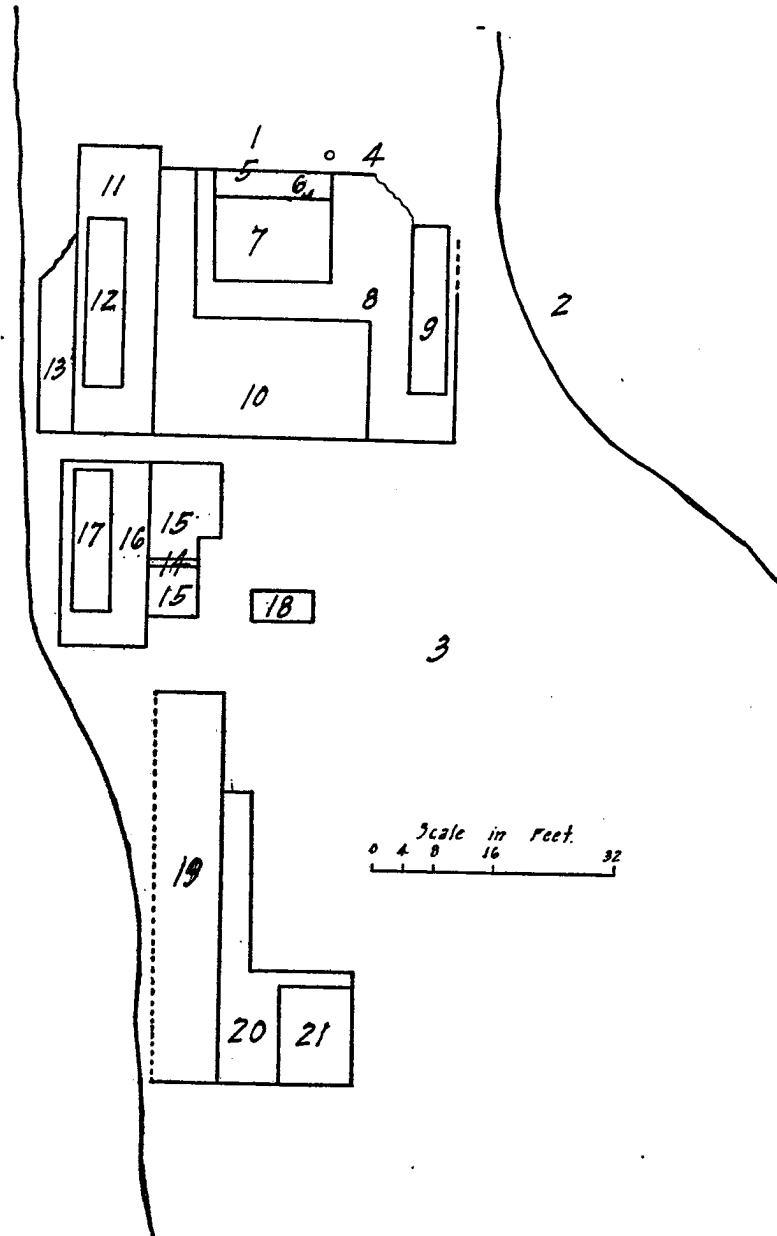


FIGURE 20.—Plan of *me'ae* of Muutea, Atuona Valley, Hivaoa: (1) steep upward slope; (2) declivities; (3) level ground; (4) large wooden image still in position (Pl. V, *A*); (5) terrace faced with cut stone; top at level of No. 7; (6) depression eighteen inches deep edged with cut stone; (7) platform four feet high in front, eighteen inches high at rear, faced with large slabs of cut stone, one of which bears a head in relief, is paved with sea boulders; (8) boulder pavement edged with cut stone; (9) bed of house; (10) sunken paved court eighteen inches below

the material has been removed from it, apparently to build the *me'ae* proper, making mapping difficult. The terraces are faced with curious basalt slabs, having flat faces resulting from natural fracture, which must have been brought from a distance. The platforms bear several large ironwood trees in the roots of which are fragments of human skulls.

The *me'ae* proper consists of a large platform, in front are several low terraces and platforms which were probably the residences of attendant priests. The main platform is of massive masonry, 8 to 10 feet high in front, paved with boulders from the sea, with a small retaining terrace on the western side. On the top of this platform, at either side of the front, are the floors and bed spaces of two houses of ordinary form. One of the end posts of these houses has survived, this shows that they were carved into full figures, with pierced legs, of unusually naturalistic treatment, and very long and narrow heads, thrown back so that the faces looked upward. The features have been obliterated by weathering, but indicate clearly a high naturalistic nose. It seems probable that the figures faced outward, the ridge pole resting on the top of the head. The present height of the surviving end post is 6 feet, 4 inches.

The central part of the front of the platform is sunk about 18 inches below the house floors. At about the middle of the house it is crossed by a low terrace, faced with small *ke'etu*, the top level with the house floors. On this low terrace, at the rear center, there is a small rectangular platform, four feet high in front, faced with large *ke'etu* on one of which is a small face carved in high relief. Immediately behind this elevation is a narrow oblong depression (fig. 20, No. 6) walled at either end, containing several fragments of human bone. The *me'ae* has no identifiable sacrifice pit, and this may have served the purpose. Immediately behind this depression is a low terrace, passing into the surface of the slope on the eastern side, on which stood four very large wooden tiki. (See Pls. IV, C; V, A, B.) These tiki are well preserved and can not be more than fifty or sixty years old. Two of the figures are male and one female; the sex of the fourth can not be determined. Three of the figures have fallen, but the fourth and largest is still in position. (See Pl. V, A.) The fallen figures (Pl. V, B) are hewn from solid *temanu* logs, but the standing one is hollow and contains the bones of at least two individuals. It seems probable that the hollow is the result of weathering, and that the bones in it were gathered up from the depression and hidden therein.

The proportions and general dimensions of the figures are similar. The measurements of the fallen male figure are as follows:

	Feet	Inches
Length of figure with base	8	6
Length of figure alone	6	6
Top of head to shoulder	2	4-1/2
Shoulder to point of elbow	1	6
Elbow to thigh		2-1/2
Thigh to upper edge of knee notch.....		8
Length of knee notch.....		8
Lower edge of knee notch to base.....	1	2

There are no distinct feet, the legs ending in a band, which encircles the figure.

level of No. 8; (11) paved house floor excavated in slope at rear, top at level of No. 8; (12) bed of house; (structures Nos. 5 to 12, inclusive, are built on a terrace of very large rough stones six feet to ten feet high in front); (13) low, roughly built terrace running into slope at rear; (14) low wall; (15) paved platform one foot high; (16) house platform eight inches higher than No. 15 in front; (17) bed of house; (18) rough stone platform eight inches high; (19) platform two feet to three feet high, faced with cut stone, rear broken; (20) pavement of rough stone one foot high; (21) platform two feet high on outer side.

The head measurements are:

	Feet	Inches
Band above face		3-1/4
Band to top of ear		6-7/8
Length of ear		9-5/8
Length of upper lobe of ear.....		5
Width of central bar.....		7/8
Length of lower lobe of ear.....		2-1/2
Total length of face, from head band to chin.....	2	6
Width of face to backs of ears.....	3	8
Width of ear		3-3/4
Ear to eye		6
Length of eye		10
Width of eye		9
Width of nose at nostrils		10-5/8
Nose to lip		1-3/4
Eye to lips		5
Width of lip		7/8
Width of tongue		2-3/8
Lower lip to chin		1-7/8
Width of mouth	2	8

The peculiar convention of the arm can be seen in Plate V, A. The dimensions are:

	Feet	Inches
Length of upper arm, back.....	1	6
Length of upper arm, front		11-3/4
Width of upper arm		5-3/4
Forearm, elbow to finger tips	1	4
Length of fingers		4
Width of hand		5-1/2

The hands rest on the stomach, the finger tips 7 inches apart. The penis is shown, but not exaggerated, and is 4-1/2 inches below the hands.

	Feet	Inches
Maximum width of the thigh.....		8
Maximum width of lower leg at calf.....	1	5
Width at ankle	1	1
Maximum width of the entire figure.....	2	2
Maximum thickness of figure.....	1	8-1/4

The surface of this figure is much better preserved than that of the others, and it seems probable that it is either the newest of the group or that the surface has been redressed. The limbs are smoothly finished, but the body is covered with small evenly-distributed adz marks. On the largest figure the buttocks are ornamented with spiral adzing.

Site 102. The *me'ae* of O'ovau; situated upon the point of a long ridge between the upvalley of Papuacai and the next small valley to the east. It can be reached by the first road built in the valley by the French. This *me'ae* consists of three small platforms irregularly placed on a long and steep rockslide. All these platforms are said to have borne images but no houses. To the right of the highest platform is a pile of large stones, apparently a natural formation, on the top of which stands a much rotted wooden figure about 4 feet high. In the lower part of the pile is a cleft, 6 feet wide at the bottom and about 4 feet high, walled up to within 18 inches of its top, which appears to be full of skulls and bones. Many skulls and bones are to be found among the rocks of the rockslides and the site was evidently used as a kind of cemetery to which bones were taken after the disintegration of the body.

Site 103. The *me'ae* of Pouau; situated on the crest of a high ridge overlooking the sub-valley of Papuaei; covered with a heavy growth of *fau* and *pandanus*; was the most important in the valley of Atuona. A high outcrop of rock some distance to the rear of the main structure was believed to be the assembling place for the gods of the whole island. The *me'ae* consists of a great number of pavements and platforms strung along the flat top of the ridge. At its upper end, and somewhat to the west of the other structures, is a large and finely built platform which bears several smaller platforms. One of these platforms has on it a large stone figure (Pl. VII, *D*) and three smaller figures are inset between the slabs which face its forward edge.

Site 103a. The *me'ae* of A'aha; located on the western side of the ridge upon which Site 103 is located; consists of a number of roughly built platforms irregularly arranged on a natural level. At the northern end of the series is a rather small isolated platform with a top made in two levels. The higher level, at the rear, is faced with cut stone and has inset on its front three unusually well-carved slabs. (See Pl. X, *D*.)

TAHAUKU VALLEY

Tahauku Valley, whose bay serves as a harbor for Atuona, appears to have been inhabited only in the upper part and at the mouth. The upper tribe were the Miti, who also inhabited Vaipai Valley, and the sites in the head of the valley of Tahauku are, for this reason, described with those of Vaipai. The lower tribe was an offshoot of one of the Atuonan tribes and was in close, although not always friendly, contact with Atuona.

Site 104. Pictograph rock; a large waterworn boulder lying in the bed of the stream; located in a small valley called Teueto, which opens into Tahauku on the western side about a mile and a half above its mouth; is associated with the *tohua* described as Site 105. The rock is covered on the upstream end and on the top with deeply incised designs, most of which differ sharply from any other observed in the Marquesas Islands. (See Pl. XV, *D* and p. 98.)

Site 105. *Tohua*; ceremonial structure; one of the largest and certainly the most impressive on the island of Hiva'oa, situated across the stream from Site 104. Its occurrence in a small valley which could not have supported a very large population is surprising. The masonry of the entire structure is very massive and some of the blocks, which are of hard and heavy stone, must weigh two to three tons. They were obtained from a nearby rock slide which lies at a slightly higher level so that their transportation presented little difficulty. Most of the masonry is laid in courses, but there are a few instances of true cyclopean construction in which several large irregular blocks are accurately fitted.

Directly across the dry stream-bed from Site 104 are three paved terraces, the upper faced with cut red stone. These extend for 100 feet down stream and give place to two somewhat higher terraces, which continue for over 300 feet following the curve of the hillside. Above the down stream end of these terraces stands a massive structure, probably a combined *tohua* and *me'ae*. (See fig. 21.)

The first terrace of this structure is a very large solid platform of rough stone, 180 feet long, 40 feet wide, and 10 feet high at the lower side, probably the dance space. Behind this is a second terrace, 4 feet high and 23 feet wide, faced with unusually massive stones, which apparently bore several *paepae*. A number of carved stone heads were inset between the large blocks of this terrace at irregular heights and intervals. Three of these heads were found, and there are niches which appear to have held two others, although the heads could not be found. A very large stone head, not corresponding to any of the niches, lies on the pavement at the first terrace. A fragment of a still larger head was discovered on the second terrace

near its downstream end, but the other pieces of it could not be found, and there was no clue to its original position. Near this head lies a slab bearing a curious figure carved in low relief. The eyes of the figure are formed by concentric circles, and the mouth has a distinct beak, like those of some Maori figures, the only instance of the use of this convention observed in the Marquesas. (See Pl. XV, C.)

The heads are carved in the ordinary Marquesan convention for this kind of

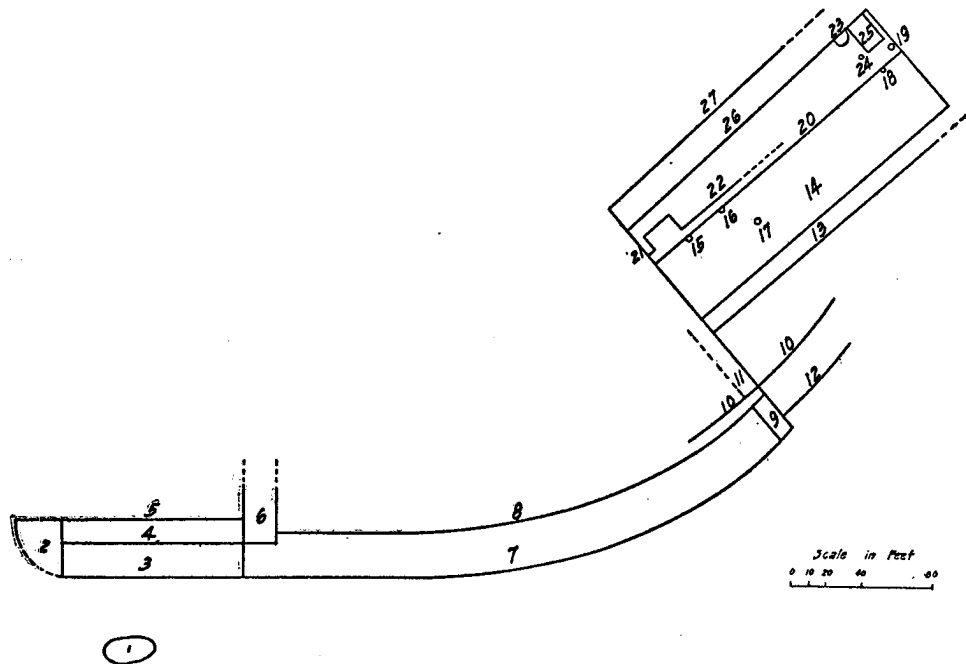


FIGURE 21.—Plan of ceremonial structure, Tahauku Valley, Hivaoa: (1) pictograph rock (Pl. XV, D); (2) paved area, partly undermined and carried away by floods; (3) terrace of rough stone three feet high on side facing No. 1; (4) paved terrace one foot high faced with cut stone; (5) terrace of rough stone one foot to eighteen inches high; (6) platform two to three feet high in front and running into slope at rear; (7) paved terrace two to four feet high in front; (8) paved terrace eighteen inches to two feet high in front; (9) low narrow platform or wall of rough stone, much broken; (10) low terrace of large stones, probably a retaining wall; (11) piles of loose stone, possibly a continuation of No. 9; (12) irregular terrace of large stone, apparently a retaining wall; (13) irregular terrace of very large stones, apparently a retaining wall; (14) first terrace of main structure, massive, probably the dance space, 180 feet long, 40 feet wide, paved throughout with large slabs of rough stone, front height 10 feet to 12 feet; (15) large stone head in wall; (16) niche for stone head, head now fallen; (17) very large head; (18) small stone head in wall; (19) pit eighteen inches to two feet in diameter (excavated); (20) second terrace of main structure, faced with massive stones. Front height four feet six inches, width, 23 feet (bore several *paepae*); (21) small platform eighteen inches high at front, evidently bore some low elevations but exact outlines of these are no longer traceable; (22) platform eighteen inches high at front; (23) large rock bearing slight resemblance to face; (24) fragment of very large stone head; (25) platform two feet high (excavated); (26) paved terrace three feet high in front; (27) retaining wall of rough stone.

architectural detail, which differs slightly from that of large stone figures. The eyes are spectacled, and the ear is of usual form. The mouths are narrower than those of the large tiki and have a chevron-like decoration at the corner. In one of the figures the pupils of the eyes are indicated.

Excavations were made in this site, which yielded few objects but some interesting data on construction. The main terraces were built throughout of large rough stones, arranged so as to fill as much space as possible. No earth seems to have been used. A small elevation of the sort usual in the *me'ae*, standing on the downstream end of the second terrace, was thoroughly excavated. It was immediately in front of a large natural rock which bore a crude resemblance to a face and head. This elevation appeared to be a single *paepae*, and probably supported a small house. The interior was constructed of large rough stones, like those of the main terraces, and these extended throughout below the pavement. Above them a thin layer of soil and small stones had been placed to level the surface. This soil had evidently been scraped from the neighborhood of dwellings, for it contains fragments of broken artifacts, shell, and bones. The sides of the elevation were faced with slabs of cut stone.

A pit near the lower down stream corner of the second terrace (fig. 21, No. 19) was also excavated. This pit, 20 inches in diameter, ran down almost to the original ground level and had evidently been left at the time of construction. At a depth of two feet it was closed, either by accident or intention, with a round flat river boulder which fitted the orifice accurately. A curious object, something like a gigantic tiki-headed *popoi* pounder, was found in the bottom, but had apparently fallen from the side of the pit.

Site 106. Series of terraces with an apparent fort; situated near the top of the rockslide associated with Site 105, and running the entire width of the slide. There appear to have been nine terraces. The third structure from the top is especially interesting. It is an enclosure, 40 feet long and 15 feet wide, surrounded at the front and ends by well-built walls 10 to 12 feet thick, which have an internal height of 4 to 6 feet. The rear wall is formed by the natural rock. It is possible that this structure is simply a terrace on which work was stopped before the fill was complete, but the walls are so heavy and so well finished on the inner side that it seems more probable that it was a fort. The position is a very strong one. Above and behind the fort-like structure there are two additional terraces, well made, and paved throughout. These structures do not seem to be part of Site 105.

VAIPAEE VALLEY

Vaipae Valley, not shown in the charts of Hivaoa, opens into the western side of Tahauku Valley near the head. Together with the upper part of Tahauku and the adjacent plateau it was inhabited by a now extinct tribe, the Miti. According to traditions, the Miti were not cannibals and were much less warlike than the surrounding tribes, by whom they were finally destroyed. Vaipae, although difficult of access and cut off from the sea, is a large valley and capable of supporting a considerable population, so that it seems as though here if anywhere one might hope to find traces of an earlier submerged population, had such a thing existed in the Marquesas.

It is evident that Vaipae was at one time densely inhabited, for house platforms are scattered everywhere over the slopes. The valley widens considerably near its head and at that point there are several well con-

structed *paepae* marking the site of a small colony from Atuona who lived here a few years ago. A curious feature of these *paepae* is the division of the upper surface into two unequal parts, the longer of which is in all respects like the usual *paepae* top while the other is depressed and unpaved. The earth in the unpaved portion shows a considerable admixture of ash and charcoal, and it seems probable that this marked the site of a small cook house on the same *paepae* as the dwelling house.

The older terraces in the valley are not as well built as those just described, being for the most part roughly constructed terraces only high enough to give a flat floor space. On level ground *paepae* were dispensed with, simple pavements of rough stone taking their place. Bed depressions of the usual form were noted in all the structures.

One single, small, but well-built *taha tupapau* is associated with the recent group of *paepae*. It was in a practically perfect state of preservation, and was thoroughly investigated. The external dimensions are 8 feet by 12 feet, with a height of $5\frac{1}{2}$ feet. The top is divided longitudinally into two unequal parts, a pavement two feet in width, and a depression for the body, which is bordered with slabs set on edge, rising 18 inches above the pavement. The depression is three feet deep at the lowest point, and is divided into two equal parts by a single tier of stone laid transversely across its bottom. At the rear of the depression, and on the dividing line, is a pit one foot in diameter which runs down to ground level. Both the depression and the pit contained numerous fragments of human bone, the skeleton being that of a small adult. In addition, the depression contained the skulls of two dogs and a young pig, with a few of their bones, probably the remains of offerings to the dead. A native pearl shell ground almost circular and drilled with two holes was found in the pit, this being probably part of a headdress. The structure was demolished, contained no other objects. The construction was the same as that of ordinary house *paepae* except that no earth was used in the fill.

It is a curious fact that this was the only *taha tupapau* seen either here or in Tahauku, although they are quite common in other valleys on the southern side of Hivaoa. It is evident that the Miti did not use them.

From the following descriptions it can be seen that the remains in Vaipae differ from those in other Hivaoan valleys only in the smaller size of the house *paepae*, the more sparing use of cut stone, and the possible absence of *taha tupapau*, while the form of the structures is essentially the same. It seems probable therefore that the culture of the Miti differed little if at all from that of the other tribes on the island.

Site 107. A large structure, apparently a *tohua*; located on the north side of the valley of Vaipae about four hundred yards from its mouth. The *tohua* proper consists of three small and low terraces facing an unpaved flat area in the bottom of the valley. Upstream from this there are a number of terraced platforms scattered irregularly over the hill slope, which is here covered with large rocks. Some of these platforms evidently bore houses, the bed spaces of which are still distinguishable, but others are entirely paved and probably served some ceremonial purpose. The whole arrangement of these platforms is haphazard and the construction is poor in spite of the abundant material available. Below the platforms just described, and at the same level as the lowest terrace of the *tohua*, there is a rectangular walled enclosure, approximately 20 feet long and 8 feet wide. The walls are heavy and well built, containing a number of slabs on edge, while the back of the enclosure is formed by the natural rocks of the slope. From its form this enclosure might have been used to protect a store of coconuts from pigs, but the construction appears too careful for a utilitarian structure of this kind. No cut stone was observed in this *tohua*, although the valley contains a good deal of the soft red rock usually employed.

Site 108. A *tohua*; situated in the extreme upper end of Tahauku, in the bottom of the valley a little below the mouth of Vaipae; small and poorly constructed. The only feature of interest is a circle of stone back-rests, where the singers probably sat during ceremonies. Such circles of back rests are common in *tohua*, but this is of unusually small size. No cut stone occurs in the structure.

Site 109. A *me'ae*; situated about one hundred yards above Site 108, in the sloping mouth of a small side valley; a series of rather low and poorly constructed platforms placed one behind the other on the slope; contains no cut stone.

Site 110. A combined *tohua* and *me'ae*; situated on the eastern side of the valley, further up the stream than Site 109. The frontage is rather narrow, but the structure is of great depth extending up the slope of a small side valley for fully 150 yards. There are not less than eight terraces, the highest of which, near the center of the series, is 4 feet, 6 inches high on the lower side. The structure is very dilapidated and shows no features of special interest.

Site 111. A combined *tohua* and *me'ae*; situated on the eastern side of the valley where it widens slightly at its end, at the foot of the sheer cliff; large and well-constructed. The *tohua* proper has four terraces—the first, 6 feet high at the front and 80 feet long, and about 60 feet wide; it was only partially, if at all, paved; the second is of more massive construction, 10 feet high, front of the same length as the first, 40 feet wide, paved throughout. The two uppermost terraces are low and narrow, the third terrace being only 4 feet wide. This probably served as seats for spectators. Near the middle of the uppermost terrace, which is faced with a single tier of slabs set on edge, there is a single block of cut stone.

A small stream runs along the northern edge of the *tohua*, and all the platforms have well-built walls running down into its bed. The masonry at the platform corners on this side is especially massive and well made. Across the stream from the *tohua*, and at the level of, or slightly below, the second platform, are three irregularly placed platforms, probably the *me'ae*, strung along the hill side. They are larger than house *paepae* and are paved throughout, all at approximately the same level, and the northernmost has a single line of slabs of cut red stone running across its surface at right angles to the front. Behind this platform with the slabs are two small narrow platforms, the whole reproducing in miniature the upper part of the *tohua* proper.

Some distance below these platforms, but on the same side of the stream, are traces of a long low terrace, now much broken.

PUNAEI VALLEY

Site 112. A *me'ae* or possibly a sacred place of the fishermen; situated on the western side of the valley a short distance back from the sea. It consists of a few *paepae* and a small platform containing a pit. The pit in the small platform was excavated by Handy, the only objects found being some fragments of shell scrapers and a few animal bones.

Site 113. *Tohua* and *me'ae*; situated in the head of the easternmost fork of the valley, the site of the old village of Utukua (fig. 22). The *tohua* seems to have been of the enclosed type, although the wall enclosing the lower edge of the dance space is low and narrow and there is only one low *paepae* on this side. The *me'ae* is at the upvalley end of the *tohua* and is separated from it by a small water course. The first terrace of the *me'ae* is four feet high in front, and is paved with a mixture of slabs and boulders, some of the boulders having been brought from the sea. In the second terrace is a lavish use of sculptured figures in the decoration. Five feet in front of this terrace is a large stone tiki consisting of a natural slab of rather hard rock which has been carved on the front and slightly on the sides, but left undressed on the back. The carving is in very low relief, the lines rounded to an unusual degree. Decorative carvings have been added below and at the corners of the mouth and below the ears—an unusual feature in large figures of this kind. (See Pl. VIII, A.) The arms and legs are hardly more than indicated, and the treatment of the body, shoulders and neck is unusual. The dimensions are as follows: height 3 ft., 2 in.; maximum width, 1 ft. 5 in.; thickness, 8 in.; length of face, 1 ft., 1 in.; width of face (on curve to back edge of ears), 1 ft., 9 in. Sex, male.

The wall of the second terrace, which is faced with slabs of cut stone, contains three full figure tiki carved from very soft red rock, and a pictograph of unusual form carved in high relief on one of the slabs. The pictograph is an incised oval with rectangular wings projecting on either side. (See Pl. IX, B.) The dimensions of the pictograph are: width, 1 ft., 2 in.; depth, at center, 9 in.; height of relief, 3/4 in.

Tiki No. 4 (fig. 22) appears to have been a full figure, but the lower part is broken. The carving follows the usual Marquesan technique. The dimensions are: height, to just below arm, 1 ft., 4 in.; width, 1 ft.; thickness, 9 in. Tiki No. 5 is a full figure with projecting stomach, hands on either side of the body, and half flexed legs. The sex is not indicated. The dimensions are: height, 1 ft., 6 in.; maximum width, 1 ft.; facial width, 8 in.; thickness, 1 ft., 2 in. Tiki No. 6 has at the back a tenon 5 inches long which is inserted in the wall. The dimensions are: height, 1 ft., 7 in.; width, 9 in.; face width, 7-1/2 in.; thickness, 7-1/2 in.

Site 114. *Me'ae*; situated in the easternmost fork of the valley, which divides Site 113. The lowest of the structures consists of a low terrace fronting a natural level space in which grows an enormous banyan tree. A fragment of human bone was found among the roots of the tree and it may have been used for the disposal of bodies, though there are no other indications of such use remaining. A short distance above it, on the slope, are two or three rough, much broken *paepae* associated with another large banyan tree.

A short distance upstream from this site, at the same level, and facing the same level space, is a double terrace. This may have formed with the first site described a large simple *tohua*. The terraces are about two feet high, the lower one built entirely of waterworn boulders, the upper faced with cut slabs topped by a row of waterworn boulders of irregular size. In the facing, near the down stream end, is a slab of well cut coral rock 30 inches long, 18 inches wide, and 5 inches thick. On the front, near either end, are two rectangular projections, 6 inches wide, 10 inches high, and projecting 2 inches. These correspond to the

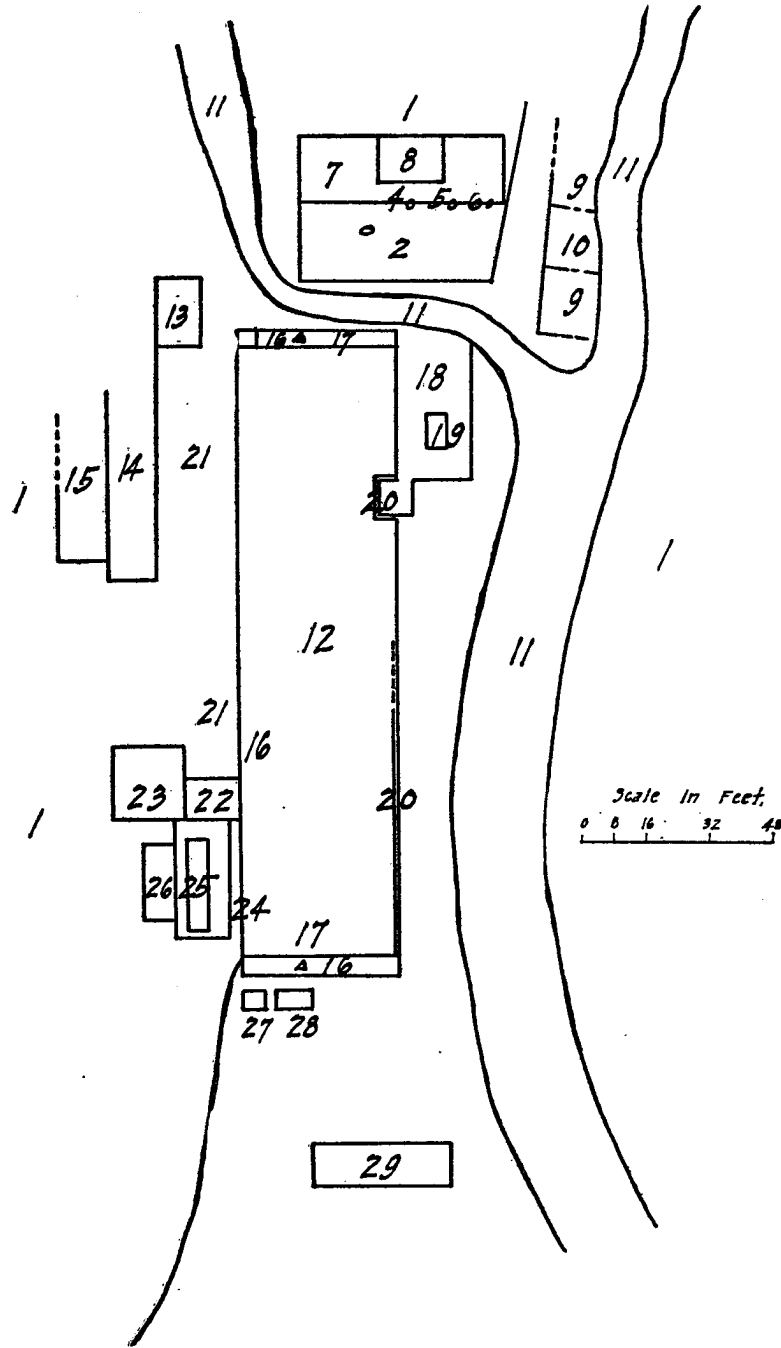


FIGURE 22.—Plan of combined *tohua* and *me'ae*, Punaei Valley, Hivaoa: (1) steep upward slopes; (2) massive stone platform, four feet high in front, paved with slabs and sea boulders; (3) crude stone image (Pl. VIII, A); (4, 5, 6) small

pairs of small figures sometimes seen carved on slabs, but are smoothly finished and undecorated. The site is more than three miles from the sea, so that the use of coral rock is rather remarkable.

A short distance upstream from the double terrace with the coral slab, and at a much higher level, is another large banyan tree behind which is a small double terrace. The second step of this terrace is faced with small slabs of cut stone, and the corner slab at the downstream end bears a pair of uncarved projections like those described on the slab of coral rock. These projections are joined by a broad band in very low relief which seems to have been left when the rest of the surface was cut away. The slab is rounded at the corners and smoothly finished on the back and if turned over so as to rest on the projections would closely resemble a tray with legs. Unfortunately it was so firmly built in and so heavy that it was impossible to remove it from the wall for proper inspection.

HANAMATE VALLEY

Site 115. The *me'ae* of Otomimi; the first site in the valley; on the eastern side of the river. It is directly across from and associated with a small *tohua* whose name could not be learned. The *tohua* is a natural level space, with little stone work, and the *me'ae* is a series of low terraces of rough stone irregularly placed in the hillside.

Site 116. The *me'ae* of Faiho; situated on the western side of the valley, a short distance above Site 115; detached. The *me'ae* consists of a large walled enclosure running along the hillside parallel to the stream. The interior is a single large earth filled terrace, three feet high on the lower side. Along the edge of this terrace a rather poorly constructed wall of rough stone has been built, giving an external height of five to six feet. The only structures in the *me'ae* are two large and well made *taha tupapau* near the middle of the enclosure. Several blocks of rough coral rock, brought from the sea, are incorporated in one of these structures. This *me'ae* is said to have been the property of the head chief of the valley.

Site 117. The *me'ae* and *tohua* of Motuoa; situated about 300 yards above the *me'ae* of Faiho; large and well built. The *me'ae*, which is at the downstream end of the structure, consists of a paved platform about 90 feet long and 25 feet wide, the pavement being of bowlders and rough slabs. In the middle of this platform, at the rear, is a *paepae* 20 feet by 15 feet, and 3 feet high, made of rough stone with a top course of even sized bowlders along the front. On the top of the *paepae*, 2-1/2 feet back from the edge, is a low elevation 18 inches high, edged

stone figures inset in front wall of terrace; (7) terrace, eighteen inches high in front, faced with cut stone (Pl. IX, B); (8) small terrace or platform eighteen inches above No. 7; (9) platform one foot high, rear carried away by stream; (10) platform two feet high, rear carried away by stream, (Nos. 2 to 10, inclusive, constituted the public *me'ae*); (11) watercourses; (12) dance floor of *tohua*; (13) platform eighteen inches high; (14) terrace, front wall of large rough stone three feet high, traces of a small platform faced with cut stone appear near center; (15) terrace or platform two feet high in front paved with sea bowlders; facing wall of cut stone topped with a tier of bowlders; (16) stone pedestals for dancers; (17) wall four feet wide and two feet high; (18) pavement, carried away at upper end; (19) bed space of small house; (20) low walls of rough stone; (21) paved terrace two feet high at edge of dance floor; (22) platform two to three feet high in front; (23) platform, front eighteen inches higher than No. 22; (24) terrace, eighteen inches high at edge of dance floor; (25) house platform one foot high at forward edge; (26) platform three feet high in front; (27) small platform two feet high at lower end; (28) small platform three feet high at lower end; (29) large house platform, facing *tohua*.

with cut slabs. At the upstream end of the main platform, there is a low *paepae*, 12 feet wide, running the full width of the platform. This probably bore a house, but is fully paved.

Three large banyan trees growing on the main platform of the *me'ae* indicate by their position that they have been artificially planted, probably at the time the *me'ae* was built. One tree is in almost the exact middle of the *me'ae*, behind the central *paepae* just described, while the other two are at either end, in line with the central *paepae*.

At the upstream end of the main platform, and separated from it by a passage 15 feet wide, is a large rectangular walled enclosure which is tapu as a part of the *me'ae*. A small platform appears at the western end of the passage separating it from the large platform, but the enclosure itself contains no structures.

The *tohua* immediately adjoins the *me'ae* on the upstream side and is a natural level space having structures on both sides of the upper end. That on the western side is a rather narrow but unusually high double terrace of massive masonry. The upper terrace is said to have borne the dwelling of the chief, and the house floor is fully 20 feet above the floor of the *tohua*. On the eastern side, between the *tohua* and the stream, is a low platform 20 feet long, with two steps, each 18 inches high. On the top of this platform are two depressions edged with uncut slabs and paved. The larger of these, at the downstream end, is 5 feet by 9 feet, and 18 inches deep. The smaller, at the upstream end, is about 4 feet square and one foot deep. According to a reliable informant the bodies of the enemies slain in battle were brought here and laid in the larger depression where they were for a time exhibited with songs and dances. They were then cut up and small pieces given to all the spectators. A fire had meanwhile been kindled in the smaller depression, and the recipients wrapped the pieces of flesh in grass and threw them into the flames, withdrawing them as soon as the grass had burned away. The half cooked flesh was then eaten and kava was drunk.

DISTRICT OF MANAVAI

Manavai consists of the broad upper end of Hanamate Valley, and the neighboring parts of the plateau. Although an inland district, its inhabitants, the Napoipoi, were an off-shoot of the coast people and were included in the Hamau division.

Site 118. A *tohua* and a *me'ae*, and numerous *paepae*; situated in the bottom of the valley of Hanamate. The *tohua* is of fair size but simple in construction, the dance space being a natural level bordered on the eastern side by a single terrace and on the western by the *me'ae*.

The *me'ae* is a low double terraced platform paved with smooth bowlders which are said to have been brought from the sea. The second terrace is faced with slabs of cut stone, and near its southern end are two large heads inset in the wall. These heads, although following in a general way the ordinary Marquesan convention, present certain points of interest. Only the eyes and nose are shown, the pavement of the top of the first terrace passing under them at what would be the level of the mouth. The upper face is remarkably long for its width, and the whole effect is curiously bird-like. (See Pl. XI, A.) Adjoining the *me'ae* on the upvalley side is a depression, roughly 15 feet by 30 feet, walled on the side toward the *tohua*, and excavated to a depth of three feet in the solid rock on the outer side. This is said to have been the residence of a hermit priest, who remained within the enclosure during his entire lifetime. Rock excavations are rare in the Marquesas and must have been difficult to make with the crude tools of pre-

European times, so that this site was probably of more than ordinary sacredness. In front of the *me'ae*, and on the line of its juncture with the walled depression just mentioned, are two pits, 7 by 2-1/2 feet, surrounded by low stone walls. These were excavated to a depth of 4 feet, the level of the undisturbed soil, but the only object found was an ironwood tapa beater of ordinary form. The fill consisted of leaf mold and a few large stones fallen from the walls, and it seems probable that the pits are recent and were intended for graves.

Site 119. A *me'ae*, probably Makamea; situated on the divide between Manavai and Puna'i. According to three European informants, Makamea is a place of the greatest sanctity even at the present time, and formerly it was the place to which all the tribes of Hivaoa brought offerings. This site was accidentally discovered and the natives questioned were unable or unwilling to give the name.

The *me'ae* is built at the end of a ridge which drops away almost vertically on all sides, and consists of five paved terraces placed one behind the other, the highest being at the end of the ridge. Each terrace extends the full width of the ridge, 25 feet to 40 feet. Below the western end of the first terrace is a very remarkable pit which is rectangular, 10 feet by 12 feet, and at least 10 feet deep. Its form thus agrees with the ordinary tribal *ma* pits, but it has been excavated in the solid rock, a Herculean task which would have scarcely been undertaken except for religious reasons. The first and second terraces contain nothing of interest, but the third bears a large slab of stone set on end in the pavement a short distance in front of the wall of the fourth terrace. This slab, which is approximately 4 feet, 6 inches in height, 2 feet wide, and one foot thick, is a natural formation, somewhat waterworn, and has evidently been brought from a considerable distance. It is much too large and heavy to be a back rest, and its position corresponds to that of the carved stone figures occasionally seen in *me'ae*. At either end of the terrace is a transverse line of small slabs of cut red stone, their tops flush with the pavement, suggesting that the slab was originally covered by a house. The fourth terrace is small and narrow, little more than a step, and the fifth a rather large paved area on which were formerly some large ironwood trees. Cut stone is used sparingly in all parts of the structure, but all the slabs observed are small, and there are no carvings.

HANAHEHE VALLEY

Site 120. A *tohua*; situated in the bed of the valley a short distance back of the beach; in bad condition. This structure seems to have been simply a level space terraced at the low side. A small separate platform situated on the down valley side near the eastern end bears an enormous banyan tree and was probably the *me'ae*.

Site 121. A *tohua* and *me'ae*; located in the bed of the valley almost half a mile above Site 120. It seems to have been a natural level space with a terrace on the upper side and various *paepae* on the lower, most of the latter having been swept away by a change in the course of the stream. The one remaining house *paepae*, 60 feet long, 12 feet wide, and 3 feet high, is said to have been the site of the men's house.

The *me'ae* is situated on the western side of the *tohua* and is continuous with it. Three well constructed terraces rise from the dance space, and on the uppermost of these is an enormous banyan tree, and two *taha tupapau*, which are placed a short distance back from the edge of the terrace and are symmetrically arranged with regard to the tree. Their fronts are on approximately the same line, and are connected by a single line of cut red stone slabs which form an additional terrace less than one foot high. The *taha tupapau* are well constructed and both have, at about the center of the upper surface, slab lined pits (p. 55) as large as

ordinary graves, the one in the upstream structure being 8 feet by 3 feet, the other slightly smaller. The down stream structure has in front a small stone walled enclosure, and its top still bears the much rotted timbers of a small house. Neither of the sites contained carvings.

PUAMAU VALLEY

Puamau Valley is one of the two largest in Hivaoa, the other being Atuona, and in archeological interest it probably exceeds any other in the group. The stone work is the best in Hivaoa, rivaling that of Nukuhiva in the size of the material employed and the profuse use of cut stone, and the valley contains both the largest and the best carved stone images in the Marquesas. Fifteen stone images and four large stone heads were visited and photographed by me and many others are known to have been either carried away or hidden by the natives.

The valley was formerly inhabited by the Naiki, a section of whom occupied Atuona in historic times, and the largest *me'ae*, that of Oipona, was made by them. The mana of this structure was so great that after the expulsion of the Naiki even the *ta'ua* of the Pahatais (the modern inhabitants) never dared to enter it, believing that such trespass would be punished by failure of the breadfruit crop.

No *taha tupa'apu* were observed in the valley, and according to reliable informants these structures were never used here, the small separate house in which the body was mummified being built on the ground, without a *paepae*. According to the same informants, small special houses on *paepae* were built when a chieftainess was to give birth, although no examples of these were seen. Both these features are of considerable interest in connection with the practices of the northern division of the group.

Site 122. The *me'ae* of Oipona (fig. 23); situated at the base of the rock pinnacle of Toea, which overlooks the valley in all directions. This *me'ae* is not connected with any *tohua*, and as Toea was used as a place for the final disposal of the bones of the historic inhabitants, it seems probable that the Naiki also used it in this way, and that Oipona is really a mortuary *me'ae*, although no human remains were found. The trail leading to the plateau runs along the western side of the pinnacle, and from the trail the largest of the stone figures of the *me'ae* is plainly visible to a mounted man. The chief interest in the *me'ae* lies in the stone figures, the largest in the Marquesas Islands, which formerly ornamented the second terrace.

On the westernmost corner of the second terrace is a large stone head (fig. 23, No. 10) set upon but not in the wall. The dimensions are: total height in front, 3 ft., 1 in.; height of face (chin to ridge around head), 1 ft., 11 in.; thickness, 2 ft., 11 in.; width of mouth, 2 ft. The top of the head is rounded and is encircled by a ridge $\frac{3}{4}$ of an inch high and 2 inches wide, now broken in places. Below the mouth is a band carved with three small highly conventionalized human figures in high relief, unevenly spaced and averaging 7 inches high and $7\frac{1}{2}$ inches wide. The nose is rather small in proportion to the other features and the nostrils

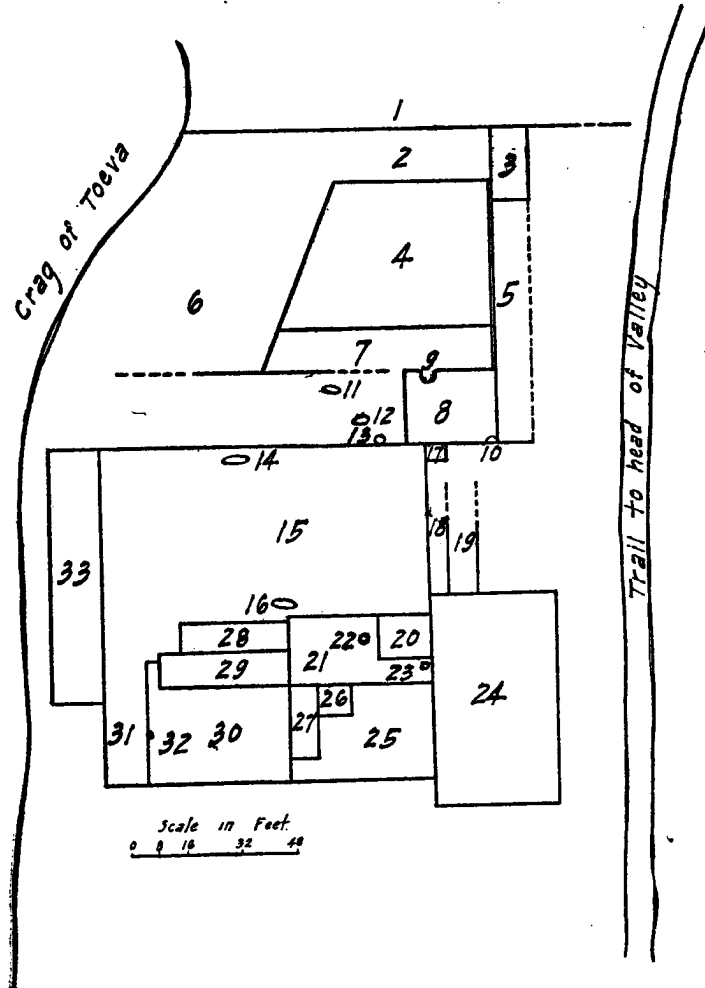


FIGURE 23.—Plan of *me'ae* of Oipona, Puamau Valley, Hivaoa: (1) terrace of very massive masonry 10 to 12 feet high (upper limit of site); (2, 6) unpaved area 3 to 4 feet above No. 4, massive retaining walls; (3) small platform faced with single large stones; (4) artificially leveled area, unpaved; (5) terrace at slightly lower level than No. 4, outer side carried away; (7) retaining wall eighteen inches high made of single uncut stones; (8) paved platform one foot high; (9) altar stone decorated with pictographs; (10) large stone head, *Maki'i tana pepe* (Pl. XI, D); (11) seated figure (fallen); (12) *takai'i* (largest figure in group) (Pl. VII, A); (13) headless figure (Nos. 2 to 8, inclusive, and 9 to 13 rest upon a massive terrace four feet to five feet high on lower side); (14) headless figure, *Manuiotaa* (fallen from terrace); (15) unpaved level space; (16) image, pregnant woman (?) (Pl. VI, B); (17) low paved platform; (18, 19) broken terraces leading down outside level No. 18, three feet below level of No. 15, No. 19, two feet below level of No. 18, main entrance to *me'ae* at this point, terraces probably served as steps; (20) paved platform three feet high; (21) unpaved level, upper edge two feet below level of No. 15, lower edge one foot above level of No. 25; (22) large stone head (originally on No. 20); (23) large stone head (originally on No. 20); (24) unpaved

are clearly indicated. The name of this head is said to have been Makiitauapepe (Pl. XI, D).

Twenty-seven feet east of the head just described is a large headless figure (fig. 23, No. 13) standing on the extreme edge of the terrace. The height, ground to shoulder, is five feet. The sex appears to be female but one informant insists that it is male. The genitals are broken, but the breasts, carved in very low relief, are represented by two ovals, one foot wide and ten inches high, overlapping slightly in the center of the chest. The informant insists that these ovals represent the powerful muscles of the breast, but the convention is identical with that employed on the large tiki in Taipivai, Nukuhiva, which are certainly female. The same informant states that the name of this figure was Mahiauto (the chief whose treachery led to the expulsion of the Naiki from Puamau) and that he was the cook of Takaii, the largest figure of the group. Another informant said the figure was that of a pregnant woman, and was named Petetamuimui.

Four feet east of the headless figure, and six feet back from the edge of the terrace, stands Takaii, the largest image in the Marquesas. (See Pl. VII, A, and fig. 23, No. 12.) Its dimensions are as follows:

	Feet	Inches
Total height	8	6
Shoulder height	6	3
Height of face (chin to band encircling head)	2	2
Width of head	3	4
Width of face (ear to ear on curve)	4	9
Width of mouth (on curve)	2	6
Height of mouth	-	7
Chin	-	3
Mouth to nose	-	1-3/4
Width of nose	-	11
Height of nostril	-	3-1/2
Length of eye	1	1
Width of eye	-	10
Shoulder to elbow	2	4
Width of arm (side)	1	-
Thickness of arm	-	7
Length of hands	-	9
Width of hands	-	10
Width of shoulders	3	11
Width of hips	4	-
Width of chest	2	1
Distance elbow to thigh	-	5
Total length of leg	3	5
Lower leg (to notch in back)	2	9
Width of leg on side	2	6
Width of leg in front	1	8

The chin is 8 inches below the line of the shoulders. The space between the legs is pierced, and the arms are carved in very high relief. The thighs and lower legs are decorated with ornamental adzing, a herringbone pattern on the thighs and simple horizontal bands below.

platform four feet to five feet high on side toward B, top, one foot below level of No. 25; (25) unpaved level space with retaining wall one foot high on lower side; (26) small platform of large stones 2½ feet high; (27) low house platform; (28) house platform four feet high on upper side, faced with cut stone; (29) paved terrace faced on lower side with cut stone, level two feet to three feet above No. 30; (30) unpaved level space, retaining wall four feet to five feet high on lower side; (31) house platform faced with cut stone, upper end destroyed; (32) small stone head inset in wall of No. 31; (33) low, much broken platform.

A short distance behind and east of Takaii is a curious seated figure (fig. 23, No. 11), now fallen. Its dimensions are:

	Feet	Inches
Total length	5	7
Length of crown to shoulder	2	1
Length of face	1	10
Width of face, on curve	3	6
Diameter of head	2	5
Shoulder to elbow	1	11
Elbow to thigh	—	11
Upper edge of thigh to ground	1	3

The lower legs are represented as short stumps, directed forward, and end in rectangular feet. The space between the upper arm and body is pierced.

A very large stone head, weighing over three tons, formerly stood on the edge of the terrace in front of this figure. It was carried away some years ago by a German trading company, and no exact data on its form could be gotten.

Near the eastern end of the second terrace was formerly another large figure, which has fallen and now lies at the back of the first terrace (fig. 23, No. 14). The tiki previously described are made of rather coarse red tuff, but this figure is carved from a moderately hard, fine grained, grey stone, and the workmanship and finish are unusually good. The spaces between the arms and body and between the legs are pierced, and the back shows an attempt at naturalistic modeling, the spine being indicated by a shallow groove. The legs are joined at the feet, and below them is a roughly-cut rectangular projection two feet long which was evidently inserted in the pavement. The dimensions of this figure are: length, feet to shoulder, 5 feet, 6 inches; width of shoulders and hips, 2 feet, 10 inches. It lies upon its face so that the sex could not be ascertained, but all informants agree that it is male and named Manuiota'a (Pl. VI, A). The most interesting feature of this tiki is that the body and head were separate. There is no neck on the figure and the upper part of the body ends in a smoothly finished bowl-like depression about ten inches in diameter, in which the head rested. The head is now missing.

On the first terrace, about 40 feet north of Manuiota'a, is a large figure of very curious form (fig. 23, No. 16). It is made of grey stone, but traces of red ochreous paint are visible on some of the sheltered parts. Informants knew nothing of this figure, and the design differs so greatly from that of any other carvings seen that it can scarcely be identified as human. Pl. VI, B shows the form of this remarkable tiki. The head is thrown back so that the entire ventral surface is in a single plane which curves upward from all directions to a peculiar rectangular projection in the middle of the body. The arms are raised and laid along the sides of the head, the hands directed forward. The legs are short and bear upon the ventral surface a single longitudinal band 5 inches wide and 1/2 inch high. The curves are beautifully even, and it is evident that the artist worked on a preconceived plan and was a master of design and execution. The dimensions of the figure are as follows:

	Feet	Inches
Length	5	10
Width	3	7
Finger tips to elbow	1	10
Elbow to thigh	—	10
Thigh to base	1	11
Length of projection on ventral surface	2	3
Width of projection on ventral surface	1	7
Width of leg (ventral surface)	1	7

The face follows the ordinary Marquesan convention in so far as this is compatible with the position of the head. There is no distinct chin, only lips and nose being shown, and the whole face is short in proportion to its width. The dimensions are:

	Feet Inches	
Width of face, ear to ear	3	4
Height of face, to band around head	2	2
Width of mouth	2	7-1/2
Total height of mouth	-	9-1/2
Width of lips	-	3
Width of tongue	-	3-1/2
Total height of nose	-	9
Height of nostrils	-	3-1/2
Width of nostrils	-	10
Length of eye	1	2
Width of eye	1	1
Width of rind surrounding eye	-	2
Brow to back of head	-	7-1/2

The first terrace contains three detached heads, two of which, 20 inches high, appear to have stood on the corners of a small *paepae* near its western edge (fig. 23, Nos. 22 and 23). They are roughly made and have been damaged by disintegration, but the rather narrow mouth, naturalistic nose, and downward slant of the outer corner of the eye noticed in Makiitauapepe are clearly recognizable. One head is interesting because, whether by accident or intention, its outline seen from above is identical with the ordinary Marquesan skull form. The third head is inset in the wall of a small *paepae* (No. 32), and is identical with the heads described from the valley of Manavai (p. 157), the whole lower part of the face being lacking.

Several figures in this site have been mutilated, and according to native informants the parts broken off and carried away were those in which the mana of the figures was supposed to reside. Thus the heads of the figure on the edge of the terrace and the largest fallen figure are missing, while the curious female figure just described and Takaii have each lost the left arm.

Site 123. The small *me'ae* of Pouani; belonged to the Pahatai; is associated with the crag of Toea. It is built on the ridge approaching the crag from the south. (See fig. 24.) I was fortunate in obtaining as guide an old man who had assisted in carrying to this *me'ae* the last human sacrifice offered there. The sacrifice, a man named Pifai, from Hanatea, was captured by the Moeas and the body sent to Puamau by their queen, Tauahapaia, to be used in ceremonies to break a drought there. A reciprocal arrangement was made between the Moeas and the Pahatais by which the enemies killed by one group were offered at the *me'ae* of the other group. The body was carried to a small platform of large stones at the northern end of the *me'ae* (fig. 24, No. 2) and left there. My informant was uncertain as to its final disposal.

Although a place for human sacrifice, the *me'ae* of Pouani was also one of the two regular mortuary *me'ae* of the valley. The bones of the dead were brought here and given to the priests for final disposal, it being the popular belief that they were hidden in a cave near the summit of the crag. The crag was scaled, however, and it is certain that no such cave exists.

According to old informants who had seen the *me'ae* in use, priests lived there only three or four days at a time when they went to exercise their functions, and occupied small temporary houses which they built, not on the *paepae*, but on the ground nearby.

Site 124. A rectangular stone enclosure; situated a few hundred yards south of the *me'ae* of Pouani, on another ridge. This structure is about 15 feet wide and 20 feet long. According to informants, it was tapu to women and was a

place for men to gather and sing *pu'e* (sacred chants). No further data could be gotten, and no sites of the kind were seen elsewhere.

Site 125. The *me'ae* of Teohovevau; situated on the ridge next south of the one bearing Site 124; mortuary *me'ae* of the Pahaatai. Informants said that it was not a place of human sacrifice, but that the bones of the dead were carried to this place or to Pouani according to the orders of the chiefs.

The *me'ae* precincts cover a considerable area on a sharply sloping ridge, and were enclosed by a low wall, in some places a line of single large stones. At the lower end of the *me'ae* proper is a large *ma* pit named Ihipa'a (the ripe chestnut), the contents of which were said to have been reserved for the use of the *tau'a*. Above the *ma* pit are two low and much broken terraces separated by an interval of about fifty feet. At about the same distance behind the last terrace there is a very large *paepae* 51 feet long and 8 feet to 10 feet high in front. The construction of the wall is massive, and the lower tiers of stone are set out so that the

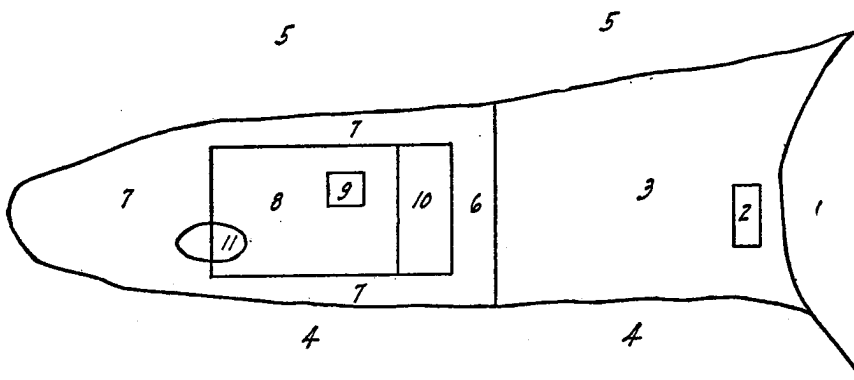


FIGURE 24.—Plan of *me'ae* of Pouani Valley, Puamau, Hivaooa: (1) crag of Toea, a rock at least 100 feet high and nearly vertical; (2) platform of very large stones eighteen inches high, human sacrifices were placed on this platform; (3) top of steep sided earth ridge; (4) very steep declivity; (5) steep downward slope, angle 50 to 60 degrees; (6) vertical face of earth marking upper end of artificial level on which *me'ae* stands, face eight feet high at center; (7) artificial level; (8) platform four feet to five feet high, of rough stone and paved with waterworn bowlders; (9) sacrifice pit; (10) house floor raised eighteen inches above level of No. 8, inner edge faced with cut stone; (11) large banyan tree.

wall slopes inward toward the top. The northern end is slightly higher than the rest, and on this lies a small, well carved stone figure, 2 feet, 6 inches high and 14 inches wide, apparently an architectural detail. It is remarkable for a high dome-shaped head, but is otherwise of usual form.

Site 126. Place where circumcision was practiced, about fifty yards below the enclosing wall of the *me'ae*. It consists of two low walls of very large stone about twenty feet long and bordering a natural level space 15 feet wide.

Site 127. The quarry of Teohopuapu; situated in the small valley on the southwestern side of Teohovevau, in the bed of a stream. All the great tiki in the *me'ae* of Oipona were obtained from this quarry. The tapu governing this district is so strict that, according to informants, the site has never been used since the expulsion of the Naiki, even they having obtained slabs for ordinary purposes from another quarry on the western side of the valley.

Both the red and grey varieties of tuff are found in this quarry. The grey deposit forms a stratum about 10 feet thick at a higher level than the quarry

proper, and it shows few signs of work. The main quarrying operations were carried on at a point where the erosion had laid bare a stratum of even-textured red tuff forty to fifty feet in thickness. The few faults seen ran downward and westward at an angle of sixty to seventy degrees, facilitating the detachment of blocks. A fault of this sort was utilized in quarrying a large tiki whose bed can still be seen, and an unfinished head still in position. Most blocks had been hewn out bodily (p. 8).

Any tools which may have been left by the ancient quarrymen have been buried by material brought down by the stream or carried away by the long continued water action, but it can be inferred from the marks in the rock that narrow bitted adzes were used.

The natives still believe that the *ke'etu*, a name applied to the red tuff and to the slabs cut from it, grows slowly but constantly—a quality peculiar to it. It seems certain that there were originally various ritual observances connected with quarrying, but with a single exception, these have been forgotten. The remembered rule was that workers in the quarry must abstain from women or their tools would break.

Site 128. A *me'ae*; situated on a ridge near Site 126; a possession of the family of the last chieftess of Puamau. This site was unvisited as I was unable to get a guide to it. It is still an object of veneration. From reliable information a large shell trumpet is kept here and is blown by visitors. This trumpet has great mana.

Site 129. A *me'ae*, called Meaefaua (fig. 25); located on a long ridge running north and south near the eastern edge of the valley. Meaefaua belonged to the Mahoes, as did a small tribal *tohua* in the valley east, but the two do not appear to be connected. The site had been cleared at the time of my visit there, giving a favorable opportunity for accurate mapping. The location of the sacrifice trench at the extreme rear of the highest terrace is unusual and interesting. A small and roughly made tiki figure, apparently an architectural detail, lies on the second platform. Between the first and second platforms there is a very curious stone, evidently carefully shaped. (See Pl. VIII, C.) The lower side of the stone is flat, and has in the center a smooth, circular hollow like those often seen in grinding stones near villages. No information could be obtained as to the use or significance of this object.

Meaefaua is said to have been used as a place for human sacrifice in time of drought, as was Pouani, but it has not been used for mortuary purposes in historic times. A few fragments of human bone were found on one of the lower terraces. The site formerly contained several large ironwood trees of which only the roots remain. Most of the cut stone has been removed to build tombs, implying that the site was not one of especial sanctity. Below and to the west of this *me'ae* there is said to have been a *tokai*.

Site 130. The *me'ae* of Faeumanui; situated on the western side of the valley; is said to have been associated with the *tohua* of Fataa. The house of the queen, Faekumi, is also nearby. This site is the burial place of one of the last of the Puamau *tau'a*, Moafinai, who died within the memory of persons now living, but from the nature of the construction it must have been built long before his time.

The *me'ae* is a simple terraced structure, all of it made of rough stone except the highest platform, which is faced with cut slabs. In the middle of the facing is a finely carved figure about two feet high. The head was broken off by the natives some years ago to prevent its being carried away by Europeans, but is lying nearby. The convention is identical with that of the house tiki, except for the ears, which are carved in full and pierced at the lobe with small holes, apparently for ear ornaments.

Site 131. A *tohua*; located at the upper limit of the present village on the western side of the trail leading to the plateau. This is one of the two large

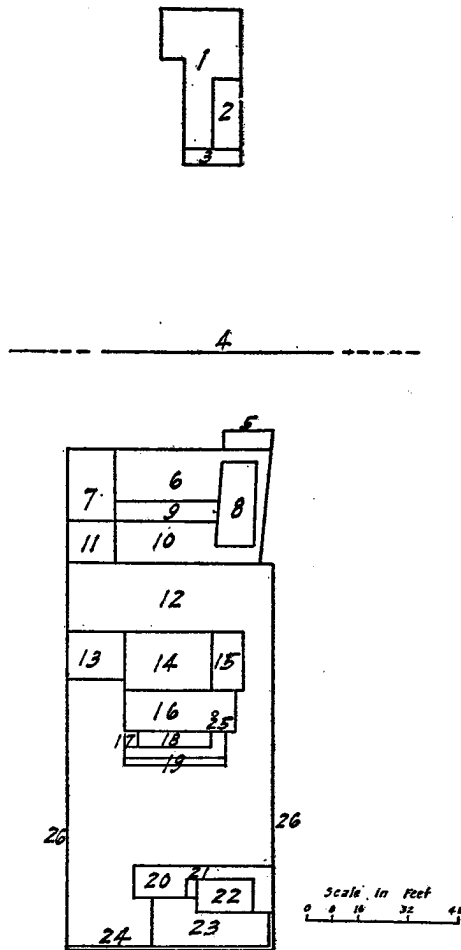


FIGURE 25.—Plan of Meaeafau, Puamau Valley, Hivaoa: (1) paved platform four feet high at front and at level of ground in rear; (2) small much damaged platform one foot high; (3) site of small house, at level of ground; (4) traces of a terrace one foot high broken at either end; (5) paved platform one foot high; (6) level court paved with sea boulders; (7) much broken platform, original height about two feet; (8) platform one foot, six inches high on side toward No. 6 and eighteen inches high on outer side, faced on side toward No. 6 with cut slabs and paved with sea boulders; (9) boulder paved terrace eight inches high at front; (10) boulder paved terrace faced with cut stone, eighteen inches high in front; (11) unpaved area at level of No. 9 (Nos. 6 to 11, inclusive, rest on a terrace three feet high in front and at level of ground in rear); (12) roughly built terrace two feet high paved with small stones; (13) boulder paved platform one foot high; (14) boulder paved terrace three feet high at front; (15) small unpaved platform one foot high, faced with cut stone; (16) paved terrace two feet high at front; (17) unpaved area enclosed by single large stones; (18) small platform eighteen inches high paved and faced with cut stone; (19) rough wall two feet high and two feet to three feet wide; (20) terrace of rough stone two feet high at front; (21) unpaved area enclosed with slabs set on edge; (22) paved platform eighteen inches high faced with cut stone; (23) depression about three feet deep (sacrifice

tohua belonging to this valley, the other being destroyed and the site used for a graveyard. The tribal *tohua* were small and poorly built.

This site is said to have been altered by the removal of stone, but it appears to have been a natural level space with a single terrace of massive stone on the upper side, and a very large *paepae*, on which stood the chief's house, at the western end. This *paepae* has been used as a burial place by the chief's family. At the northwestern corner, but some distance back from the dance space, is another large *paepae* which was the residence of the last chieftainess of Puamau. On the edge of this *paepae* is a peculiar stone bowl, cut from the red tuff of which the tiki are usually made. This bowl is about 20 inches in diameter and 16 inches deep, very roughly made. It was formerly kept in the house, a fire being built in it at night.

Several persons now living who attended feasts given in this *tohua* say it was carefully cleared of brush before each festival. During the ceremonies the chief and his male relatives sat on the large *paepae* at the western end, the other men below and around it. This *paepae* was tapu to women, who sat on the northern edge of the *tohua*.

The *paepae* of the chief's house in this *tohua*, and at least two other *paepae* in the valley, were decorated with small full figure tiki inset between the large slabs which faced the raised bed space of the house proper. This use of carved figures in dwellings appears to have been limited to Puamau, with the single possible exception of a *paepae* in Taipivai, Nukuhiva. The tiki are, as a group, the finest examples of Marquesan stone carving extant, and some of them show a mastery of design and skill in execution which could scarcely be bettered by Europeans. They follow the rigid conventions of Marquesan art, but the sculptor understood his medium and is almost Egyptian in his effective use of a few well defined planes.

Of the three *paepae* originally decorated with these figures, that at the *tohua* has been altered in recent times and one of the figures removed, a second has been completely stripped of its figures to decorate modern tombs, and only one, the *paepae* of Poevau, retains its full original arrangement.

One of the figures remaining in the *paepae* at the large *tohua* is shown in Plate IX, C. It is evidently unfinished, but the modeling is simple and effective. The features have not been carved. But the dome-like top of the head is unusual.

Two of the three figures removed from the second *paepae* for tomb decoration were located and photographed (Pl. IX, D) but the scruples of the guide prevented a careful, close inspection. They are of fine grained red stone, and the carving is unusually deep. The body convention shows no points of interest.

The *paepae* of Poevau retains its full original complement of figures, but two of these have been mutilated by the removal of the heads. The *paepae* was occupied within the memory of persons now living and the history of the figures is well known. They were carved by the Mahoeputiu tribe of Oa and Faiohape valleys, and were brought as a present to the chief of Puamau at the time of the building of the *paepae*. They are thus among the last products of the Marquesan sculptors and prove conclusively that the art of stone carving was alive and vigorous at the time of the French conquest.

The house floor of the *paepae* is raised two feet above the pavement and faced with slabs of cut stone, one of which, not the largest, is 7 feet long, 1 foot thick, and at least 40 inches wide. The tiki are inset between these slabs at intervals of approximately 12 feet, one in the middle and two others at equal distances north and south. The figures are carved in two-thirds round, the back resting against a slab which projects beyond the figure two to three inches on all sides, giving an

pit?); (24) low wall of rough stone; (25) small stone image; (26) retaining walls of variable height marking limits of artificially leveled area on which Nos. 12 to 24 are built.

effective background. This backing is not rectangular, but tapers inward toward the top, where it blends into the decorative head band, (See Pl. X, *A, B*.) Behind this background for the figure, the stone is cut away so that, when fitted in the wall, the adjoining slabs appear to pass behind the block which bears the figure. The headless figures are two feet high. The form of the body is given by a few simple curved planes which meet in well defined ridges. One of these ridges runs across the breast horizontally a short distance below the shoulders. From the center of this a second extends vertically to the genitals. Other ridges cross the arms at the elbows, and the legs at the knee. The treatment of the southern figure is unusually naturalistic, the nipples and the navel being shown by small raised knobs, and the toes by small rectangular projections of equal size.

The northern figure is the only one which still has a head. The ears are shown in high relief against the back slab. The head proper is cylindrical, widest in the middle and tapering slightly above and below. The face is topped by a head band decorated with simple geometric designs incised in low relief. The features are shown in very low relief, but the finish is remarkably good. (See Pl. X, *B*.)

The southernmost of the cut slabs facing the house floor of this *paepae* presents certain features of interest. On its flat upper edge a small turtle, 6 inches long and 5 inches wide, has been carved in low relief. The projecting end is also carved in a peculiar way, as though to serve for the attachment of another slab, at right angles to it.

Site 132. Agricultural terraces; situated in the bed of a small stream almost directly west of the *me'ae* of Oipona; used for the cultivation of taro. Terraces of this sort were observed in Atuona, although on a much smaller scale, in Uahuka, and are reported from Uapou by Handy, but they are uncommon in the Marquesas.

Site 133. Site named Ihuome, probably a small *tohua*; situated a short distance above the *me'ae* of Oipona. This is a broad level space supported on the lower side by a wall of unusually massive masonry, the stones being fitted together in true cyclopean fashion, without recognizable tiers.

EIAONE VALLEY

Eiaone Valley, which is the first on the west of Puamau, is at present uninhabited, but formerly supported a considerable population, most of whom lived in the western division of the head of the valley, called Vaihono.

The valley was inhabited by the Naiki in early days, but they were expelled at the same time that their kindred were driven out of Puamau, and it is impossible to tell which of the remains are their work. The names of the *tohua* and sacred places have been forgotten and the most interesting archaeological remains were unknown to the natives.

Site 134. A *me'ae*, situated in the bed of the valley, about half a mile from the sea; of simple type. (See fig. 26.) It is partially surrounded by a low stone wall within which, near the main platform, is a very interesting pictograph rock. On the western end is a well marked face, with eyes formed by concentric circles, and an oval mouth (Pl. XIV, *B, D*). Numerous sets of concentric circles, usually in pairs, are to be seen on other parts of the rock and a peculiar deeply cut grill appears near the center of the upper surface. The most curious of the pictographs, however, are two small full figures, each 8 inches long and 3-1/2 inches wide. These are outlined by a pecked groove three-quarters of an inch deep, and are smoothly rounded. The one on the western end of the stone is male, and that on the eastern end probably female. The male figure has a round head, with a short

but well marked neck, stubby arms, which reach only to the hips, hips as broad as the shoulders, and tapering legs. (See fig. I, D.) The penis is clearly indicated. In the eastern figure the head is pointed at the top, and the neck is hardly indicated. The sex is not shown.

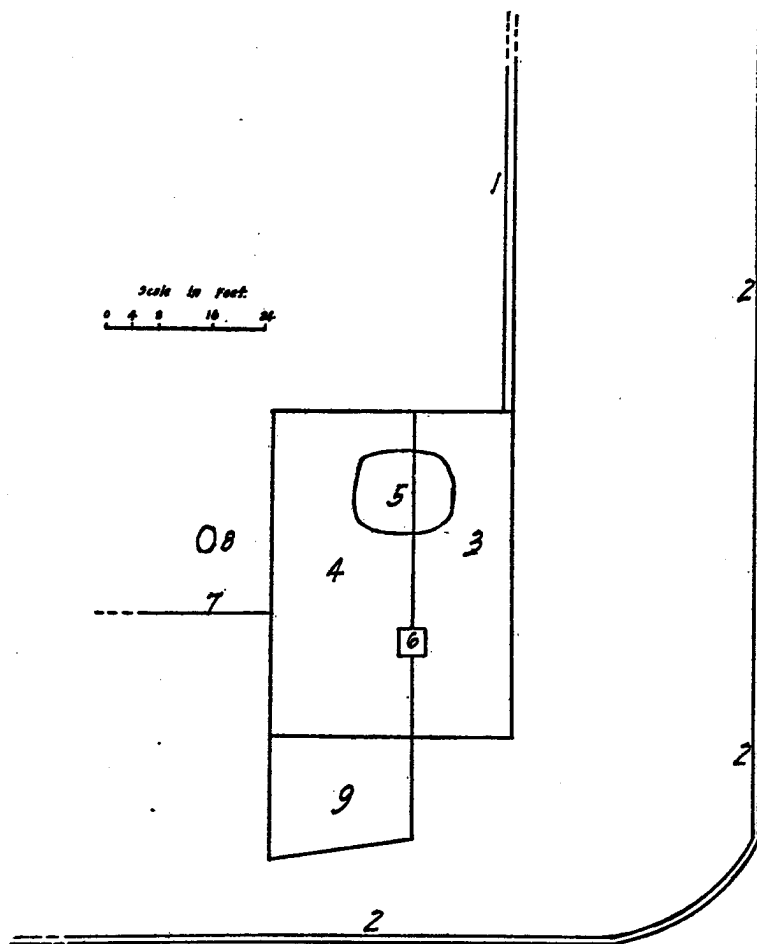


FIGURE 26.—Plan of *me'ae* in Eiaone Valley, Hivaoa: (1) rough stone wall four feet high and two feet to three feet thick; (2) boundary walls of *me'ae* eighteen inches to two feet high; (3) lower half of main *me'ae* platform, three to four feet above ground, paved with rough stone; (4) upper half of main *me'ae* platform, four feet to five feet above ground, paved with rough stone, a row of cut stone slabs set along line between Nos. 3 and 4; (5) very large banyan tree; (6) sacrifice pit; (7) terrace of rough stone one foot to eighteen inches high, not paved; (8) pictograph rock; (9) boulder paved platform five feet to six feet high.

The definite inclusion of a pictograph rock of this sort in the precincts of a *me'ae* of fairly recent construction is interesting, as offering additional evidence that the pictographs were the work of the ancestors of the present natives.

A small slab lying on the main platform of the *me'ae* appears to have formerly

had a face carved on it, of which only a shallowly incised half moon mouth remains.

Site 135. A *tohua*; situated near the mouth of the western fork of the valley; is of simple construction, a long double terrace running along one side of a natural level space, without overlooking *paepae*. Near the eastern end a small platform, its top at the level of the first terrace, juts out into the dance space.

Site 136. A combined *tohua* and *me'ae*; situated three or four hundred yards further up the valley. The *tohua* is a large but very simple structure, whose dance floor is supported by a high terrace on the lower side. A single low terrace of massive stone runs along the upper side.

Site 137. A *me'ae*; situated across a small water course from Site 136; seems to have contained at least three *paepae*, the largest of which is three-stepped, and the facing wall of the second step contains, inset at irregular intervals, three large uncut slabs of grey stone on which tiki faces are carved in very low relief. The convention is like that of the best large figures, and the execution is remarkably good, the lines and planes being beautifully exact and showing a perfect mastery of the art of stone cutting. One of the slabs bears two faces, a large and a small one side by side—a unique arrangement. (See Pl. XII, A.) The average width of the large face is 20 inches, with a height of 16 inches to 18 inches.

Site 138. A *me'ae*; situated on the edge of the long ridge separating Vaihono from the eastern half of the valley. This consists of a series of small terraces, one above the other, separated by considerable intervals. At the western end of the lowest terrace there is a curious pit, about three feet in diameter and two feet in depth, which is covered on the uphill side by a carefully cut semi-circular stone which has, in the middle of its flat forward edge, a transverse groove. The groove is rectangular; 4 inches deep and of the same width. The stone itself is 4-1/2 feet long, 2-1/4 feet wide and 10 inches thick in the middle, tapering to about 3 inches at the edges and looks very much like half of a European mill stone. Two uncut slabs covered the other half of the pit. The pit was excavated, but contained no objects of any sort. Natives of Puamau insist that this stone served as a socket for a pole bearing a tapa flag.

HANAHI VALLEY

Only a few sites were seen in Hanahi Valley as it is uninhabited and the only guide obtainable was unsatisfactory. The names and locations of the *tohua* could not be obtained, and only one site was visited.

Site 139. A *tohua*; located on the top of a spur running out from the western side of the valley a short distance back from the beach and close to the road. The only structures are two large *paepae* about three feet high on one of which lies the much rotted remains of a big drum. About fifty yards from these, on the western edge of the road, there is a very large and well built *paepae* ten feet high on the lower side. Its use could not be ascertained, but it was certainly a ceremonial structure of some sort, probably a *me'ae*.

Site 140. A *taha tupapau*; located in a grove of ironwood trees about one hundred yards above the road to Hanapaaoa, nearly opposite the foot of the valley; the most interesting site in the valley. It is a recent structure, built for a chieftainess of Hanahi, who was the grandmother of the present chief of Hanapaaoa. It is faced with large cut slabs of red stone with an ornamental top of waterworn boulders. The top is paved with boulders which slope downward from the front and back so as to form a trough. The posts of the small house which covered the top are still standing, though in a badly rotted condition. The end posts are approximately ten feet high, shaped like those of an ordinary house, but are carved at the bottom with single tiki figures 20 inches high. These tikis are

carved in full round, with pierced legs, and bear a striking resemblance to the figures carved at the bottoms of the main posts in Maori houses, although the heads, as far as could be determined, follow the ordinary Marquesan convention. The front posts are barely two feet high, and are also carved as full tiki. The house is so narrow that the pitch of the roof must have been over 70 degrees.

Site 141. A large boulder; situated a short distance below Site 140, has cut upon it a series of concentric circles like those seen on the pictograph rock in Eiaone.

Site 142. A *me'ae*; probably mortuary. A creditable informant states that on the eastern side of the valley, near the sea, is a stone enclosure containing many skulls and bones. This site was not visited.

HANAPAOA VALLEY

Site 143. *Tohua* of Fatuuu, situated on the eastern slope of the valley some 300 yards above the stream, and about half a mile from the beach. It is the largest in the valley. It consists of a large paved space resting on a terrace at the lower side, behind which there are two additional terraces and a few *paepae*. The construction is, on the whole, rather poor, and no cut stone seems to have been used. The down-stream end of the terrace of the dance space is built of unusually large boulders and on one of these, in a position where it would have been invisible at the time the structure was in good repair, there is an incised design. (See Pl. XIV, C.)

Site 144. *Tohua* of Tekeia; located in the level floor of the valley almost opposite Site 143. It appears to have been of great extent, although now much broken and in part built over, and was possibly of the enclosed type. The terraces and *paepae* are low and the construction not especially good. The *paepae* of the chief's house is situated at the upstream end of the *tohua* and apparently does not overlook the dance space. At the upstream end of the dance space there are two small *paepae* (p. 26), about 6 feet by 6 feet, and 3 feet high in front. The rear half of the top is 2 feet higher than the front half. These are said to have been the seat of the chief and chieftainness during feasts.

Site 145. *Tohua* of Pipitaueva; situated in the bed of the valley, on the same side of the stream as Site 144, and about a quarter of a mile below it. It is semi-enclosed, having a terrace on the eastern side and a long *paepae*, which apparently does not run the full length of the dance space, on the western side. This *paepae* is of unusually good construction, being made of cut slabs of rather hard grey stone set on edge and topped with boulders from the river. The cut slabs are remarkably uniform, averaging 4 feet long by 2 feet wide. Three slabs set near the middle of the front wall each have two small tikis carved on them in high relief. The distance between the carved slabs is 5 feet, and the distance between the figures of each pair 18 inches to 2 feet. The carving seems to have been excellent, although the figures are now much defaced. The central pair of tikis are male and female, the former on the downstream side. The sex of the other figures can no longer be determined. (See Pl. XII, C, D.)

The terrace on the eastern side of the dance floor is double. The lower part bears, at its upstream end, a large and well preserved *taha tupapau*, and a very large banyan tree. About twenty yards downstream from these, at the foot of the wall of the second terrace, is a fragment of a large head of red stone. It is evidently unfinished, the eye being represented by a simple raised disk and the mouth by a raised oval. As the wall behind it is perfect, it seems probable that it was broken in manufacture and abandoned.

Site 146. *Me'ae* of Tapuohe; situated on the western side of the valley, about fifty yards behind the last house of the present village. It consists of three large

terraces paved with rough stone, on the first of which, and on the upstream end of the second, a large number of skulls and long bones are lying. The pavement of the terraces is much broken, and it seems probable that many of the bones were originally built into the structure. The absence of ribs and small bones and the small number of jaws indicate that the skulls and long bones only were brought here after the distintegration of the body. Several skulls with jaws are lying in the roots of a large banyan tree, together with other bones, so that tree exposure also may have been practiced here. Two large conch shell trumpets and a curious stone ring were lying among the skulls.

One male skull was of especial interest, for it showed a successful trepanation in the posterior portion of the left parietal. The incision was oval, the long axis being in an anterior posterior direction, and was slightly over an inch in greatest diameter. The edges were perfectly healed, and there were no signs of inflammation.

HANATEKUA VALLEY

Hanatekua is the first large valley east of Hanaipa, and seems to contain few remains. I was handicapped by an unreliable guide, but later information indicates that there are two *tohua* with associated *me'ae* in the bed of the valley and a few small *me'ae* in its head.

Site 147. *Tohua* of Mauia; located on the eastern side of the valley near the shore. It seems to have been extensive, but was poorly built and is now so much altered by floods and the removal of stone for walls that its form cannot be ascertained. This *tohua* is also known by the names Tapuovi and Tehutete, these being apparently the names of chiefs who owned it in succession. The *me'ae* is situated at the seaward end and consists of a few low *paepae* overshadowed by large trees.

A large drum, fairly well preserved, rested against one tree. It is 6 feet, 5 inches high, 3 feet, 10 inches in circumference, and the height of the base is 1 foot, 6 inches. The body of the drum has the same circumference throughout and shows a beautiful, even adzing, but no ornamentation. The base consists of eight legs cut from the same piece and identical in form with those of the small drums. The interior of the drum has been hollowed conically to a depth of 4 feet, 6 inches; the thickness of the walls at the top is less than half an inch. The lip of the cavity is slightly recurved.

Site 148. *Tohua* of Kahiki, situated in the center of the valley immediately behind the beach. It is entirely destroyed, its site being occupied by the Catholic church and cemetery. Enclosed within the area of the cemetery is a single *paepae*, said to have belonged to the *tohua*. This structure, built of bowlders, is approximately 10 feet, by 20 feet, by 8 feet high. The top is edged with cut red stone above which a single ornamental tier of even sized bowlders has been laid. The whole structure gives the effect of an unusually large *taha tupapau*, but it is said to have been the residence of a chief, Fatatete, who was also a priest. According to a legend, this chief was seized by some American sailors and his long hair cut, in revenge for which he raised a great storm in which their ship was driven on the rocks.

HANAIPA VALLEY

Site 149. A large rock whose front and top are covered with pictographs. (Pl. XIII, *A, B, D, F*); situated on the southern side of the Vaiepehia River in the side valley of Haea, directly opposite the *tohua* of Koeomai. This is an object of great interest. The name given for the rock is Hakaiki (general term for chiefs). The pictographs include angular figures like the small one on the pictograph rock in

Teueto, Tahauku, concentric circles, and elaborate designs reminiscent of those used in bowl carvings, with which is associated a single face carved in the usual tiki convention. None of the peculiar figures with curved limbs carved on the Tahuku rock occur here. On the upper surface of the rock there are a number of straight grooves, approximately longitudinal, but not parallel, which extend its entire length. All the figures are deeply incised.

Site 150. *Tohua* and *me'ae* of Koiomai, with which the Site 149 is associated; very extensive. It is still held in reverence by the natives who objected to having it visited, so that only a brief inspection was possible. It extends beyond the mouth of the side valley of Haea, the dance space probably being in the main valley. The *me'ae* portion consists of numerous rectangular platforms strung along the stream. One of these is faced with cut slabs of red stone set on edge above which is laid a tier of large oval bowlders from the river or sea. The tops of the slabs have been cut into rounded depressions to receive the bowlders, the fitting being remarkably accurate. The site contained no tiki.

Site 151. *Tohua* of Punaau; situated in the bed of the valley a short distance below that of Koeomai. It is a rather small structure for the most part obliterated. On the river side there is a low platform, with a large banyan tree and a *taha tupapau* of unusual size. A much decayed coffin lies under this tree, and informants state that the dead, apparently after mummification, were often placed in its branches. A short distance up stream from the *taha tupapau* and tree, and on the line of the outer edge of the dance space, there is a large and excellently built *paepae* with a very narrow bed space. This was probably the men's house. Directly in front of the *taha tupapau*, in the dance space, there is a circle of stone back rests 20 feet across, marking the place where the singers sat during the feasts. Facing this, on the upper side of the dance space, is a long *paepae* said to have been the residence of the chief. One of the facing slabs of this *paepae* has carved upon it a peculiar figure with a square head and long curving projections like wings on either side (Pl. XII, B).

Site 152. A large mortuary *me'ae*; situated in the lower part of the valley, on the western bank of the river. It consists of a broad terrace, paved throughout, above which the site is divided into two equal sections, that on the upstream side bearing a number of *paepae* while that on the down stream side has a series of low terraces one behind the other. These terraces contain numerous human bones and skulls, which appear to have simply been scattered over the surface or thrust down among the stones of the terrace pavement. A fragment of a large wooden tiki leans against one of the *paepae*, and there are a number of small stone architectural figures, and a large detached head. The carving of this head, which appears to have been an architectural detail also, is unusually good. The eyes are formed by a series of concentric circles. The mouth, which is rather narrow, is decorated at either corner with a series of three chevrons, points inward. This head is said to represent a fish. In addition to the figures seen, one of the *paepae* is said to contain a slab on which an octopus is carved in high relief. This slab has been entirely enclosed by a large tree, and the information could not be verified. The entire site is surrounded by a low wall of rough stone. The site contains several large trees, but these appear to be of rather recent growth and the enormous banyans often found in *me'ae* of this sort are lacking.

Site 153. *Me'ae* of Teohoteani; located high up on the eastern side of the valley above the present town. It is a small site consisting of three rather low and narrow terraces placed one above another along the edge of a spur of the hill which drops away steeply on both sides. The lowest of these has, on its upvalley edge, a small *paepae* which originally bore a house. One of the house posts of unusual thickness and carved in tiki form, is still standing. In front of this house *paepae* lay a large drum, much decayed.

HANAPETEO VALLEY

Hanapetéo Valley is really two deep valleys separated by a high ridge which runs down almost to the sea. It is waterless and can only be entered from the beach.

Site 154. Stone fort, situated on the very point of the ridge, about two-thirds of the way to its summit. That this fort is comparatively recent is shown by its having been loopholed for musketry. In construction it is a simple breast work, nowhere more than four feet high, and in shape is a half moon, following the contour of the point. The crescent thus formed is 73 feet across the tips, and 30 feet deep. At the eastern end of the crescent, and separated from it by a break of about 40 feet there is another wall, similar in construction to that of the fort proper, which seems to have been an outwork commanding a place where the ascent is less steep. Near the middle of the crescent, but some distance behind it, there is a house *paepae*, scarcely higher than a pavement. The position is a strong one, and would have been difficult to take by assault, but, being waterless, could not have stood a siege.

Site 155. A small *tohua* situated in the eastern valley, close to its mouth; consists of a natural level with a long narrow *paepae* on one side. This structure presents no points of special interest.

Site 156. A large cave, located on the eastern side of the bay, a little to seaward of the beach, the most interesting feature of the valley. This is a natural formation, approximately 60 feet wide by 20 feet high at the mouth, and extending back into the cliff for about 400 feet. It is separated from the sea by a dike of hard rock in front of the entrance, and affords comfortable shelter in all weather. Just inside the entrance, on the seaward side, is a pavement of waterworn cobblestones from the beach, now so broken that its original shape can not be determined. This cave was thoroughly explored, including an inner chamber at the extreme tip which was entered by crawling through a small passage, but no artifacts or signs of occupation were found. A spring of good water is said to have been in this cave at one time, and this, with its location, would have made it an ideal camping place. It is the only site seen in which there might be some chance of finding stratification, and should well repay excavation.

HANAHUI VALLEY

Hanahui is the first large valley east of Hanamenu, and seems to have supported a considerable population at one time, although it is now uninhabited and was, at the time visited, entirely waterless. A highly interesting feature of this valley is that no *taha tupapau* of ordinary form were observed, their place being taken by well built enclosures with walls four feet to six feet high, in which there were no openings. According to reports there are a number of burial caves in the cliffs on the western side of this valley, but their location was not known to the guide.

Site 157. A *taha tapu*; situated on the eastern side of the valley, just behind the beach; consists of two small terraces running along the foot of a broken cliff. This site is said to have been a place where skulls and bones were deposited, but a careful examination of the terraces and the numerous crevices in the cliff behind failed to show any remains.

Site 158. A *taha tapu*; situated just beyond the beach, and somewhat to the

east of the center of the valley. The purpose of this site was unknown to the guide. It contains no structures, but is marked by a large *temanu* tree at whose feet lies a small waterworn boulder upon which a simple design has been incised (Pl. XV, B). The stone is very hard, and the cut is unusually deep, three quarters of an inch to one inch. The design itself seems to be an irregular cross of a sort common in wood carvings.

Site 159. A *me'ae* of fishermen; situated on the western side of the valley, almost at the water's edge; well preserved. This structure is L-shaped, the long arm fronting the sea, while the short arm extends along the steep slope of the western side of the bay. The short arm consists of a two stepped *paepae* 40 feet long, the steps approximately three feet high. The upper step is faced with large natural slabs set on edge, and paved on top with slabs and bowlders. The long arm consists of two parts; a slightly raised pavement, having at its seaward end three slab back rests of the sort common on house *paepae*, and a low, nearly square *paepae* paved with bowlders throughout. The low pavement occupies the space between the two *paepae*. Unfortunately the guide knew nothing of the uses of the different parts of this structure.

Site 160. A *tohua*; said to be the only one in the valley; located about 50 yards west of the inner edge of Site 159 and about 150 yards back from the beach. It consists of two rather small, rectangular *paepae*, said to have been associated *me'ae*, and a long narrow *paepae*, running lengthwise of the valley, which is barely two feet high and fronts a large unpaved level space.

Site 161. House *paepae*; situated in the bed of the valley, back from Site 160; numerous, well built. On one of the *paepae*, said to have been that of the chief, some well carved house posts are still standing.

HANAMENU VALLEY

Hanamenu is one of the largest and most fertile valleys on Hivaoa, but has been almost depopulated, the sole survivors of the original tribe being two old women, one of whom is insane. On the left side of the bay, facing toward the sea, are a series of structures which extend for some distance along the rocky shore.

Site 162. A series of structures; situated on the left side of the bar facing the sea, extending along the rocky shore.

(a) A fort; stands at the mouth of the stream, on the seashore. This is a nearly square enclosure, approximately 40 feet on a side, with walls 2-1/2 feet thick, which were originally 4 to 6 feet high on the inside and much higher on the outside. Across the middle of the enclosure, running parallel to the shore, is a step or terrace about 2 feet high, while in the upper corner toward the valley is a low house *paepae*. A small spring rises within the enclosure.

(b) A house *paepae* which is said to have served as a place of refuge for the women and children during an attack; is situated just beyond the fort, directly on the seashore; unusually large. According to the guide, the fort was tapu to women. In times of danger, the chief, with a guard of picked warriors, took shelter in the fort while the other warriors scattered themselves over the slope behind. This slope is covered with large rocks, and runs up steeply to a perpendicular cliff, the whole forming a strong defensive position. Escape from the fort in canoes would have been quite easy, and this may have been one reason for the selection of this site, for the people in the lower part of the Hanamenu Valley were related to those of Tauata and were constantly at war with the tribe in the upper end of the valley.

(c) A *paepae*; situated a short distance beyond (b), but at a considerably higher level. This is a rather large three stepped *paepae* said to have been the dwelling of the chief. As a large wooden tiki stands on the second terrace, it seems probable that it was really a sacred place of some sort.

(d) A *me'ae*; situated some distance in-shore from the structures *a*, *b*, and *c* at a point nearly above the large spring and about 100 yards up the slope. This structure is large and originally had two wooden tikis set in the platform at the back of the first terrace. One figure has been burned, but the other is in a fairly good state of preservation and differs somewhat from the usual type. (See Pl. IV, *A*.) It is of toa wood, and was cut into a thick slab before carving. The head is longer and narrower than usual and the ears, which stand out from it at right angles, are pierced with single holes, probably for plugs. The mouth is crescent shaped, instead of the usual long oval.

(e) Mortuary site; situated behind *d*. This is a rock slide, in the crevices of which a number of scattered human bones are visible. Near the upper right hand end of this slide, three unusually well preserved skulls, with their jaws, were found in a small hole. All had apparently been cleaned before placing in the hole, and one had been wrapped in fine white tapa and tied with sennit.

Site 163. Burial caves; situated in the sheer cliffs above the talus slopes on the sides of Hanamenu Valley. Many of the caves have been looted.

(a) A large cave; situated on the left side of the bay, a short distance above the end of the talus slope. It contained the skulls of six individuals, but not more than two complete skeletons. At least one of the bodies had been placed in a coffin, one end of which still remained. The opening of the cave has been roughly walled up to a height of two feet, and all the remains lie immediately within this wall, the back of the cave, which was perhaps 12 feet deep, being entirely empty. An empty coconut shell vessel, of the sort still in ordinary use, stood just inside the wall. Among the bones lies three much decayed fau poles, apparently the remains of a coffin cover, the handle of a war club of usual type, broken at the neck, and the blade of a large paddle club. No other objects were found in this cave.

(b) Several places of interment, all simply shallow niches in the rock, containing from one to four skulls with their long bones. One of these yielded a bamboo tobacco pipe of the sort still in use and the wooden handle of some small implement. Another contained an oblong wooden bowl, a perforated wooden disk, grooved at the edges, possibly an ear plug, and a carved fragment of a war club of *uu* type. It seems probable that all these niches had been visited previously and any more valuable objects removed.

(c) Two caves; situated high up the face of a sheer rock at the entrance of the bay. The first cave yielded a whale's tooth, perforated for suspension, and the wooden top of a large calabash container. According to statements of my guides this cave also contained a coffin and a hair collar of ordinary form. The collar was so entangled with the bones that they were afraid to remove it. The other cave contained only bones.

Site 164. On the shoreward side of Site 163 are three or four small walled enclosures. On its summit a number of columns of loose stone had been built, the explanation given being that these at a distance appear like tikis. Similar columns have been built on a *taha tapu* on the top of the cliff on the left hand side of the bay, and when seen from the deck of an entering ship these do appear like large stone figures. These columns, whose use seems to have been limited to Hanamenu and the adjoining valley of Hanaheka, are built like a child's tower of blocks, single stones being placed one on top of the other. Those on top of the cliff at Hanamenu are over 6 feet high, but the average height is between 3 and 4 feet. Considerable care seems to have been used in selecting stones with flat paral-

lel sides at the top and bottom, but none of those in the columns observed had been artificially cut, and all outer edges are rough and irregular, giving the columns an uneven outline. In spite of their apparently flimsy construction these columns must possess a good deal of stability to have withstood the wind and weather for at least fifty years.

Site 165. A *tohua*; situated in the flat bottom of the valley, about 400 yards back from the sea. This place was pointed out as the site of the old *tohua*, but to judge from the remains it must have been small and poorly constructed. Just beyond it there is a large low rectangular platform at least 60 feet on a side, but barely 2 feet high, which is said to have been the *me'ae* of the fishermen. The construction is rather unusual, the platform being unpaved and apparently consisting of a thin facing wall filled with sand.

Site 166. Just beyond the *paepae* of the fishermen, at the side of the main road, is a very large and well built *taha tupapau* in which cut stone occurs, the only instance in the valley. It should be noted that cut stone is rare or lacking in the structures on this end of Hivaoa, and that there are no stone tikis—both facts probably referable to the absence of tuff outcrops.

HANAHEKA VALLEY

Hanaheka Valley, which is the first one west of Hanamenu, is connected with it by a well-worn trail across the intervening ridge, indicating that there was close contact between the two in former times. At present it is uninhabited.

Site 167. A *tohua*; situated on the western side of the valley, about a half a mile back from the sea; large; not well constructed. Immediately adjoining this *tohua* on the side toward the mountains is a walled enclosure with three terraces running up the slope on the western side. This was the *me'ae* of the *tohua*. On the second terrace there are three large wooden tikis, all much decayed. The one of the side toward the sea was the tallest seen in the group, being slightly under 9 feet high, although only 20 inches in diameter. The carving, in so far as its character could be determined, presented some interesting features. The ears projected at right angles to the sides of the head. The arms and legs were small and short, the legs being in the usual half flexed position. The bodies were remarkably long and the head was shorter than usual in proportion to the whole height of the figure. The carving was so much defaced that photographs would have been useless.

Site 168. Mortuary crevices and platforms; behind the *me'ae* of Site 166 a long slope of large rough rocks extends up toward the foot of the sheer cliff which forms the western wall of the valley. The crevices between these, and two or three low platforms built among them in convenient places, contain many shattered skulls and long bones, apparently placed here after the disintegration of the body.

At one place two rough stone columns, like those described in the valley of Hanamenu, had been built on the summit of large rocks. One of these columns was barely 18 inches high, and consisted of three stones only, the topmost of which was larger than the others and was said to represent the head. The other column was three feet high and contained eight stones, the extreme external diameter of the largest being 14 inches.

Site 169. Three *taha tupapau*; on and above Site 167. On two of the structures the end posts of the covering houses are still standing. From the position of these posts the houses appear to have covered the entire top, while the narrow slightly depressed pavement found at the front of most *paepae* of this type is lacking.

All three have a circular pit, approximately two feet in diameter, running to the ground. In two of the *taha tupapau* this pit is at the end toward the mountains. In the third it is in a small extension built out from the front of the *paepae* at the end toward the mountains.

Some years ago a native discovered, in the top of one of these *taha tupapau*, in a depression covered with a slab forming part of the pavement, a large calabash with a carved wooden cover which contained many objects of value. Exact data on this find could not be obtained, but it is the only case which has come to notice in which offerings were actually inserted in a *taha tupapau*.

One of the *taha tupapau* in this valley was partly excavated, yielding some light on the construction, but no specimens. The *paepae* consisted of facing walls in which the rocks were arranged to give the greatest external surface with a filling of large irregular stones arranged to fill the largest possible space. No earth fill had been used, even in the final leveling and paving, and the ground had not been prepared or leveled before the construction of the *paepae*.

Site 170. Mortuary site. The cliff behind these *taha tupapau* contains many small crevices and ledges which have been used for the disposal of bones and, where their size permits, for the insertion of entire bodies in coffins. These coffins were all of the usual southern type, long narrow troughs hollowed from single logs and covered with a mat of fau poles.

MOHOTANE

The island of Mohotane lies east-southeast of Hivaoa and is visible from it in ordinary weather. It is high and almost waterless, there being only one good spring. Formerly it was inhabited by a single tribe, but was abandoned during the late prehistoric or early historic period and is now rarely visited. There is said to be a single village site containing house platforms similar to those of Hivaoa. According to native informants a human figure carved in low relief is to be seen on the face of the cliff high above the sea, but from the accounts of European visitors this is probably a natural formation.

TAHUATA

The island of Tahuata lies south-southwest of Hivaoa and is separated from it by a narrow channel. The habitable valleys are for the most part small and shallow, and the comparatively level northern side is waterless and unsuited for human occupation. The natives were reckoned as members of the western division of Hivaoan tribes, cooperating with them in their wars. The culture of the two islands appears to have been identical. The two principal valleys are Hapatoni and Vaitahu.

HAPATONI VALLEY

Hapatoni Valley is very shallow, being little more than a narrow crescent of habitable land between the mountains and the sea. A small but curiously shaped natural rock, situated on the beach in front of the Catholic Mission,

is called by the same name. The custom of having a stone bear the name of a valley seems a common one.

The only *tohua* in the valley is said to have been situated on a natural level space just back of the beach near the southern end of the bay. It has



FIGURE 27.—Map of Tahuata (reproduced from Handy, 19).

been destroyed, the site being occupied by a Catholic church and cemetery. Natives declare that the original structure contained several small stone figures which were built into the foundations of the church.

Site 171. The *me'ae* Eia; situated back of the beach near the southern end of the bay; probably connected with the *tohua* which formerly stood where the Catholic church now stands; very large; enclosed with a wall; terraced. The lowest terrace has two steps and bears a *paepae* at either end, so that, when seen from the second terrace, the effect is that of a sunken court. The *paepae* at the northern end is much

broken; that at the southern end is well preserved and bears at its upper end a second *paepae*, four feet high, the front of which projects ten feet beyond the line of the second terrace. Behind this first unit is a second terrace, of the same width and three feet high, which bears a large *paepae* running north and south. At the southern end of this *paepae* there is a stone back rest. Behind the second terrace is another large terrace, six to seven feet high, which seems to have borne numerous low *paepae*, now broken and obliterated. At the back of the second terrace, against the front of the third terrace, there is a rectangular enclosure made of single large stones, containing many human bones. The third terrace is built on a natural outcrop of rock so that little fill was necessary.

Site 172. The *me'e* Anapara; situated on the edge of the sea, a short distance north of the Catholic mission. Human sacrifices are said to have been offered here, but the structure is insignificant, consisting of a single *paepae*, now much broken.

Site 173. A pictograph rock; situated in a small gully near the northern end of the valley. The trail descends into the gully between two rocks, each about 8 feet high. The pictograph rock is a large waterworn boulder of rather hard stone, with numerous figures, deeply incised, on the northern and western sides. With few exceptions the figures are tiki faces, resembling in their convention some of the stone heads inserted in walls as ornamental details. The eyes are shown by two concentric circles and a central pit, and the mouth by a long oval having in its center a transverse groove. The nose is not indicated. (See fig. 1, *b*). Some of the faces have the additional feature of a small double curve or chevron at either corner of the mouth. (See fig. 1, *a*.) An average pictograph of this type is 18 inches wide and of the same height, but one or two figures are larger. One peculiar pictograph, 12 inches long, consists of two pairs of concentric circles from which a single vertical line descends, this line being crossed by six horizontal lines, the lower four evenly spaced. (See fig. 1, *c*.) Below and to the right of this figure is a single small angular human figure of the type observed on the pictograph rocks in the valleys of Vaipae and Haniaapa, Hivaoa.

VAITAHU VALLEY

Vaitahu Valley was the site of the first French settlement in the Marquesas Islands. The structures which must have existed in its lower part have been obliterated and their sites forgotten. Only a single *tohua* with its associated *me'ae* was visited.

Site 174. The *tohua* of Tenuu Apita; situated well up the slope of the southern side of the valley, about two miles above its mouth; consists of a level space, formed by terracing on the lower side, having along the upper side a double stepped terrace, now much broken. There may have been a few overlooking *paepae* on this terrace. At the down-valley end a massive wall, L-shaped and of ancient construction, projects into the dance space.

Site 175. The *me'ae* of Iomavaepu; connected with the *tohua* Tenuuapita at the up-valley end; large; contains many *paepae* and terraces; was certainly mortuary. There are several large banyan trees. The tapu on this *me'ae* is still observed by the natives and the guide's scruples prevented a thorough investigation.

Site 176. A slab of cut stone; 7 feet, 6 inches in length, one foot thick, and at least 5 feet wide; situated about a hundred yards up the valley from the *me'ae* Iomavaepu, at approximately the same level. There are no structures in the immediate neighborhood, and the slab evidently was dropped in transit to some *me'ae*. It stands on edge, leaning backward slightly. The back is roughly and irregularly cut. On the front there are two projections, corresponding to the pairs of small tiki seen

on large slabs in *me'ae*. The guide said there had formerly been small tiki on these, which were cut off and carried away by the French. As the projections are nine inches high and show a finish identical with that of the rest of the slab, it seems more probable that they were left in the original quarrying with the idea of cutting them into tiki after the slab was transported and placed. The natives have forgotten the original purpose of this slab, have given it the name Ha'ati, and associated with it the legend that it was brought by ants; a legend also connected with certain large stones in the valley of Taiohae, Nukuhiva. This argues considerable age.

FATUHIVA

Fatuhiva, the southernmost island of the Marquesan group, is extremely mountainous, containing practically no level land and only two large valleys, Omoa and Hanavave. The rainfall is heavier and more regular than in the islands farther to the north and the valleys are choked with dense growth while the hills are covered to their tops with verdure. The island was densely populated at the time of its discovery, but the natives have suffered greatly from imported diseases and are reduced to about three hundred. In 1920 there were many young persons and children and, barring epidemics, there will probably be a slight increase henceforth. The natives are gathered in the valleys of Omoa and Hanavave, with a few scattered families elsewhere.

In their general culture the natives agree with those of the islands of Hivaoa and Tahuata. Although the distance separating these islands from Fatuhiva is so great that their shores can rarely be seen, frequent voyages to them were made even in prehistoric times. During the historic period much travel back and forth has taken place, with a desultory trade in art objects, in whose manufacture the Fatuhivans excel. Trips by whale boat between the two islands are still frequent.

The Fatuhivans were, and still are, considered the best carvers and tattoo artists in the Marquesas Islands. Many young persons are tattooed, and Fatuhiva is the only island of the group where tapa is still regularly manufactured. Their stone structures, however, were markedly inferior to those of the other islands, and their houses are said to have been the smallest and worst built. They mummified and preserved the bodies of their dead in the dwelling, differing in this respect from most of the Hivaoan natives.

Although Fatuhiva was the first island of the group to be visited by Europeans, it was the last to pass completely under French control and the old life has survived there to a greater extent than in any of the other islands.

OMO A VALLEY

Site 177. The *tohua* and *me'ae* (two in number) of Pouau; most extensive site in the valley covering at least an acre of ground; located on the south bank of the

river about a mile from the sea. The *tohua* proper is small, covering less than a fourth of the total area, and appears to have been a natural level space bordered by a depression on the western (downstream) side. The western edge is supported in places by stone retaining walls, and there traces of a low enclosing wall. (See figure 29.) The southern end of the *tohua* is marked by a low wall, much broken. The northern limits are unmarked.

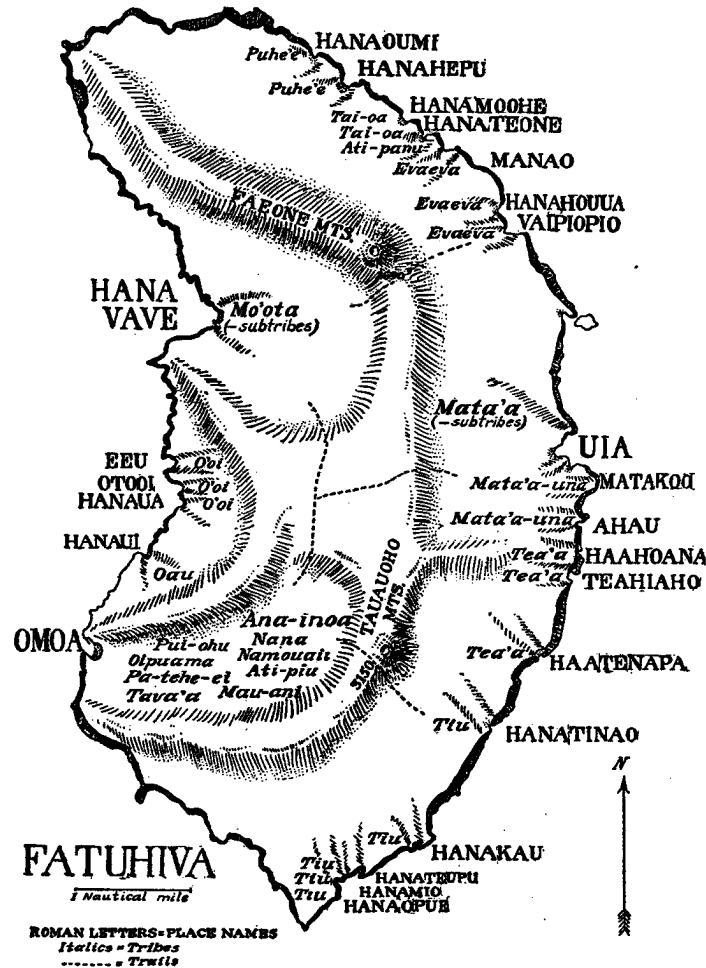


FIGURE 28.—Map of Fatuhiva (reproduced from Handy, 19).

About thirty feet northeast of the *tohua* is a large *paepae*, partly overgrown by a banyan tree, said to be a *me'ae*, and beyond this a large area of uncertain limits, containing no structures, included in the *me'ae* precincts.

A *me'ae* to the north of the *tohua*, separated from it by a considerable interval, and a dry water course, is in the form of an L, with the top of the long arm extending to the river bank and the short arm running westward, roughly parallel to the stream but about fifty feet back from it. The long arm is a low platform of waterworn stone, having on its outer end, overlooking the stream, a small house

paepae partly overgrown by a banyan tree. Immediately behind the tree, with its long axis at right angles to it, there is a long narrow platform which, from its form, was probably used as a stand for drummers. At the juncture of the two arms of the L is another house *paepae* which has an unusually large stone back rest. There are

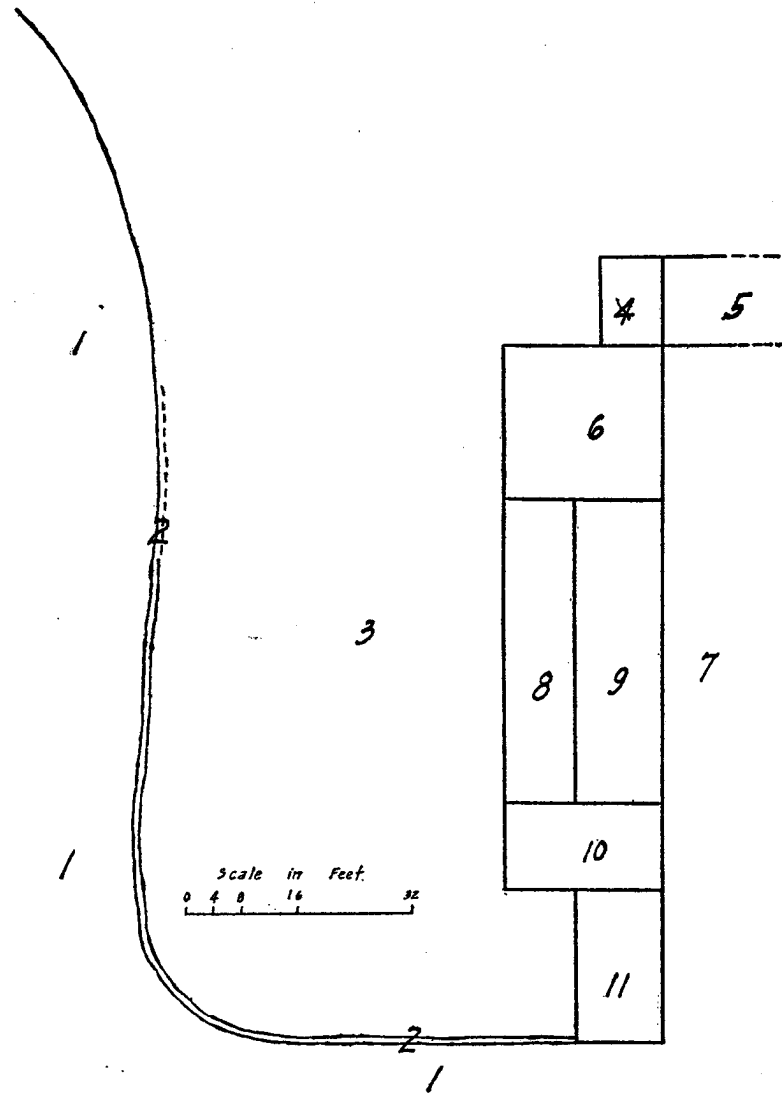


FIGURE 29.—Plan of *tohua* connected with *me'ae* of Pouau, Omoa Valley, Fatuhiva: (1) dry water course; (2) low wall of rough stone eighteen inches to two feet high; (3) dance floor; (4) platform one foot high; (5) terrace one foot high in front, running into slope at rear; (6) platform six feet high in front and three feet to four feet high at rear; (7) hillside; (8) paved terrace two feet high at front; (9) paved terrace two feet above No. 8 at front, running into slope at rear, low retaining wall at rear; (10) platform five feet high at front and one foot to eighteen inches high at rear; (11) terrace one to two feet high at front, much broken.

no structures on the short arm of the L. Low walls enclose the *me'ae* on the ends and at the rear. According to the guide this was a mortuary *me'ae*; if true, its association with a *tohua* was unusual.

A short distance south of the *me'ae* just described, between it and the *tohua*, there is a long narrow *paepae* about three feet high. Near its western end there is a banyan tree among the stems of which lies a much rotted *me'ae* drum of ordinary form. Still farther to the west there are other platforms and banyan trees, but the guide was uncertain whether these belonged to Pouau.

Site 178. The *tohua* of Vaihinano; situated a short distance down stream from Pouau on the north bank of the river. It has been almost destroyed by a change in the channel, only one corner remaining. The walls are about 1-1/2 feet high and 5 to 6 feet wide, their arrangement suggesting that the *tohua* may have been of the enclosed type.

Site 179. The *tohua* of Poitohuu; situated in the level bed of the valley, a short distance downstream from Site 178. The dance space, about 100 feet long and 25 feet wide, is bordered on the southern side by a terrace three feet high, is closed

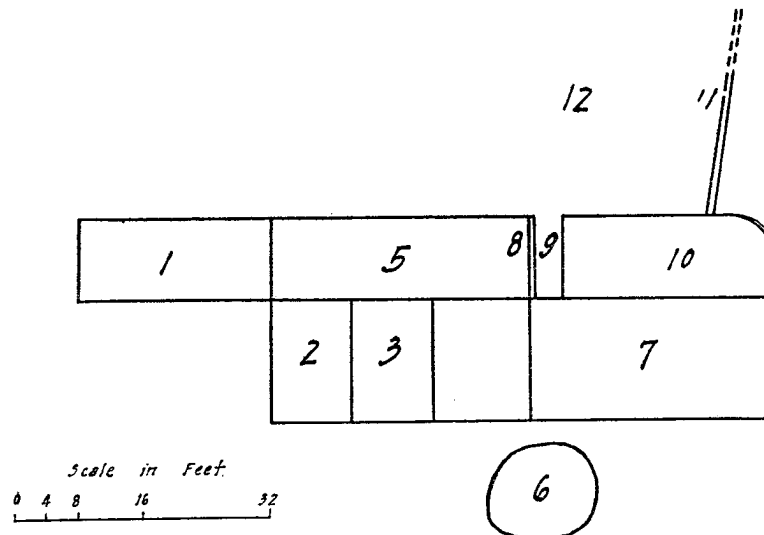


FIGURE 30—Plan of *me'ae* of Vevau, Omoa Valley, Fatuhiva: (1) platform four to five feet high in front and at level of slope in rear; (2) paved terrace 4 feet high in front; (3) platform three feet high in front; (4) unpaved sloping depression with a retaining wall one to two feet high in line with fronts of Nos. 2 and 7, probably entrance to *me'ae*; (5) paved terrace one to two feet above Nos. 2 and 3; (6) large banyan tree in which corpses were placed; (7) paved terrace four feet high at front; (8) wall of rough stone eighteen inches high; (9) unpaved passageway; (10) paved terrace two feet high at front and at level of slope in rear; (11) rough stone wall two feet to three feet high, probably recent; (12) steeply sloping hillside.

on the eastern end by a *paepae* about four feet high, and is bounded on the northern side and the western end by walls of rough stone. The *paepae* at the eastern end of the dance space is very narrow and so probably did not bear a house. It is said to have served as a seat for the chief during ceremonies. (See p. 26.) Two *paepae* were built on the terrace. The one on the western edge is evidently a house *paepae* and is said to have been the residence of the chief to whom the *tohua* belonged. The *paepae* on the western edge, bearing a dead banyan tree, was a *me'ae*.

Site 180. The *tohua* of Tonoeve; located almost opposite Site 179 on the southern side of the valley. The *me'ae* originally connected with this *tohua* has been destroyed and a modern house built on its site. The *tohua* proper seems undisturbed. It is a naturally level space with a terrace about three feet high, of rather massive construction, along its southern side. According to the guide, no platforms ever stood on this terrace.

Site 181. The *tohua* of Anitau; situated in the bed of the valley, near the center of the present village, a short distance above the French gendarmerie. The dance floor is a natural level with a single platform about two feet high running along one side. On the opposite edge of the dance floor is the *me'ae*, a small platform built like an ordinary house *paepae*.

Site 182. The *tohua* of Nunukua; situated on the south side of the valley just back of the beach. The only structure on this site is a small square platform, said to be the *me'ae*, which bears an enormous tree. Two small stone figures are said to have been in this *tohua*, but they were carried away many years ago and their position has been forgotten.

Site 183. The *me'ae* of Vevau; situated on the southern side of the valley a short distance above the *tohua* and *me'ae* of Pouau; a large structure; no associated *tohua*. (See fig. 30.) According to the guide it was used as a mortuary *me'ae*, the bodies of the dead being finally exposed upon its terraces or placed in the branches of the large tree. At one end of the structure there are three modern graves.

Site 184. The *me'ae* of Tuihi; situated on the south side of the valley, about a quarter of a mile farther from the sea than the *me'ae* of Vevau. It consists of a number of small platforms scattered irregularly over a steep and rocky slope. There are many crevices and holes between the rocks suitable for the deposition of skulls and bones. Although no remains were seen, it is highly probable that it served as a place for the final disposal of the bones of the dead. A number of burial caves are said to exist in the cliffs around the head of the valley, but no guide to them could be obtained.

HANAVAVE VALLEY

My stay in the valley of Hanavave was brief and I was unable to obtain a resident guide. Only one *tohua*, with its associated *me'ae* was visited, and the natives declared that there were no others, although subsequent information indicates that ceremonial structures were as numerous here as in Omoa. According to a European informant there is an extensive *me'ae*, name unknown, in the head of the valley, containing two stone heads of eels which are still venerated by the natives.

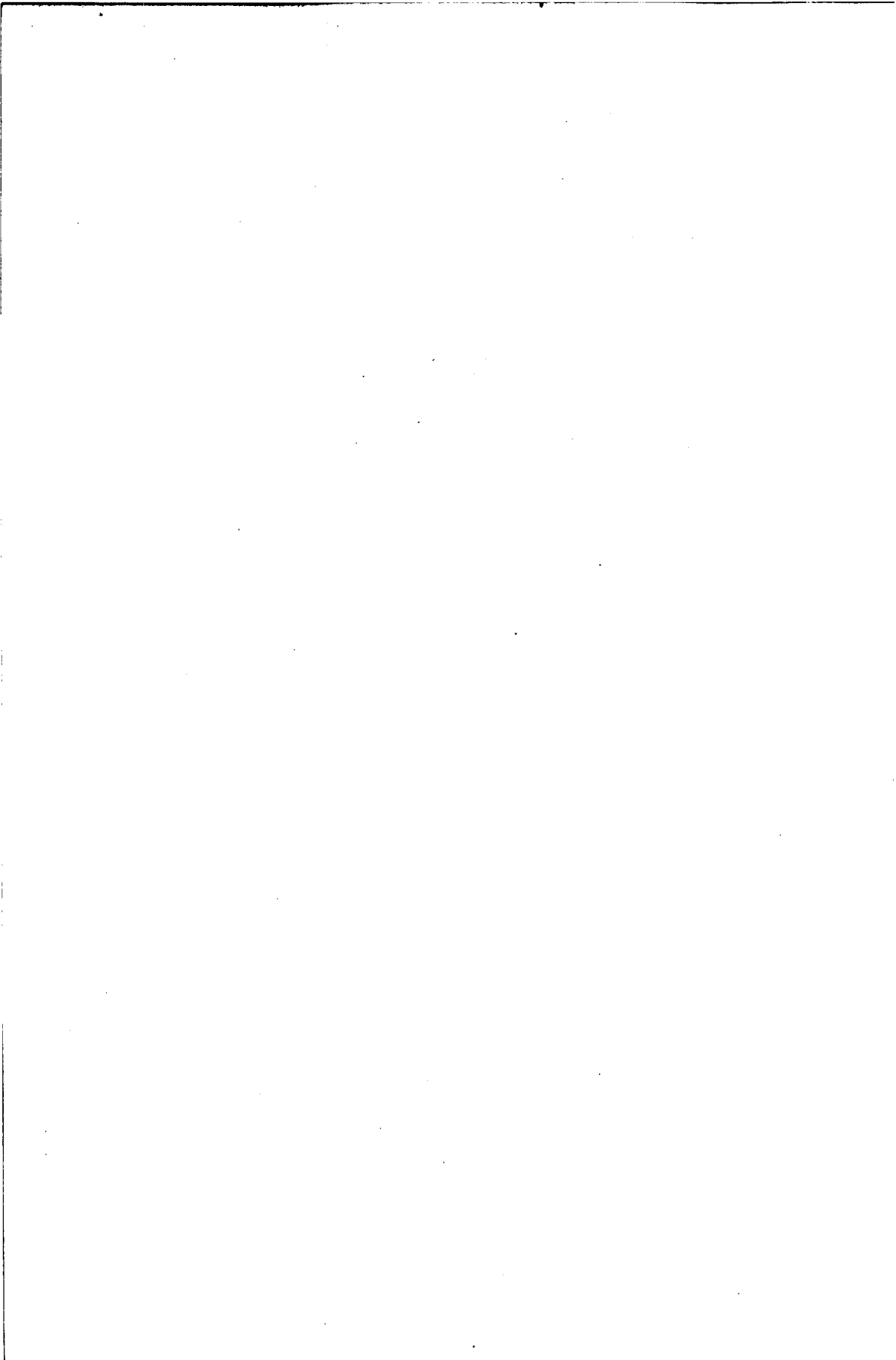
Site 185. The *tohua* of Fataha; situated in the bed of the valley a short distance behind the Catholic church. It seems to have been an unenclosed level space with a broad terrace two feet high along its upvalley side. A house had been erected on the southern end of this terrace.

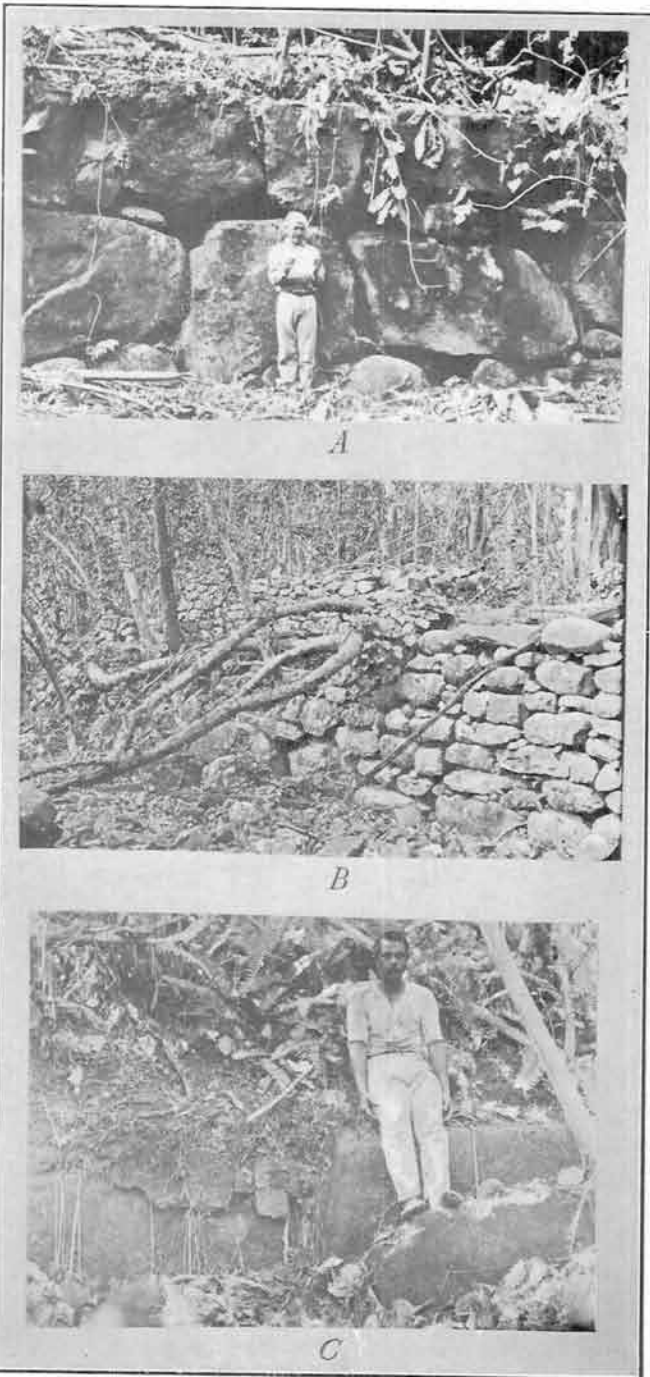
Site 186. The *me'ae* of Anainoa; located a short distance seaward from Site 185, with which it is said to have been associated. It is a long, narrow platform of small stones, now so broken as to be scarcely recognizable, probably not more than two feet high.

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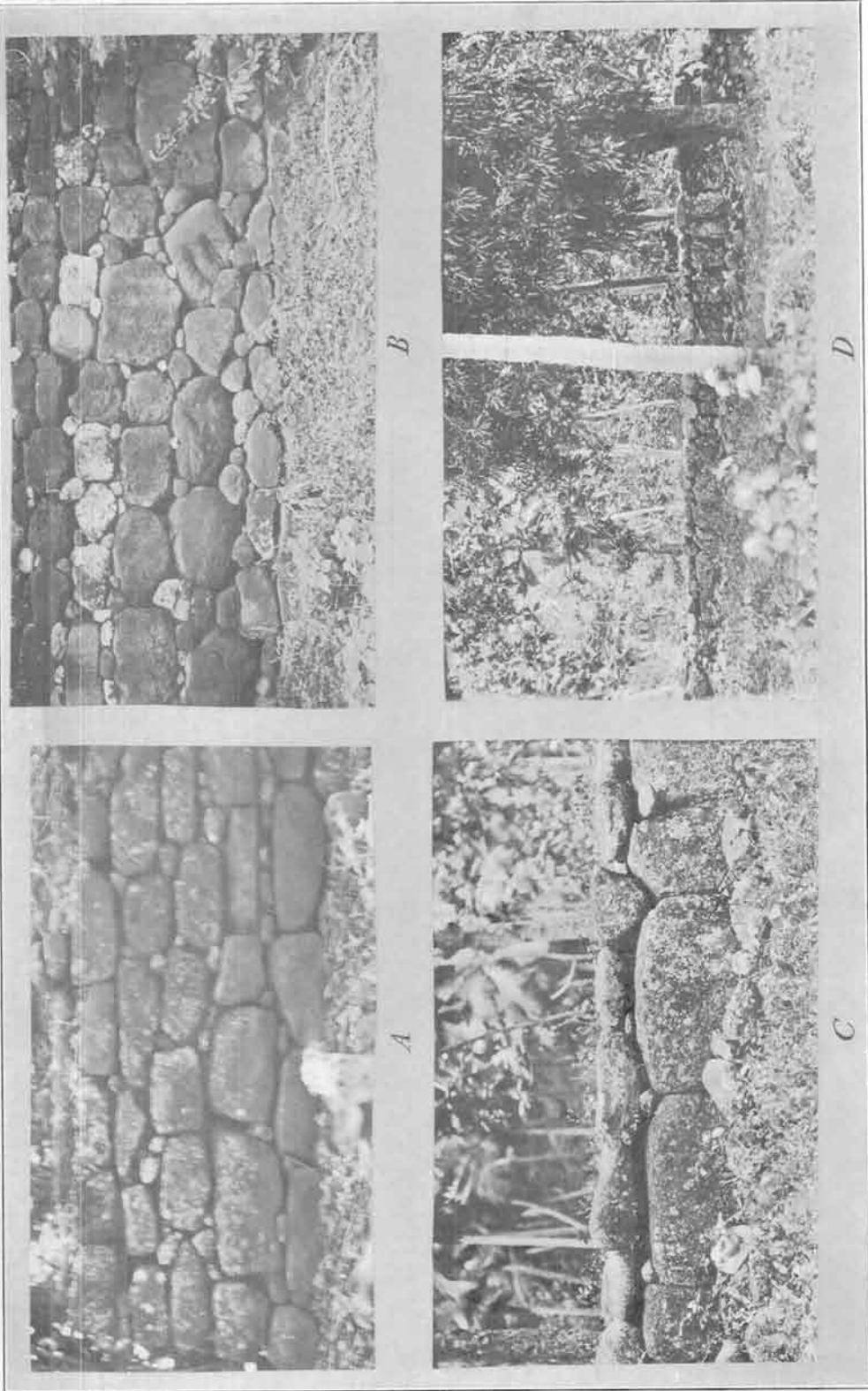
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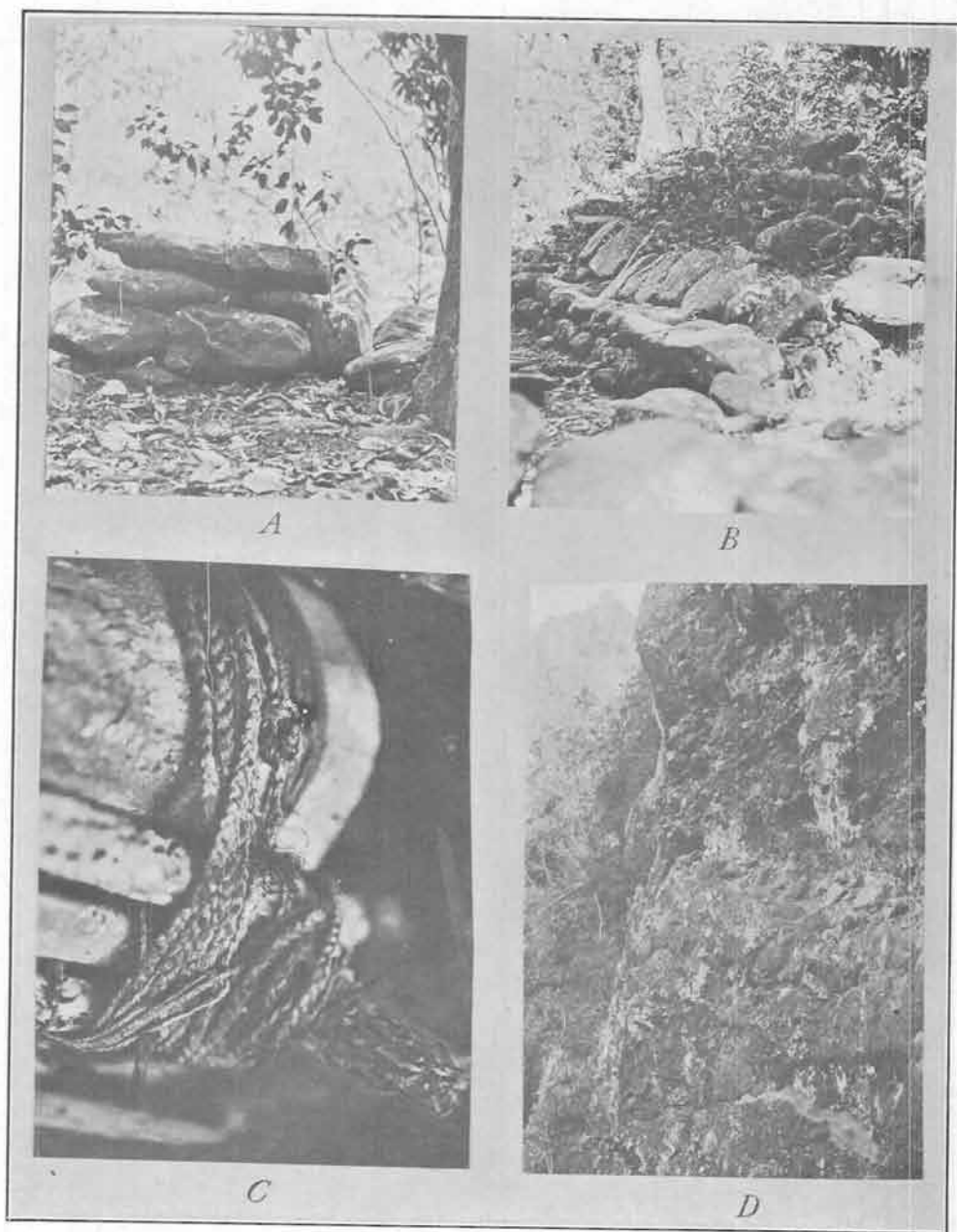




WALLS AND QUARRY: *A*, PAEPAE, TAIPIVAI VALLEY, NUKUHIVA; *B*, TERRACES OF A ME'AE, HAKAHETAU, UAPOU; *C*, SMALL QUARRY, UAPOU (*B* AND *C*, PHOTOGRAPHED BY E. S. C. HANDY).



WALLS AND PLATFORM: *A*, WALL OF HOUSE PAEPAE, ATUONA, HIVA'OA; *B*, WALL SHOWING DECORATIVE USE OF WHITE STONES; *C*, PLATFORM OF CUT STONES WITH STEPS AT BOTTOM AND BOWLERS AT TOP; *D*, PLATFORM OF CUT STONE WITH BOWLDER EDGING, TOHUA OF PEKELA, ATUONA, HIVA'OA.



PEDESTAL, SEATS, COFFIN, AND BURIAL PLACE: *A*, PEDESTAL FOR DANCER;
B, STONE SEATS, ATUONA, HIVAOGA; *C*, END OF COFFIN, SHOWING ATTACH-
MENT OF COVER; *D*, BURIAL PLACE ON CLIFF, ATUONA, HIVAOGA.



A



B



C

WOODEN FIGURES: *A*, FIGURE CARVED FROM SLAB OF WOOD, HANAMENU, HIVAOGA; *B*, WOODEN FIGURE, HANAMENU, HIVAOGA; *C*, LARGE WOODEN FIGURE, FRONT AND SIDE VIEWS, ATUONA, HIVAOGA.



A



B



C

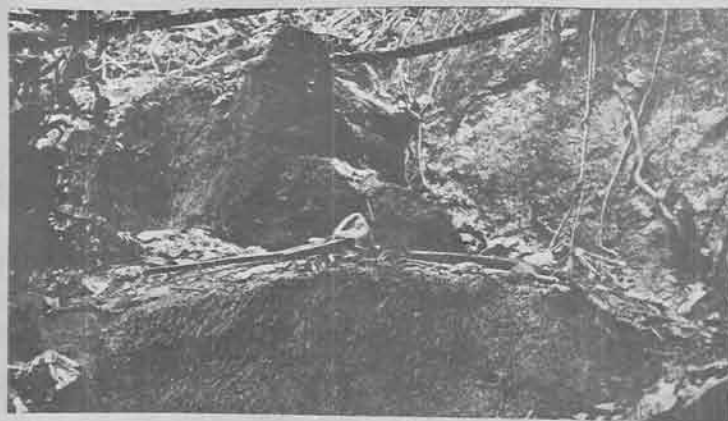
WOODEN FIGURES: *A*, FRONT AND REAR VIEWS OF LARGE WOODEN FIGURE, ATUONA, HIVAOGA; *B*, FALLEN WOODEN FIGURES, ATUONA; *C*, CARVED POSTS OF SACRED HOUSE, UAHUKA.



A

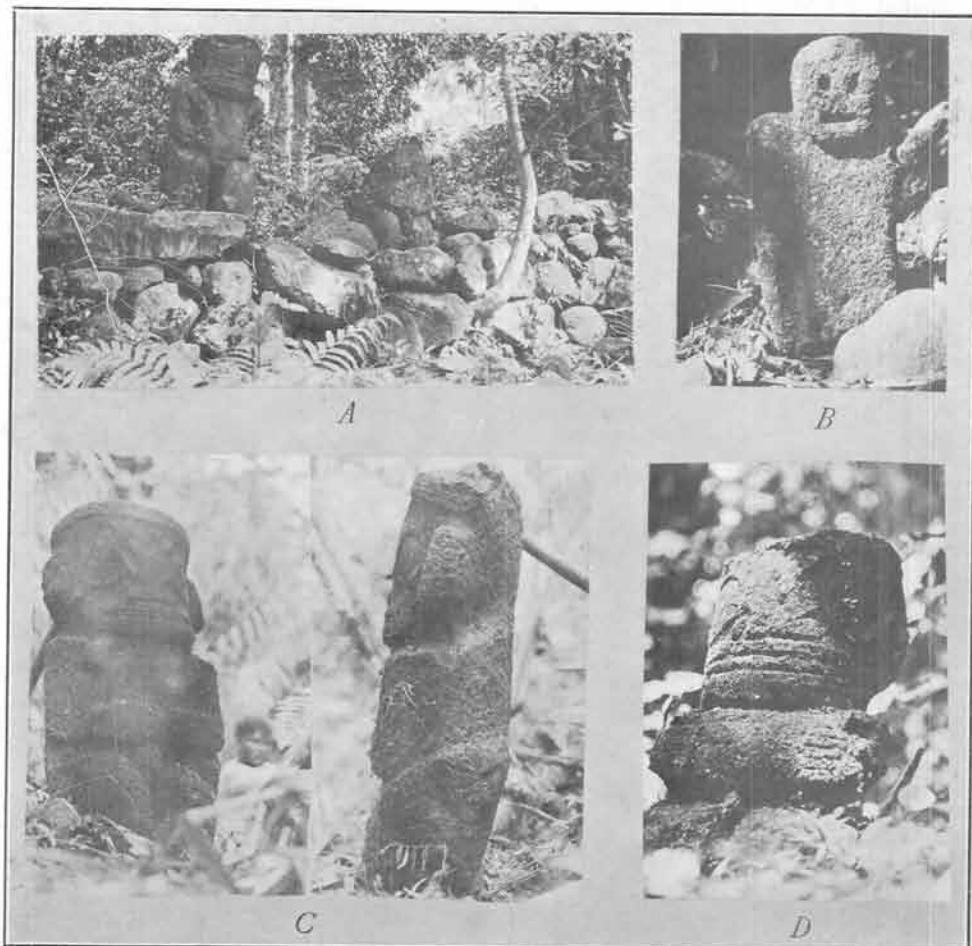


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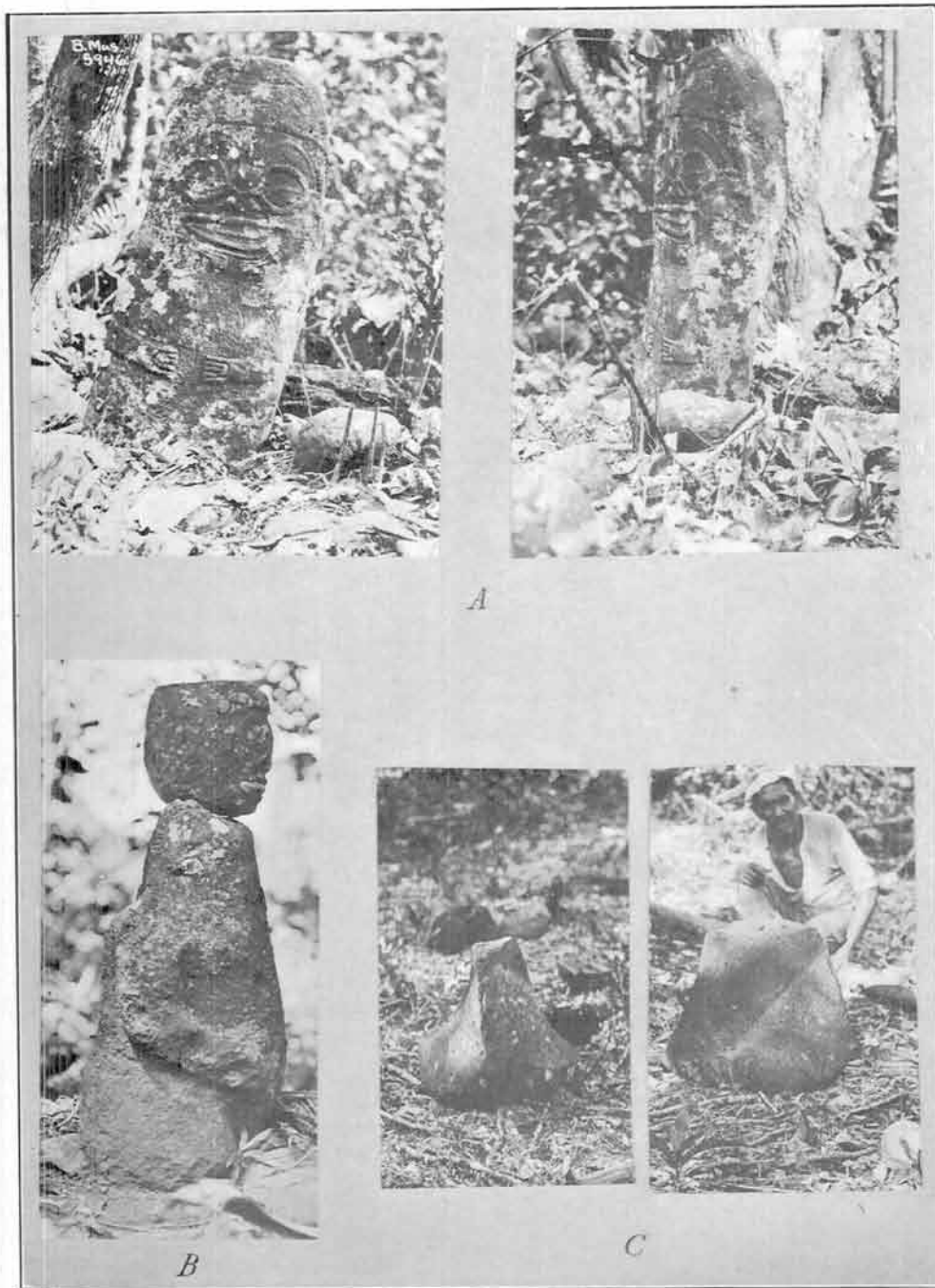


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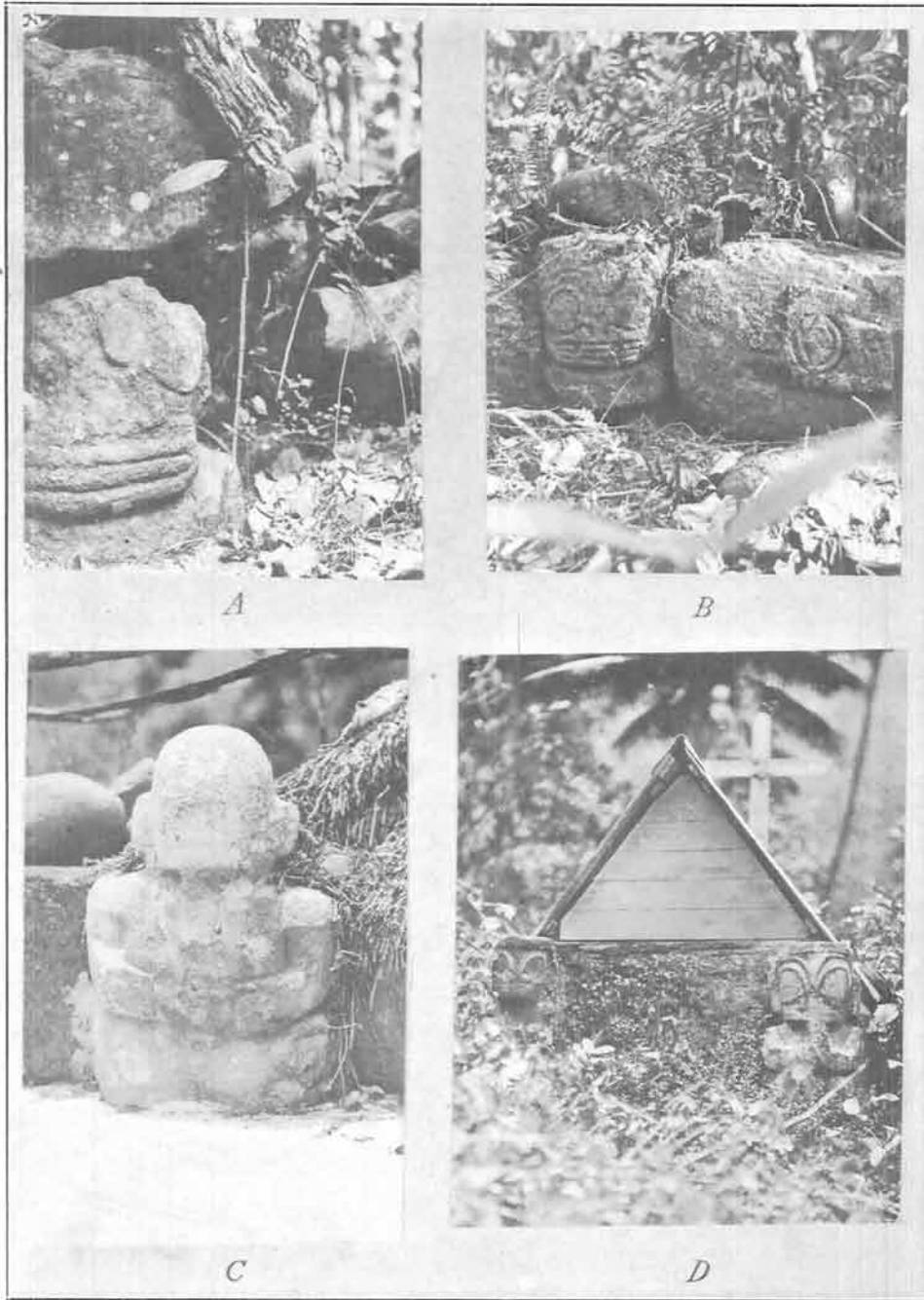
STONE FIGURES, PUAMAU, HIVAOGA: *A*, HEADLESS FIGURE; *B*, FIGURE OF PREGNANT WOMAN, ME'AE OF OIPONA; *C*, QUARRY FROM WHICH LARGE FIGURE HAS BEEN REMOVED.



STONE FIGURES: *A*, TAKAH and ANOTHER DEITY, ME'AE OF OIPONA, PUAMAU, HIVAOGA; *B*, SMALL FIGURE, TAAOGA, HIVAOGA; *C*, STATUE, FRONT AND SIDE VIEWS, UAHUKA; *D*, STATUE IN ME'AE OF POUAU, ATUONA, HIVAOGA.



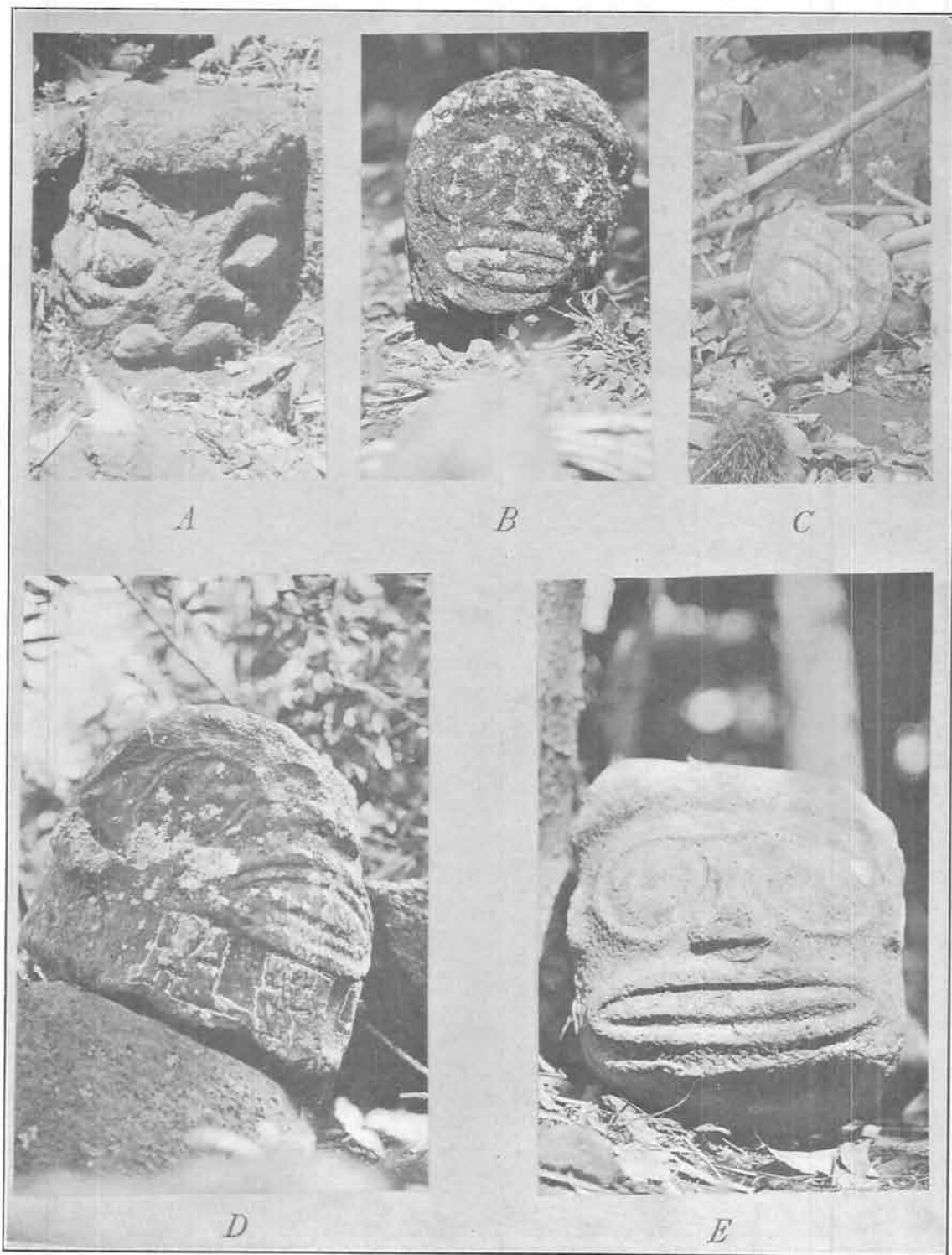
STONE FIGURES: *A*, CRUDE FIGURE, PUNAEI VALLEY, HIVAOGA; *B*, FIGURE OF UNUSUAL FORM, ATUONA, HIVAOGA; *C*, STONE CAP, END AND SIDE VIEWS, PAUMAU, HIVAOGA.



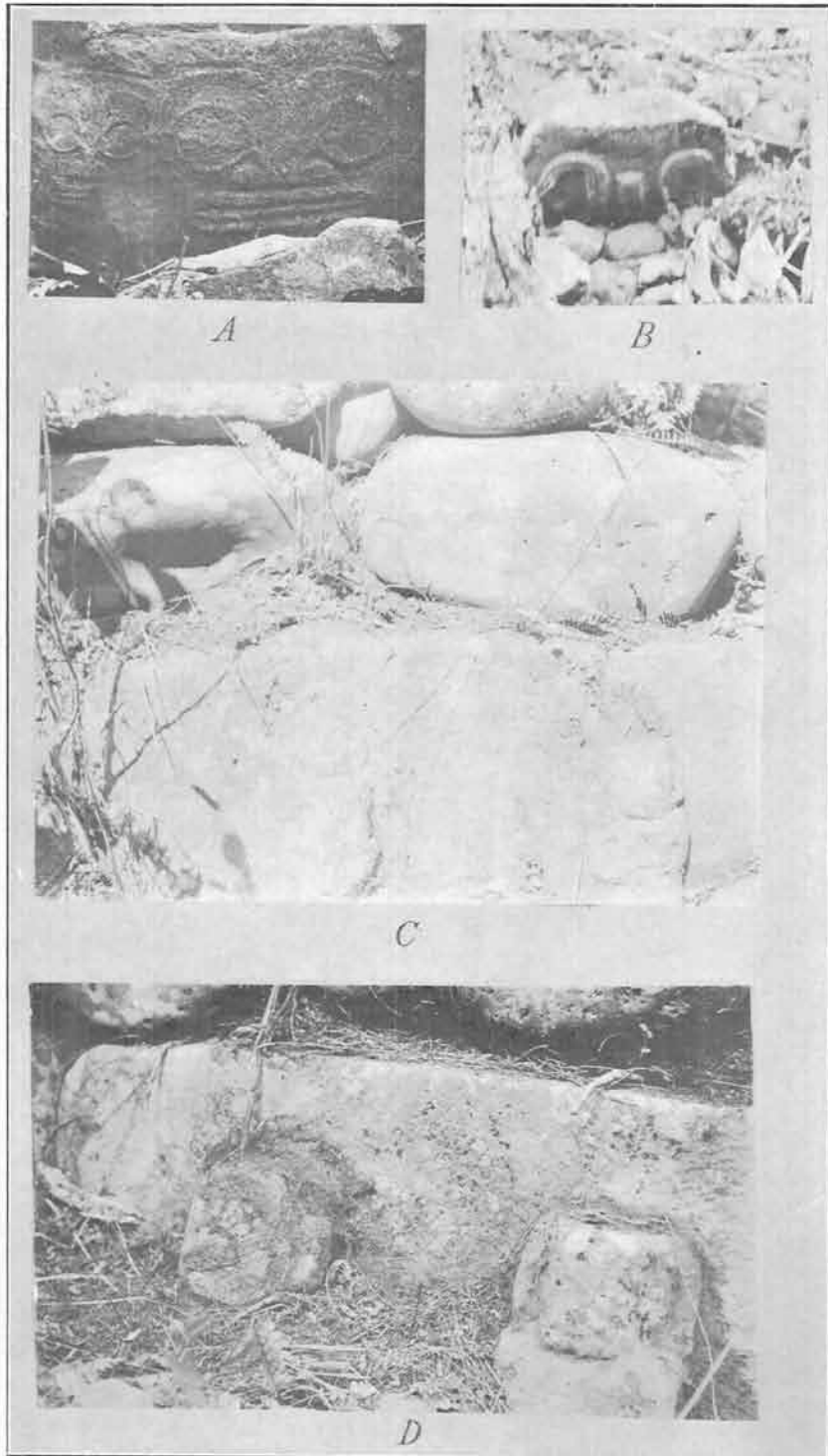
STONE ARCHITECTURAL FIGURES: *A*, UNFINISHED FIGURE IN WALL, ATUONA, HIVAOGA; *B*, FIGURE AND RELIEF, PUNAEI, HIVAOGA; *C*, UNFINISHED FIGURE, PUAMAU, HIVAOGA; *D*, MODERN TOMB DECORATED WITH OLD FIGURES, PUAMAU, HIVAOGA.



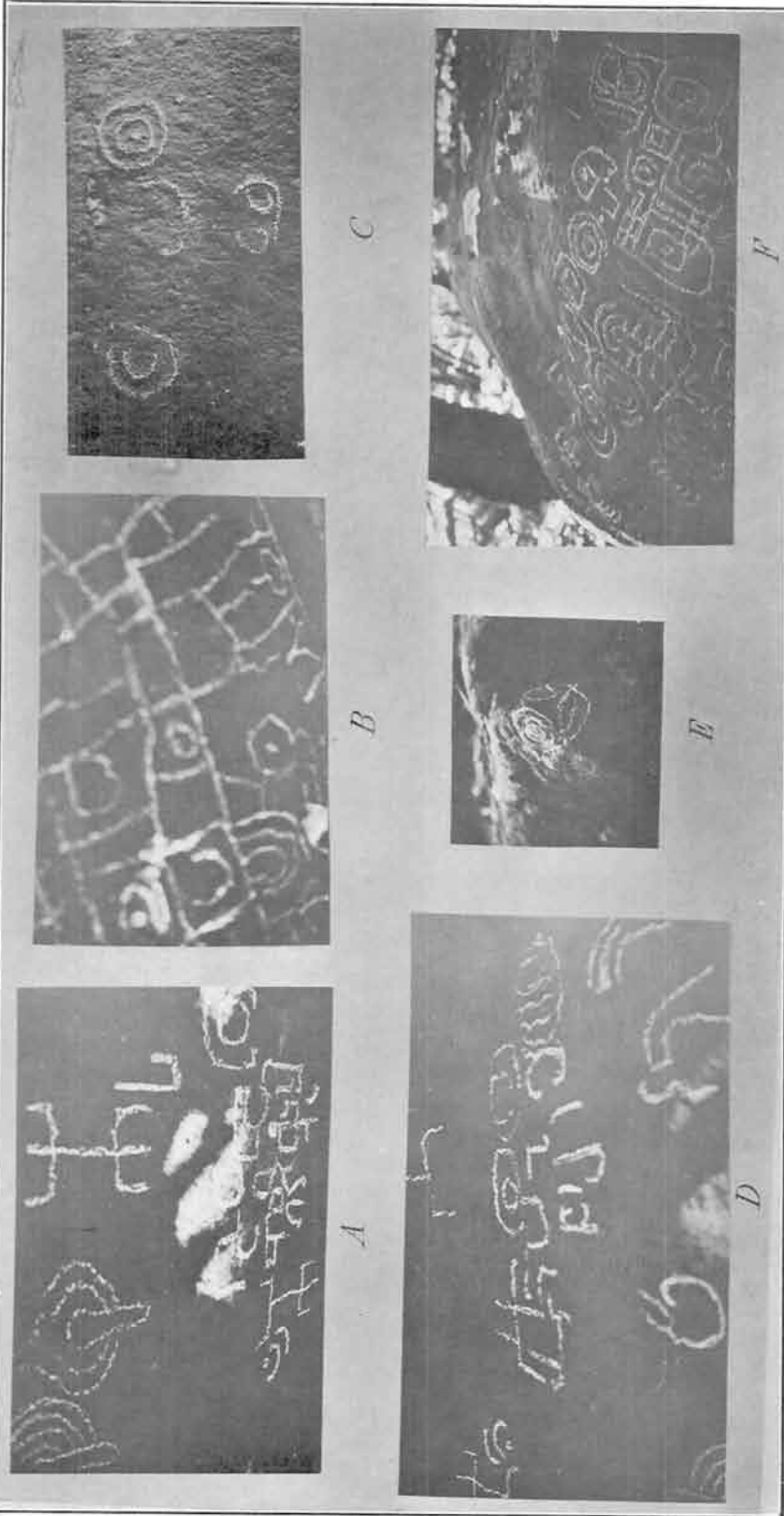
STONE ARCHITECTURAL FIGURES: *A*, *B*, FIGURES CARVED DURING EARLY HISTORIC PERIOD, PUAMAU, HIVAONA; *C*, CARVED STONE ALTAR, TAAOA, HIVAONA; *D*, CARVED SLABS IN WALL OF ME'AE OF AAHA, ATUONA, HIVAONA.



STONE HEADS: *A*, MANAVAI, HIVA O A; *B*, ATUONA, HIVA O A; *C*, FROM TAHUKU, HIVA O A, *D*, FROM PUAMAU, HIVA O A, *E*, FROM ATUONA, HIVA O A.



STONE CARVINGS IN RELIEF: *A*, FACES, EIAONE, HIVAQA; *B*, RELIEF FIGURE, HANALAPA, HIVAQA; *C*, AND *D*, FROM HANAPAOA, HIVAQA.



PETROGLYPHS: *A, B, D, F*, FROM HANAIAAPA, HIVA'AOA; *C*, FROM UAPOU;
E, AN ALTAR STONE ME'AE OF OI'PONA, PUAMAU, HIVA'AOA.



A

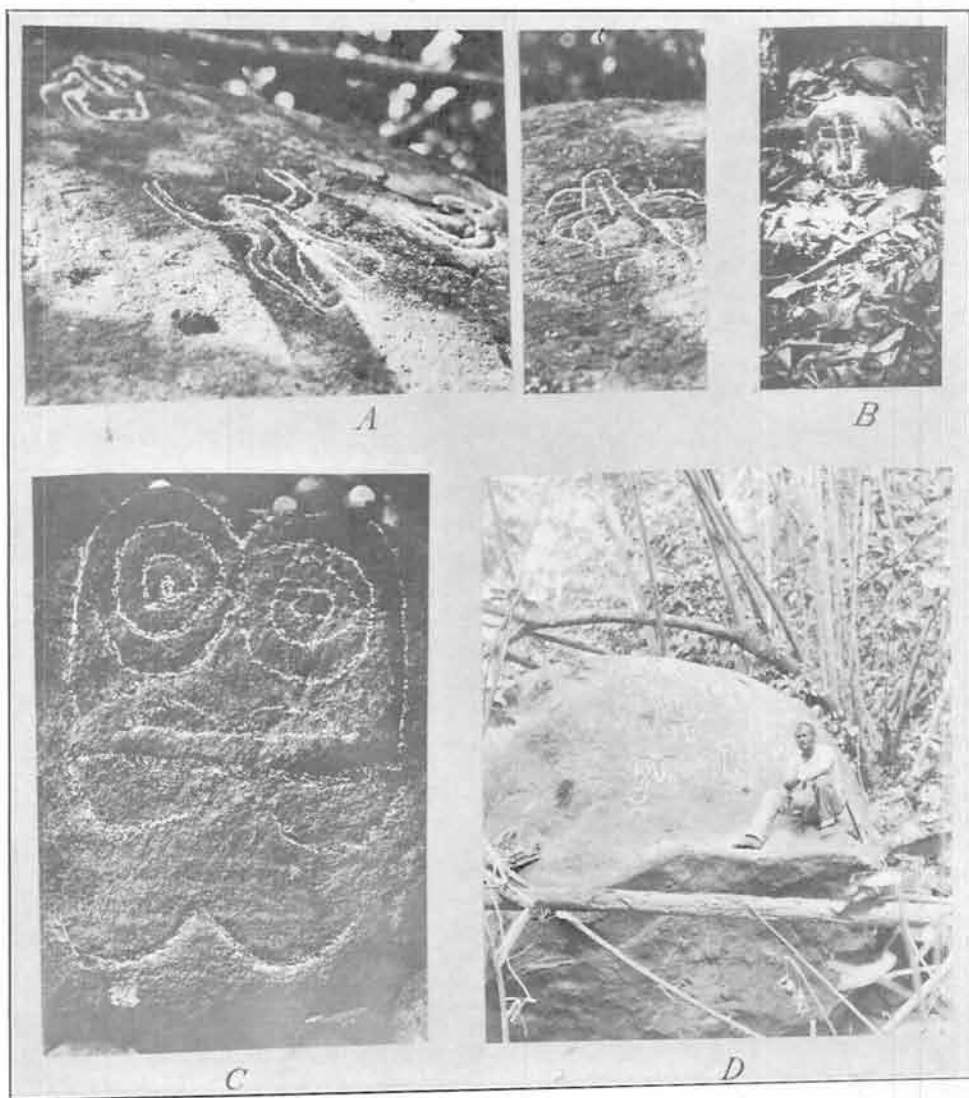
B



C

D

PETROGLYPHS: *A*, FROM UAHUKA; *C*, FROM HANAPAOGA, HIVAOGA; *B*, AND *D*, FROM EIAONE, HIVAOGA.



PETROGLYPHS: *A, C, D.* FROM TAHAAKU, HIVAŌA; *B,* HANAHUI, HIVAŌA.

