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FIELD MUSEUM OF NATURAL HISTORY

DEPARTMENT OF ANTHROPOLOGY

GUIDE

PART 6

ETHNOLOGY OF POLYNESIA
AND MICRONESIA

HALL F (Ground Floor)

BY

RALPH LINTON

Assistant Curator of Oceanic and Malayan Ethnology

1 Map, 59 Text-Figures, 14 Photogravures

BERTHOLD LAUFER

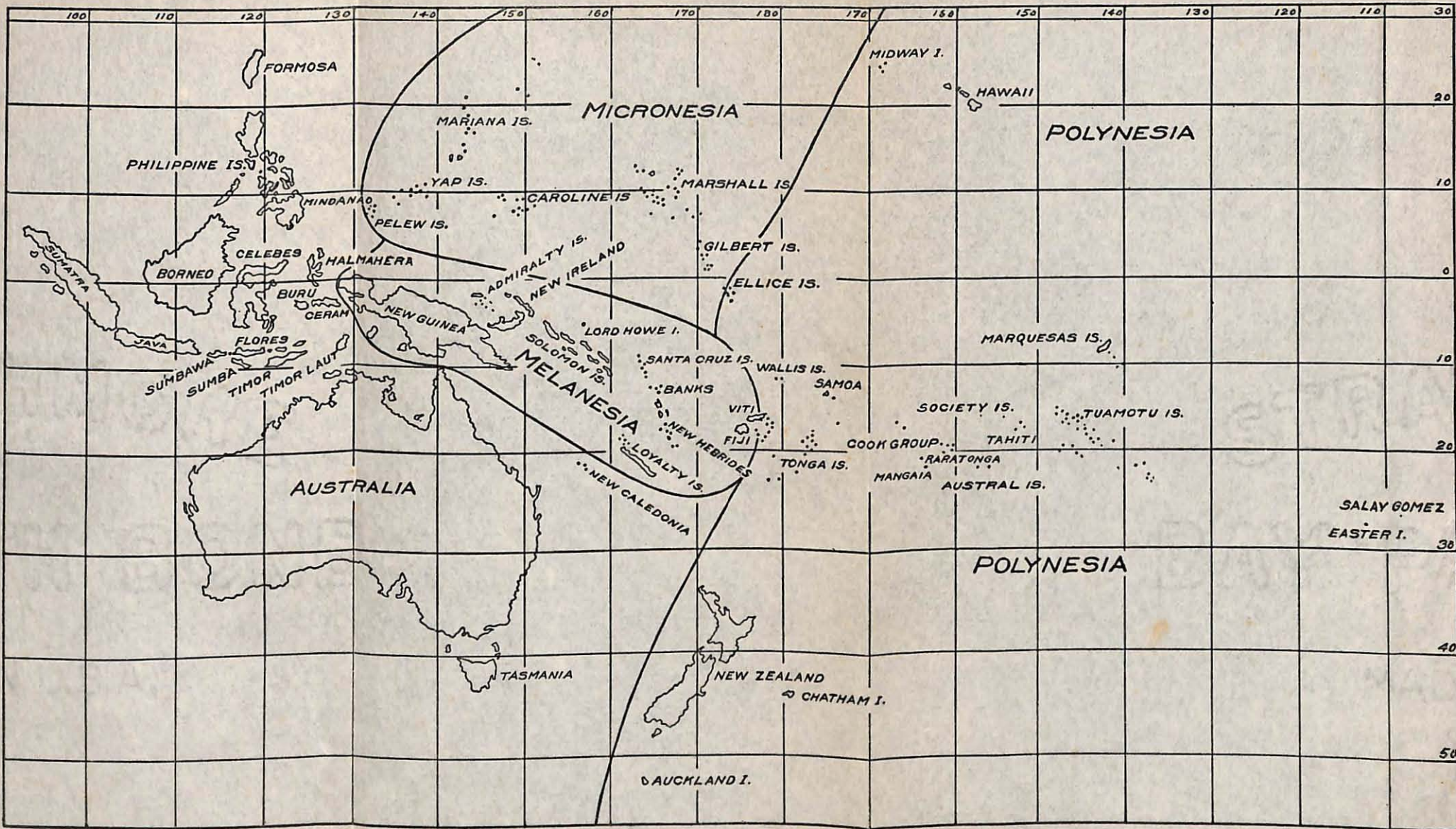
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OUTLINE MAP OF THE SOUTH PACIFIC.

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ETHNOLOGY OF POLYNESIA AND MICRONESIA

INTRODUCTION

The islands of the western and central Pacific, exclusive of the Philippines and Japan, are usually classified as belonging to one or another of three great divisions, — Melanesia, Micronesia, and Polynesia. These divisions are based partly on the geographic position of the islands and partly on differences in the race and culture of their inhabitants. Melanesia lies north and northeast of Australia. It includes New Guinea, the Admiralties, New Britain, New Ireland, the Solomons, the New Hebrides, New Caledonia, and Fiji. Most of the Melanesian islands are large and mountainous, New Guinea being one of the largest in the world. They are relatively close lying, and many of them were connected with one another and with the Australian continent by land bridges which survived until near the end of the glacial period. The fauna of the larger islands resembles that of Australia. The climate along the coasts is unhealthy, and the natives are much less friendly than those of either Micronesia or Polynesia so that much of the region is still imperfectly known. The Fijians, who are the easternmost of the Melanesians, have been strongly influenced by the Polynesians, and their culture is described in this guide.

Micronesia lies north of Melanesia, occupying the region between approximately 20 N. and 5 S. latitude and 130 and 180 E. longitude. It includes five groups, the Pelews, Carolines, Marshalls, Marianas, and Gil-

berts. The Pelews, Carolines, and Marshalls form a more or less continuous belt of islands extending from west to east in the order named for about three thousand miles. They are in about the same latitude as the southern Philippines. The Marianas lie north-north-east of the Carolines. Guam, an American possession, is near the southern end of this group. The Gilberts lie southeast of the Marshalls and form a connecting link between Micronesia and Polynesia. The Micronesian islands are all small, and are mostly coral formations. Their total area is less than 1400 square miles, and their population did not exceed 100,000 at the beginning of the historic period.

Polynesia is by far the largest of the three divisions. It has somewhat the form of a great crescent, five thousand miles from tip to tip and three thousand miles wide at its broadest point. This crescent faces west, its points extending far to the north and south of Micronesia and Melanesia and partially enveloping them. It includes the Hawaiian, Marquesas, Tuamotu, Society, Cook, Austral, Samoan, Tongan, Ellice and Union groups, New Zealand, and a great number of isolated islands two of which, Easter Island and Niue, are of great interest to ethnologists. Polynesia is a region of enormous distances. Hawaii, at the northern end of the crescent, is over two thousand miles from its nearest inhabited neighbor, and Easter Island is over a thousand miles from any other land. Most of the islands are small, their total area exclusive of New Zealand being only a little more than 10,000 square miles. All the more important ones are of volcanic origin. New Zealand, at the southern end of the crescent, differs from the other Polynesian islands in its great size and also in its temperate climate.

The Polynesian and Micronesian islands, except New Zealand, nearly all belong to one of the other of two great classes, high islands and low islands. The former are of volcanic origin, while the latter are the work of the coral polyps. A typical high island has a tall, central peak or mountain-range from which many deep, narrow valleys run down to the sea. There is almost no level ground in the interior, and the scenery is usually wild and fantastic. Between the mountains and the sea there is a narrow, more or less continuous strip of level land which has been built up partly by the coral polyps and partly by the wash from the mountains. Some distance out from this coastal strip there will be a coral reef, known as the fringing reef, and beyond this and separated from it by deeper water a second reef, the barrier reef, beyond which the ocean drops to great depths. Both barrier and fringing reefs usually have breaks opposite the mouths of the principal rivers. High islands are usually well watered, for their peaks catch and precipitate the rain clouds. On those which lie within the belt of seasonal rains each valley contains a clear, cold stream. The mountains are covered with verdure, and the valleys are choked with heavy growth. In the Hawaiian and Marquesan groups the growth is much less heavy. In Hawaii there are rain forests at a high elevation, but the lower levels are relatively dry, and are covered with scrub and grass. In the Marquesas, which suffer from long and destructive droughts, the uplands are covered with reeds and low fern, with occasional clumps of Pandanus and Hibiscus, where depressions have held the moisture. The Marquesan Islands also lack the coastal strip, fringing and barrier reefs, the mountains rising straight from the sea. In all the is-

lands which have a coastal strip, the population was concentrated upon it. Tribes that had been defeated in war often fled inland for a time, but the mountains were usually uninhabited, except for plume-hunters and fugitives from justice. This was due to the almost complete absence of food. There were few birds and no native animals, and the slopes were too steep for agriculture. The people of the coastal strip lived partly by cultivating the level ground there and in the valley bottoms, and partly by fishing in the shallow water about the reefs.

The low coral islands, called atolls, rest upon the tops of submerged mountains. When the top of such a mountain came within twenty or thirty fathoms of the surface, corals took root upon it and began to build a reef. The corals on the outside of the reef were better fed than those on the inside and grew more rapidly. By the time the reef reached the surface, it had the form of a ring or of a horseshoe with the opening on the side away from the prevailing winds and currents. The waves broke off fragments of the coral and piled them upon the reef until low islands were formed. Atolls are sometimes as much as eighty or ninety miles across, but a large part of their circuit is usually bare reef awash at high tide. The highest parts are rarely more than ten or fifteen feet above sea level or more than half a mile wide. There is often a gently sloping, sandy beach on the lagoon side of the island, but the seaward side is made up of lumps of rough coral. The white rock and sand reflect the sun, so that the glare is almost unendurable. The villages of the natives are nearly always built on the inner side of the island, facing the lagoon. They live almost entirely on fish and coconuts, and their life is much harder than that

of the natives of the high islands. In spite of this they are often of magnificent physique, and they are the only natives who have been able to hold their own and even increase in numbers since European contact.

Even the best of the high islands are relatively poor in natural resources. Their reefs afforded a good supply of fish, but there was no game except birds, and most of the native roots and fruits were not edible. All the animals and nearly all the plants of economic importance present at the time of the European discovery had been introduced by the natives themselves, and most of them were of Asiatic origin. There was usually an abundance of good timber and of stone suitable for implement-making, but there were no metallic ores. The soil was rich and would raise good crops, but there were few large areas suitable for agriculture. The low islands had no large timber, no stone for implements and almost no soil. The coconut and Pandanus were the only plants of economic value which would grow on them. A still greater difficulty was the absence of fresh water. The natives of the low islands were forced to rely on coconuts, on brackish water from shallow wells and on rain water which they collected by digging pits at the foot of coconut-palms and collecting the rain which drained from them.

The climate of all the islands except New Zealand is tropical or subtropical, but the heat is never oppressive. The nights are always comfortably cool, and are often quite cold at the higher altitudes. Many of the islands have dry and rainy seasons, but there is little change in the mean temperature throughout the year. There are no fevers, and the only serious diseases known to the natives in pre-European times were leprosy and elephantiasis. There are no poisonous rep-

tiles and few noxious insects, although many of the islands now suffer from a plague of mosquitoes. These are especially bad in some of the low islands, where they breed in the rain water collected at the base of the palm fronds. White men find the constant heat somewhat enervating, but Micronesia and Polynesia are probably the safest and pleasantest tropical regions in the world.

New Zealand stands somewhat apart from the rest of Polynesia. It consists of two islands separated by a channel so narrow that they form an almost continuous land mass. Their combined area is 104,471 square miles. The northern peninsula of the north island is subtropical, but the southern part has a temperate climate not unlike that of southern England. The south island is still colder, and is very mountainous with many glaciers. About half the total area of New Zealand was heavily forested at the time of the European discovery. There were no native mammals, but the bird life was fairly abundant, and the first native settlers found a great flightless bird, the moa. They hunted this for food and finally exterminated it. The geological formations are quite varied; there are even some metallic ores, although the natives never learned to work these. Their finest implements were made from nephrite, a variety of jade. This material is extremely hard and tough; tools made from it are scarcely inferior to those of metal. Much of the New Zealand nephrite is of fine green color, and the best of it was fashioned into beautiful ornaments. It is said that samples of nephrite were carried back to Central Polynesia by the first native explorers and that the desire for this precious material was one of the main motives in the migration to New Zealand from that region.

The climate and natural resources of New Zealand produced profound changes in the culture of the settlers who came to it from Central Polynesia. Only one of their food plants, the *kumara*, a kind of sweet potato (*Convolvulus chrysorrhizus*), could be grown profitably, and the paper-mulberry, from whose bark they made their clothing, would only live in the northern peninsula, and did not flourish there. They eked out their food supply with the starchy roots of a native fern and learned to make warm garments from the fibre of the *Phormium tenax*, commonly called New Zealand flax. They abandoned their flimsy thatched houses and developed new types better suited to the climate. The abundance of fine, hard woods led to a remarkable development of wood-working and carving and to the almost complete abandonment of stone construction. They acquired an energy and force of character rarely found among their tropical relatives, and became not only the best of the Polynesians, but one of the finest races in the world.

SETTLEMENT OF THE ISLANDS

There are a great many different theories of Oceanic settlement. Nearly every student of the region from the days of Captain Cook to the present time has had his own ideas on the subject. Most of the theories advanced have been based on a single class of evidence, such as language or traditions, and none of them is entirely satisfactory. The problem is an extremely complex one, and no final solution will be possible until we have much more complete data. The Polynesians have a wealth of migration legends, but those dealing with their entry into the region are full of marvelous incidents, and most of the places named in them can no longer be identified. Their oldest authentic traditions do not go farther back than A.D. 500, and most of them refer to voyages between groups which were already known and at least partially occupied. The Micronesians also have stories of relatively late movements within the area, but the Melanesians seem to have lost all memory of their migrations.

Melanesia was no doubt the first of the three regions to be occupied. At the close of the glacial period many of its islands were connected with the Australian continent, while the Indonesian islands were connected with Asia. The sea separating these two land masses was narrow enough to have been crossed by men who knew the rudiments of navigation. The first Melanesian settlers may have been in the palæolithic stage of culture, for the Tasmanians were still in it at the time of their discovery, and the Australians had

progressed little beyond it. The race of these first inhabitants can only be conjectured, but it seems certain that Negroid peoples entered the region at a very early time, and were thoroughly established there before any large scale penetration of Polynesia and Micronesia began.

The Micronesian and Polynesian islands have never been connected with any continent. Only races of fairly advanced culture could have made the long voyages necessary to reach them, and they were probably the last part of the habitable earth to be occupied. The first Polynesian settlers seem to have been of Negroid race, corresponding to type (1) of the historic races. They entered the region from Melanesia. Their eastward migration may have been largely involuntary for their descendants, although they build good canoes, are timid sailors, and will not put out into the open sea. Perhaps they entered Polynesia at first as castaways who had been swept eastward by cyclonic storms. They established themselves in Tonga, Samoa, Niue, and the Cook, Austral, Society and Tuamotu groups, but it is doubtful whether they reached the Marquesas or New Zealand, and it is fairly certain that they did not reach Hawaii. They probably settled some of the Micronesian groups as well, but it is impossible to tell the extent of their occupation.

The next people to reach Polynesia were probably the short, dark, round-headed race designated as type (2). The historic distribution of this type suggests that it was the first to occupy the Marquesas and Hawaii, but it has left few traces elsewhere; it probably failed to make much impression on the islands which were already occupied by the Negroid people.

The third race to appear on the scene seems to have been the long-headed Caucasian stock designated as type (3). There are many traces of this race in the Philippines and in the larger Indonesian islands. It was probably an old southeastern Asiatic stock. These newcomers seem to have been fairly good navigators, and may have been the first of the Oceanic peoples deliberately to explore and colonize. They entered the Pacific through the gap between the southern Philippines and New Guinea, and apparently split into two streams one of which travelled eastward through Micronesia, while the other coasted southward along New Guinea and the islands immediately to the east. The climate of these islands was unhealthy; they were already well populated so that this wing of the migration was largely absorbed or dissipated before it reached Polynesia. It left many traces of its blood and culture in Melanesia, and may have been responsible for the development of the Melanesian, as distinct from the Papuan, languages. Some of the emigrants who had taken the Micronesian route seem to have gone on eastward to Hawaii, while others turned southward into western and central Polynesia. There they found the Negroid race already in possession and intermarried with it, producing a hybrid population. This mixed race seems to have developed a distinctive type of culture, which was eventually carried to the Marquesas and New Zealand and survived there, in modified form, until the beginning of the historic period. A group of the mixed race in whom the Negroid strain was dominant discovered and colonized Easter Island.

At a later time, probably not much before the beginning of our era, a fourth race entered the region.

These people, type (4) of the historic races, were the Vikings of the Pacific. They seem to have reached Polynesia by way of Micronesia, arriving first in Samoa and Tonga, but they rapidly extended their voyages over the whole area. Most of the Polynesian migration-legends apparently deal with their movements or with those of groups who had learned their navigation methods and had been set in motion by them. Some of their voyages covered amazing distances. Ui-te-rangiora, a great Rarotongan navigator, sailed southward from that group until he encountered the icebergs of the Antarctic. They repeatedly sailed from Tahiti to Hawaii and from Rarotonga to New Zealand. Polynesian traditions make it possible largely to reconstruct the equipment and methods of these daring navigators. They used great double canoes, sometimes as much as 150 feet long, made of planks sewn together with coconut fibre. The space between the two hulls was decked over and bore a small house. There were either one or two masts with sails of Pandanus matting. They are probably to be credited with the introduction of the lateen sail which made it possible for them to run closer to the wind than the best European square-rigged ship.

Their stores were baked bread-fruit paste, sweet potatoes, and coconuts. They caught the bonito and other fish of the open sea. Water was carried in gourds and wooden vessels, but they relied mostly upon rain. They steered by the stars and by the long Pacific swell, and were experts at holding a course. Whole tribes sometimes set out in search of new homes, taking with them their gods and the plants and animals which would be needed to found a colony. On such expeditions the fleet spread out into a great

crescent with four or five mile intervals between the canoes, thus sweeping a wide expanse of sea. A sharp lookout was kept, and particular attention was paid to the flight of birds. Those which were known to sleep on land were sometimes caught, fed and released, the voyagers following the direction of their homeward flight. If the first land encountered by the fleet was undesirable, perhaps a barren atoll, they would rest for a time and revictual, and then put out to sea once more. When they found inhabited land, they conquered the natives if they could. If they were too weak for this, they tried to ally themselves with some one tribe and aided it against the others. By the beginning of the historic period they had established themselves as rulers in most of the Polynesian islands, and had largely replaced the earlier races in Samoa, Tonga, and the Cook and Society groups.

Many of the legends which deal with voyages within Polynesia are supported by the genealogical records kept in the various groups. It is possible from these to date approximately some of the later movements. During the period between A.D. 1000 and 1300 there were a series of migrations from the Society group to Hawaii which seem to have strongly influenced Hawaiian culture and to have brought about certain changes in the language and physical type. The Hawaiians evidently looked upon these immigrants as a superior stock. Many of their historic chiefs traced their descent from them. Between A.D. 1250 and 1350 there were many voyages from the Cook and Society groups to New Zealand culminating about the year 1350 in the great *heke* ("migration") from Rarotonga. Most of the historic Maori traced their descent from individuals who came during this

period, although there can be no doubt that New Zealand was known and inhabited at a far earlier time.

The last people to pass into the Pacific were of Mongoloid type, much like the present Malays. They penetrated western and central Micronesia, but apparently did not reach Polynesia in any strength.

FOOD

The Polynesians and Micronesians were primarily fishermen. There was almost no game, and agriculture was possible only in favored localities. Their staple diet was sea food. It was a calamity for any tribe to be cut off from its fishing grounds. Crabs, shell-fish, and other slow moving forms were caught by hand. The natives of both sexes were expert swimmers, and this was usually women's work. The octopus was a favorite food. Living in holes in the coral, it was gathered by divers who thrust a stick into the middle of its arms. The animal twined itself around the stick and could then be drawn out. It was also caught with a special type of long-shanked hook to which a cowrie-shell was attached as a lure (Fig. 1).

The pearl-oyster was of great importance in the low islands, its flesh being used for food and its shell for a variety of implements and ornaments. It was gathered by divers who went as deep as 120 feet. For three days in every year the western Polynesian enjoyed a special delicacy, the palolo worm (*Eunice viridis*). This curious animal spends its life in a burrow in the coral reef. Once a year, when its eggs are ripe, the rear half of its body breaks away and swims rapidly to the surface, where it bursts, scattering the eggs. This happens to millions of the worms simultaneously, and the bodies rise in swarms. The natives caught them in nets and roasted them. The time of the rising can be accurately forecast. In Samoa the palolo rises in late October or early November on the day before, the day of, and the day after the last

quarter of the moon. This was always a time of feasting, for the worms had to be eaten as soon as caught.

The natives had a thorough knowledge of the local fishing grounds, which often included banks many miles from land, and knew where each species of fish was to be obtained, the proper bait for it, etc. There

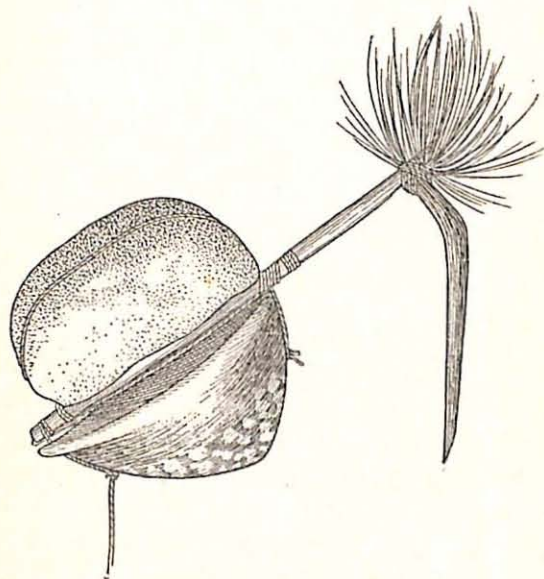


FIG. 1.

Octopus Hook of Wood with a Heavy Stone Sinker.
The octopus twines its arms around the shell, and is impaled by a sharp jerk.
Hawaii. Case 35.

were many edible kinds, but there were others which were poisonous and certain species which were good during certain months and deadly at others. In some islands a single species might even be edible in a few places and poisonous elsewhere. There were a great variety of fishing appliances. In the Carolines and Gilberts weirs of coral rock, sometimes supplemented

by cane work, were built in shallow water, and the fish herded into them at high tide. Simple stone weirs were also used in the Society and Tonga. Basketry fish traps were widely used. Ropes of coconut-palm fronds, sometimes as much as half a mile in length, were used in shallow water. The rope was laid out until a wide area had been enclosed. It was then gradually drawn in, driving the fish together into a small area, where they were speared or netted. In the Carolines and Marquesas, and perhaps elsewhere, tide pools, caves in the reef, and other confined areas were poisoned with certain plants. The poison stupified the fish and made them rise to the surface, but did not injure their flesh. The Gilbert Islanders were expert at noosing fish, catching eels and even sharks in this way. The noose was attached to a long pole, and another pole with bait on the end was used to entice the victim into it (Fig. 5). The practice of spearing fish was universal. The spearsmen lured them to the surface at night with torches, and in daytime often swam after them, following their movements under water. The ordinary fish-spear had a cluster of long-barbed points (Fig. 6). In the Marquesas the giant ray, which sometimes attains a width of fifteen feet, was taken with harpoons which had detachable heads. In that group and Samoa fish were also shot with the bow and arrow.

Nets were used everywhere. They were commonly made from Hibiscus bark which was scraped, shredded, and rolled into cord between the palm of the hand and the bare thigh. Very strong nets for turtles or shark were sometimes made of coconut fibre, and the New Zealanders used the native flax. The netting needles were of wood, and were shaped much

like the European ones. Nets were of all sizes and many forms, depending on the use for which they were intended. Seins were used everywhere, and were sometimes over 100 feet long and 10-20 feet wide. They were provided with floats of light wood and were

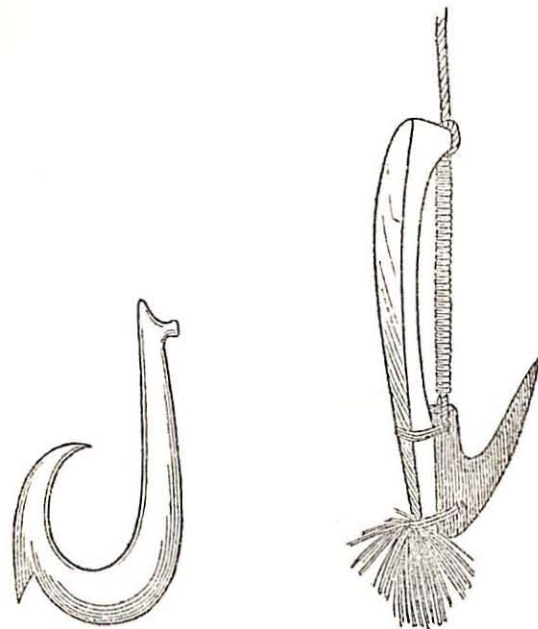


FIG. 2.

2. Fish-hook of Whale Ivory. Hawaii. Case 35.

FIG. 3.

3. Fish-hook and Line. The shank of the hook is made of pearl-shell; the barb, of tortoise-shell. Sotoan, Caroline Islands. Case 7.

weighted with stones, pieces of coral, or large shells. The central float of the Maori seins was often highly ornamented, and carved stone sinkers, probably net-weights, are found in both the Marquesas and northern New Zealand. The Maori also had very large funnel-shaped nets, sometimes as much as 25 feet in

diameter at the mouth and 75 feet long. The Marquesans did most of their communal fishing with a

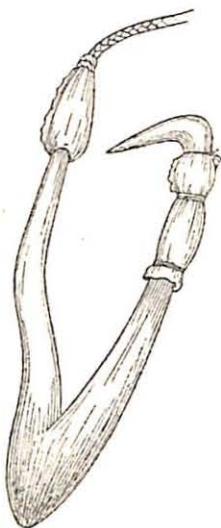


FIG. 4.

Fish-hook for Catching the Ruvettus, a Variety of Pelagic Mackerel.
Union Group. Case 1.



FIG. 5.

Eel Snare.
Gilbert Islands. Case 5.



FIG. 6.

Wooden Fish Spear with Prongs of Hard, Heavy Wood.
Peculiar to Matty and Durour. Case 11.

large bag-shaped net which was alternately raised and lowered between two canoes. Its sides sloped inward

to a small central pocket in which the fish were collected. Smaller bag nets whose mouths were held open with hoops or cross pieces, or which could be closed with a draw string, were used everywhere. They were lowered to the bottom with bait inside and drawn up when the fish entered. The Marquesans had an ingenious method for catching parrot-fish. These fish live on mollusks, and each one has a section of reef which he patrols, driving off intruders of the same species. A bag net with a live parrot-fish tethered to its centre was drawn slowly along the reef. Other

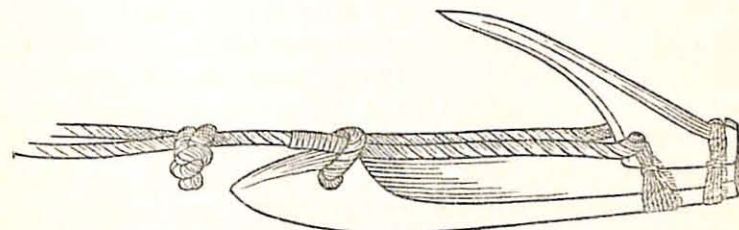


FIG. 7.

Fish-hook of Shell.
Society Islands.

parrot-fish would come out to attack the intruder, and both would be drawn up. Long-handled dip-nets were in universal use for small fish. Light ones on very long poles were used for catching flying fish at night. They were lured by torches and netted on the surface or in the air. Their flight is very rapid, and as the fishing canoes were narrow and cranky, it required a good deal of skill both to catch them and to avoid capsizing. Casting nets whose edges were weighted with small stones or shells were important in Hawaii, but seem to have been little used elsewhere.

Hooks and lines were universally used (Figs. 2, 3, 7). One-piece hooks were usually made from

pearl-shell, the gleam of the shell serving as a lure and making bait unnecessary. They were rarely barbed, and the points of some of them were so sharply recurved that it is hard to see how the fish could have taken them. One-piece hooks were also made of bone and whale ivory (Fig. 2). The Easter Islanders had stone fish hooks. Large and finely made hooks were sometimes worn as ornaments, especially by the natives of the low islands. There were many types of compound hook. The commonest was made from a strip of pearl-shell painted at the thick end and with a bone point fastened on the inner surface of the thin end. A bunch of hair or fibre was often attached at the base of the point. Human bone was frequently used for the point, that from the jaw being preferred. Hooks of this type were used for trolling, and the fish would not take them unless the shell was of proper color. Experienced fishermen usually had several of different shades which they used according to the light conditions.

The Maori, who had no pearl-shell, used a similar hook with a wooden shank inset with a strip of haliotis shell on the side toward the point. They also used a compound hook with a stone shank. In western Polynesia and Micronesia the points were often made of tortoise-shell. Compound hooks for large fish, such as sharks, were made from wood with bone points. A special variety of hook with a narrow opening and a small, recurved, bone barb were used in Micronesia for catching the *Ruvettus*, a large pelagic mackerel (Fig. 4). Pandanus thorns, which are slightly curved naturally, were used as hooks for very small fish in the Marquesas. Small double-pointed slivers of bone were used as a substitute for hooks in

many localities. They became wedged in the fish's throat or stomach and held better than hooks. They were often employed with set lines.

Everywhere there were ceremonial observances connected with fishing. These varied considerably in the different groups, but those of the Maori will give some idea of their number and general nature. Among them no new net could be used until an invocation had been uttered over it. Men carrying the net to the canoe had to be naked for fear that a morsel of cooked food might have touched their garments and so defiled them. If an expedition was about to set out with hook and line, all the hooks were collected the night before and made efficient by charms. No cooked food could be carried in the canoe. It was forbidden to cut up any of the freshly taken fish for bait. The expedition was usually accompanied by a priest who invoked the aid of some god. The first fish caught was put back into the water after being charmed so as to induce plenty of its fellows to bite. The next fish caught was reserved as an offering to the gods, and the priest took charge of it. When the party returned to land, three ovens were prepared, one for the gods, in which the first fish taken was cooked, one for the chiefs, and one for the people. The latter were allowed to eat as soon as the priest held up one of the fish before a sacred place and uttered an invocation.

In the Marquesas the fishermen of each village had a special sacred place presided over by priests who also superintended the actual fishing procedure. A number of small houses were built within the sacred area, and the fishermen slept there during the entire time that they were engaged in the work. Their food was brought to them. They were especially forbidden

to have any contact with women. Each sacred place had a number of small stone images in the shape of fish. One of these was exposed at a time, the others being buried in the ground. An image was appealed to as long as it brought good luck, but if the catch failed, it was buried, and another dug up and used. In the Island of Yap, in the Carolines, the fishermen were also segregated during the time they were working. Only communal fishing, such as the drawing of the large nets or expeditions to distant banks, was surrounded by such elaborate rules. There was everywhere a good deal of individual fishing by both men and women, and this was much less regulated. Fishermen often had personal charms or fetishes which they believed brought them luck.

There was very little hunting anywhere in the region. The Micronesians sometimes captured birds for their plumage, but they did not even hunt the chicken, which was found wild in the Pelews and Gilberts. The Gilbert Islanders captured the frigate bird by means of a bolas. This was a pear-shaped piece of stone or *Tridacna* shell attached to a thin cord of plaited coconut fibre 70 to 80 feet long. The other end of the cord was finished with a loop which was slipped over one of the fingers. A tame frigate bird was tied to a person to serve as a lure, and when a wild one approached, the hunter threw his bolas over it, entangling it and bringing it down. Only chiefs practised this sport, and often kept specially trained bird-catchers. Birds were the principal game in Polynesia also. In Tonga chicken-hunting was a sport of the chiefs. The birds were caught with nets on the end of long poles, tame birds being used as decoys. The Marquesans also caught certain species of sea

birds with long-handled nets. There were a few narrow passes through which the birds flew in going from one side of the island to the other. The hunters concealed themselves there and netted them as they dashed by. The Maori captured shearwaters and petrels by means of a large net set back a little way from the edge of the cliff. On foggy nights the birds were lured into this with a fire and killed with sticks. Bird snares were used everywhere in Polynesia; and in many of the islands bird-lime, made from the sap of the breadfruit tree, was also employed. It was smeared on short sticks which were then placed in trees where the birds fed.

The Maori captured pigeons with very long, slender spears, slowly working them up through the branches and finally impaling the bird with a quick thrust. They also had an amusing method of capturing parrots. The hunter built a small leaf-hut and set up beside it a slanting pole about twenty-five feet long. He then hid in the hut and tethered a tame parrot outside. The decoy was trained to call and bite things on the ground until a flock of wild birds came. They would alight on the sloping pole and begin to walk down it to the ground. As each bird came abreast of the hut, the hunter reached out, drew it in, and trod on its head. A whole procession of parrots would be lured to their doom in this way.

Bird's eggs were eaten in season, but seem to have been unimportant except in Easter Island. There was a cult centering about the taking of the first egg of the sooty tern. This was a migratory bird which arrived in great flocks and nested on a barren island off shore. The more important men in the clan dominant at the time sent representatives to the island

to await the arrival of the birds. The man whose representative found the first egg held office as Bird Man until the next season. He lived in a special house, was fed by the people, and did no work. A bird-headed human figure was carved as a memorial to him, and at death he was buried in a special sacred place. Curiously enough, the clan to which he belonged could not eat the eggs that season, although they were freely eaten by all the others.

The only wild animals in Polynesia were the lizard and rat. The latter may have been introduced by the natives. Rats were everywhere prized as food. They were usually snared, but were hunted with the bow and arrow in Samoa and Hawaii. In the Marquesas and possibly elsewhere there were wild pigs, descendants of domestic ones. These were caught in spring snares or brought to bay with dogs and killed with clubs. The wild boars were large and savage, and pig-hunting was a dangerous sport.

The Micronesians had no domestic animals, but sometimes tamed the frigate bird. The same bird often visited families on two or three different islands, and was sometimes used to carry messages, small tokens with a pre-arranged meaning being tied to their legs. The natives of some of the low Polynesian Islands had the same practice. The Polynesian domestic animals were the dog, pig, and chicken. The dog was present everywhere in the area except Easter Island. It was a rather small animal with a shaggy coat, large head, sharply pricked ears, and a rather short, flowing tail. There seem to have been some white individuals. It was prized as food, and was also used to a limited extent for hunting. The Maori used its skin for clothing and made ornaments of the

long, white hair from its tail. The breed is now extinct as a result of repeated crossing with imported animals.

Pigs were present everywhere in Polynesia, except New Zealand and Easter Island. The original breed seems to have been black with a rather heavy coat of coarse, grizzled hair, but there was some color variation. The boars were often quite large and developed long and vicious tusks. Pigs were usually kept tethered to trees by a cord around one leg. They were carefully fed and tended, and were everywhere highly valued. They were the natives' main source of meat. The boar's tusks were sometimes worn as ornaments.

Chickens were present everywhere except in New Zealand. The breed was rather small and resembled the original jungle fowl, although there seems to have been some color variation. Chickens were fed on food scraps and allowed to roost near the house, but little care was taken of them. In Easter Island, where they were the only domestic animal, the natives built large chicken-houses of rough stone with tunnels for them to sleep in. A thief had to tear down the stones to get at the chickens, and the noise he made would awaken their owner. The skulls of the members of a certain clan were believed to have a magical effect on their laying, and were often placed in the chicken-houses to increase the egg supply. In other parts of Polynesia little attention was paid to the eggs. The flesh was eaten everywhere; the feathers, especially those of the rooster's neck and tail, were often used for ornaments.

All the islands were comparatively poor in wild vegetable foods. Wild yams were fairly important in

Samoa and the Society Group; the roots of a species of fern (*Pteris esculenta*) were a staple food of the Maori. The fern roots were first dried, then slightly soaked, roasted, and pounded to a thick dough. The Maori also made a sort of bread from the pollen of the bulrush. It was sweet and light, and was much esteemed as a delicacy. The Pandanus grew wild in all the tropical islands. It has a fibrous fruit which contains some edible matter. It was little used in the high islands, but in the atolls of the Marshall and Gilbert groups it was a staple food. The natives sliced the fruit, baked it, and pounded it to a dough. The dough was made into thin sheets, dried in the sun and again baked. It was then pulverized and put up in large rolls covered with Pandanus leaves and elaborately corded. In this condition it would keep for years, and was a valuable reserve against famine.

The coconut was the most valuable of all the Polynesian and Micronesian plants. Its place of origin is still uncertain, but it was probably introduced into both regions by the natives. It will not live more than a few hundred feet above sea level and grows best on the low coral islands. It has to be protected from pigs during the first few years, but otherwise requires no tending. The coconut was the staff of life on all the atolls. Its leaves provided material for mats, baskets, and thatch; its fibre was used for cordage, and its wood, for houses, weapons and even canoes. The liquid in the young nuts took the place of fresh water, while the old nuts provided a nourishing food, and were also the source of the oil with which the natives rubbed themselves to protect their skins from the sea water.

The nuts were husked by means of a long-pointed, wooden spike set upright in the ground and opened by a few sharp taps with a stone. The liquid in the ripe nuts was never used, and their meat was rarely eaten without preparation. A contrivance like a low seat with a projecting arm was used for grating coconut. A rough piece of coral or a shell was fastened to the end of the arm. The operator, astride the seat, rubbed a half nut rapidly back and forth over this, catching the scrapings in a bowl placed below. Water was then added, and the solid parts strained out with a bundle of fibre. The residue was a thick, delicious cream which was usually eaten with fish, the other staple of the atolls. In oil-making the grated nut was put in a wooden vessel and left in the sun, the oil collecting in the bottom. In Pelew, the Carolines, Gilberts, Ellice group, and Fiji the sap of the tree was collected by cutting the end of one of the flower buds. When first drawn, it was sweet and mildly acid, making a pleasant drink. The Pelew and Gilbert Islanders boiled it down into a thick, sweet syrup. The sap ferments rapidly and becomes highly intoxicating in twelve to eighteen hours.

Breadfruit was important in most of the high islands, but required good soil and a fairly warm climate. It would not live on most of the atolls. New Zealand and Easter Island were too cold for it; it was of only secondary importance in Hawaii. It was no doubt introduced by the natives, for it did not form seed and had to be propagated by roots or cuttings. In the coral islands of the Gilbert group the trees were carefully tended, the soil about their roots being mixed with powdered pumice, but elsewhere it required no care except the protection of the young

trees from pigs. It was the main Marquesan food, for it flourished on hillsides which were too steep and rocky for regular cultivation. In most of the islands its bearing season lasted about six months, individual trees ripening at different times. It has a large, spherical, yellowish-green fruit which looks somewhat like a gigantic Osage orange. It is not edible when raw.

The commonest method of preparation was to bake it in an open fire, peeling off the charred rind before serving. At the height of the season the ripe fruit was peeled, cured and piled together in heaps or in large basket-like containers until it had fermented. The sour paste was then stored in large, leaf-lined pits. This method of preparation seems to have been known wherever the breadfruit grew, but was most important in the Marquesas. There every house has its *ma* pit which was the main source of food until the next breadfruit season came. There were also huge communal pits, sometimes as much as twenty feet deep, which were filled in good seasons and kept as a reserve against famine. The *ma* would keep indefinitely, and the Marquesans relished that which was particularly old and full-flavored. They considered it still edible after as much as fifty years. The wood of the breadfruit-tree was a favorite material for canoes and houses. In some of the islands of the Gilbert group it was grown for timber.

Bananas and plantains were found throughout much the same territory as the breadfruit, but they were even less suited to the low islands and seem to have been unknown in the Gilberts. They also were introduced by the natives wherever found, for they were seedless and had to be propagated by root-

cuttings. Plantains were roasted in an earth oven, while bananas were eaten either raw or cooked.

Sugar cane was present in all the high islands except New Zealand, but was of little economic importance. Clumps were often planted near the native houses, but there were no extensive plantations. The cane was chewed, but the natives had no method for extracting the juice. In Tonga and perhaps elsewhere the leaves were used for house thatch.

Gourds were cultivated in Hawaii, the Marquesas and Society groups, and New Zealand. They were an important food crop in New Zealand, the green fruit being steamed in an earth oven and eaten either hot or cold. The dry shells were used as water-bottles, bowls, etc. (Fig. 9, p. 40). The gourd apparently was not grown in Samoa and Tonga or in Micronesia.

With the exception of the gourd in New Zealand and of rice in the island of Guam in the Mariana group, all the regularly tilled Polynesian and Micronesian food crops were root crops. The natives of both regions were good farmers, wherever the soil made agriculture possible. There was very little level land in most of the high islands. In some groups, notably Hawaii, the hillsides were terraced for gardens. The natives also built regular irrigation systems there and in the Marquesans. The principal agricultural implement was the digging stick, a straight stave from five to six feet long, flattened, and slightly expanded at one end. The Maoris attached a step to one side of their digging sticks, so that they could be forced into the ground with the foot, but this was unknown elsewhere. In the Carolines a short-handled, mattock-like implement with a blade of turtle bone was used. Short spades with blades of wood or turtle bone are

reported from the Gilberts and from some of the outlying Micronesian islands.

Taro (*Colocasia antiquorum*) was the most important crop. It was grown on all the high islands except Easter, even reaching northern New Zealand, and also in the low islands of the Gilbert group, although it required careful tending there. The natives distinguished a great many varieties which were divided into two classes—the dry or upland taro and the wet taro. The former would grow in moderately damp soil, while the latter had to have its roots covered with water. The wet taro was the larger and more succulent. The roots, which look somewhat like a large rough turnip, were steamed in an earth oven and then pounded to a paste. In Hawaii the paste was allowed to ferment and then thinned with water to make a sour gruel (*popoi*), which was the staple food. The young leaves were also steamed and eaten as greens.

Yams were grown in practically all the high islands, but did not yield well in New Zealand. In the Pelews they were grown in large plantations in swampy ground. In the Society group they were planted on little terraces on warm, sunny hillsides. In Samoa, Tonga, and Fiji they were one of the most important foods.

A kind of sweet potato was grown in Hawaii and the Society group, and was especially important in New Zealand. The Society Islanders built a mound of rich black loam nine or ten feet across and three feet high, planting a handful of vines, without roots, in the top. The Maori grew it in little hills which were laid out in orderly rows. The hills were manured every year with fine gravel from the river bed, but

animal fertilizers were unknown. The ground was carefully weeded, and the plants guarded from insects, but they were never watered even in the driest seasons. At harvest time the roots were stored in special houses, often elaborately carved and decorated, which were raised on posts. The planting and harvesting were superintended by priests who recited many incantations. When a chief's fields were being planted, it was customary to bring the skull of his father or some other ancestor and leave it in the field for the season to insure a good harvest.

Arrowroot was an important product in the northern Marshalls, and was also manufactured in several of the Polynesian islands. There is no record of its introduction, but the plant is generally believed to be of American origin, and it may have been brought by early European voyagers. The root was grated and pressed through a sieve to remove the woody matter. It was then washed until clean, the remaining pulp or flour being pure white and almost tasteless. In the Society group it was mixed with the milk expressed from ripe coconuts, the mixture being cooked by throwing in red, hot stones and stirring it until it began to set into a jelly. It was a rich, sweet food much used at feasts.

COOKING AND UTENSILS

Fish and shellfish were commonly eaten raw, but all meat and most vegetable foods were cooked. Throughout the whole of Polynesia and Micronesia fire was made with the fire plough. The fire-drill is reported from the island of Yap, in the Carolines, but there is no record of it elsewhere. The fire plough consisted of two sticks—a small one, sharpened to a narrow chisel-point, and a larger one, flattened on one side. Both were commonly made of Hibiscus wood, but the stem of a coconut fruit-cluster was sometimes used for the larger one. The operator laid the larger stick on the ground and rubbed the point of the smaller one rapidly back and forth along it until a groove was formed in the farther end of which wood dust collected. When the heat of the friction had produced a spark, a slightly longer stroke was given, burying the end of the small stick in the dust and igniting it. The dust was blown to a coal and dropped into tinder of dry leaves or shredded bark. The method required great muscular control, for the least error in gauging the length of the strokes would scatter the dust. In spite of its simplicity the fire plough was one of the most rapid methods of fire-making, experts being able to kindle a fire in thirty seconds (Plate I).

Nearly all food was cooked in the earth oven, which was simply a hole in the ground which had been heated by keeping a fire burning in it. When the hole was hot, the fire was raked out, and the food put in wrapped-in green leaves. It was then covered

with more leaves, hot stones and ashes and earth. Food cooked in this way retained all its juice and flavor. Roasting was practically unknown. Certain foods were boiled by being placed in wooden vessels with water in which red hot stones were dropped, but this method was little used.

Vegetable foods were usually pounded to a paste. Stone pounders were used for this purpose in Hawaii,

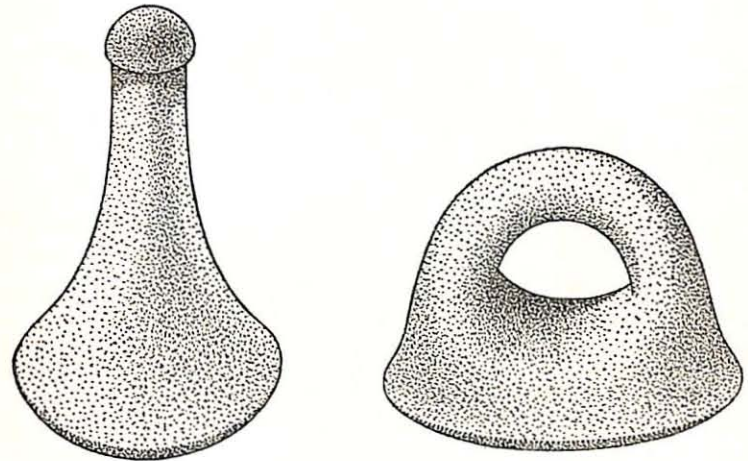


FIG. 8.

Food Pounders of Stone.

The one on the left was only made on the island of Kauai, Hawaii. Case 35.

the Marquesas, Society and Austral groups, New Zealand, and in a few islands of the Carolines (Fig. 8). Elsewhere the pounders were of wood. The pounded food was often mixed with the milk expressed from the kernel of the ripe coconut. Sea water was usually used for seasoning, but salt, obtained from hollows in which sea water had evaporated, was highly prized. Food was served on large green leaves or in bowls, and

was eaten with the fingers. The Fijians had wooden forks, but rarely used them except for human flesh.

Nearly all Polynesian and Micronesian utensils were made of gourd or coconut shells, wood, or bamboo (Figs. 9-10). Pottery was made in Fiji and Tonga, in the island of Guam, in Pelew and in Yap in the Carolines. In the two last-named localities its use ceased at an early time (Fig. 11). Its presence in Tonga was



FIG. 9.
Gourd Water Bottle.
Fiji. Case 21.

probably due to Fijian influences. The Fijian pottery was fairly well made and showed a considerable variety of form and of incised and modeled decoration. The larger jars were sometimes as much as three feet high. The smaller pieces were modeled from lumps of clay, while the larger ones were made by joining a number of thin flat pieces. The ware was never painted, but was sometimes given a glaze-like appearance by rubbing the freshly fired vessels with gum.

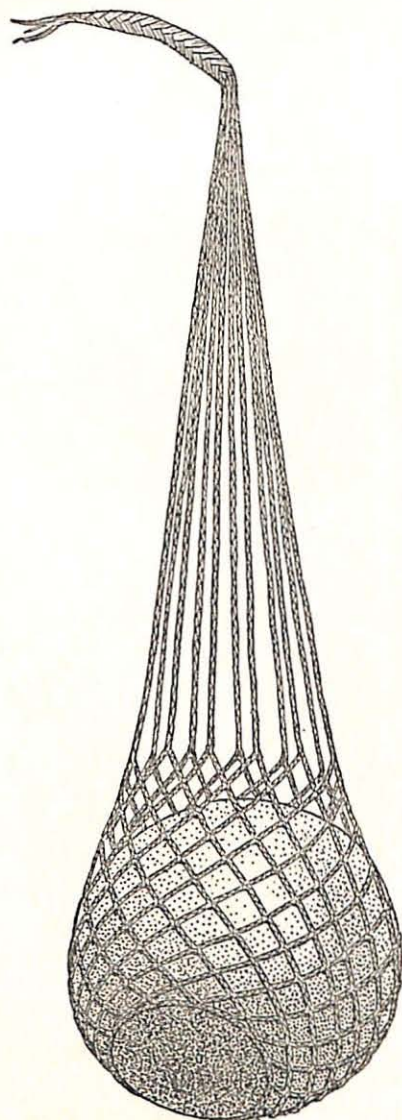


FIG. 10.
Coconut Water Bottle in Net of Plaited Coconut Fibre. Rewa, Fiji. Case 21.

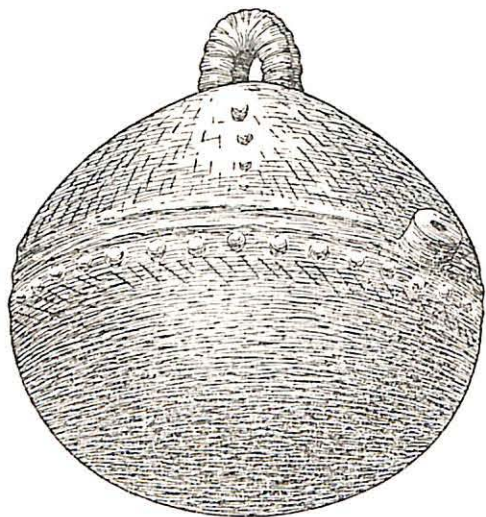


FIG. 11.
Pottery Water Bottle.
Rewa, Fiji. Case 21.

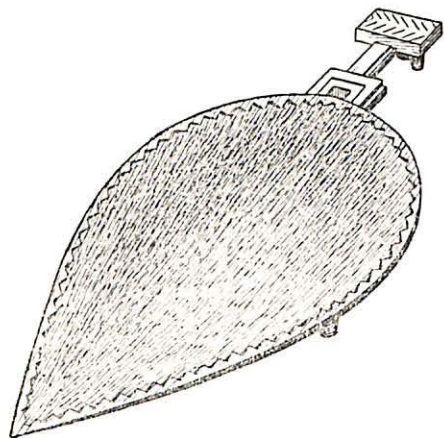


FIG. 12.
Priest's Oil Dish.
Kadavu, Fiji. Case 21.

Gourds were largely used for water-bottles (Fig. 9). Very large ones also served as boxes for clothing, etc., in Hawaii and for potting birds in New Zealand. The Hawaiians sometimes decorated their

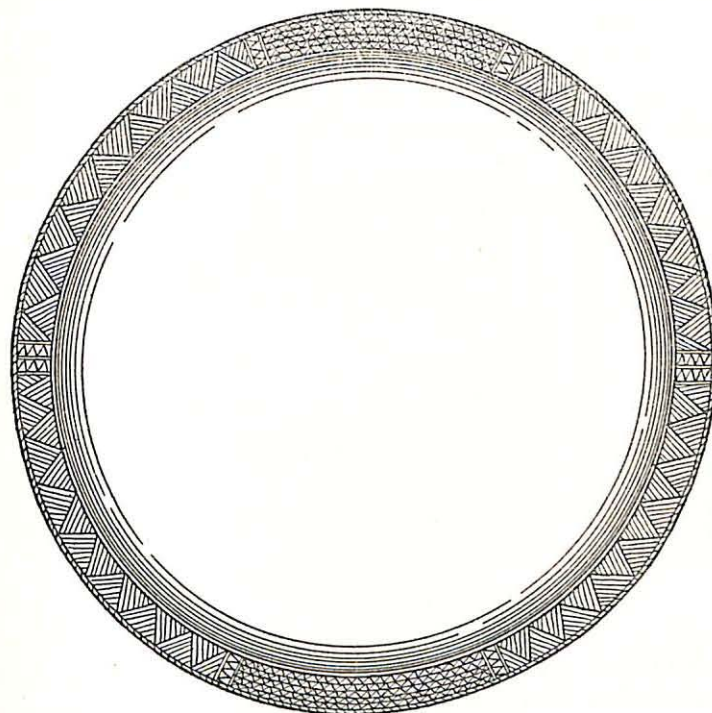


FIG. 13.
Chief's Meat Dish.
Kadavu, Fiji. Case 21.

gourd bottles with simple, stained designs, but the practice was unknown elsewhere. Large gourd utensils were usually carried in pots of coconut fibre or hash cord. Gourd shells were little used in Samoa and Micronesia.

Coconut shells were used wherever the tree grew, for bottles, also for small bowls and cups (Fig. 10). The Marquesans cleaned the nuts intended for use as bottles by making a hole in the largest eye and fastening them in the bed of a stream until the small fresh-water shrimps had eaten out the kernel. Cups were made from half shells which were often ground to paper thinness, oiled and polished. Both cups and bottles were sometimes carved.

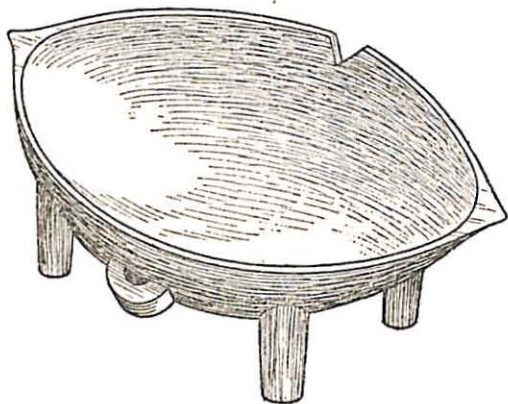


FIG. 14.
Wooden Kava Bowl.
Fiji. Case 21.

Joints of bamboo, or sections with the septa between the joints pierced, were used as water bottles wherever the larger species grew.

There were a great variety of wooden utensils (Figs. 12-16). The distribution of the various types has never been worked out thoroughly. Simple, round bowls were in universal use. They seem to have been of secondary importance in Micronesia and western Polynesia, but were the dominant form in Hawaii and the Marquesas. Many of the Hawaiian specimens are

of very large size, and are beautifully proportioned. Oval bowls with round or pointed ends were also universal. They seem to have been the dominant type in Micronesia, western Polynesia, and Fiji. They were also important in the Society group and Marquesas. Except for a few very shallow forms, platters rather than bowls, they were almost lacking in Hawaii. Some

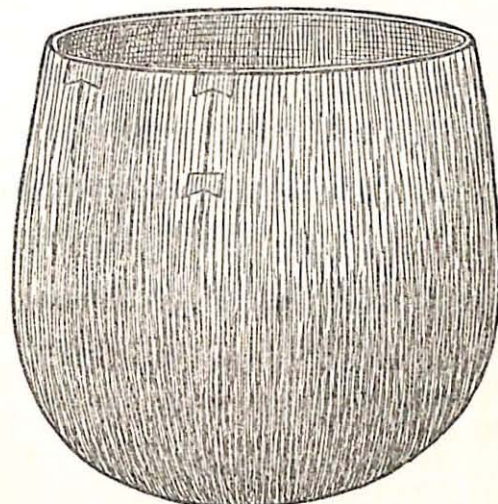


FIG. 15.
Old Popoi Bowl Repeatedly Mended by Its Owners.
Hawaii. Case 34.

of the Marquesan vessels of this type were as much as eight feet long. Large oval bowls with tight-fitting, domed covers were important in New Zealand (Plates II and III) and the Marquesas, and are reported from Pelew, but seem to have been unknown elsewhere.

Large, shallow round bowls with four or more legs were important in Samoa, Tonga, and Fiji, but unknown elsewhere. They were used for kava-making

(Fig. 17). A large, oval, four-legged bowl was common in the Society group, and a similar utensil appears in Hawaii as one of the rarer forms. Legged

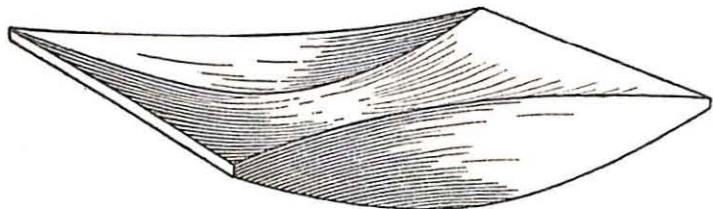


FIG. 16.
Wooden Food Dish.
Matty and Durour. Case 10.

utensils of any sort were quite rare in Hawaii, and were absent in the Marquesas. In the Carolines bowls

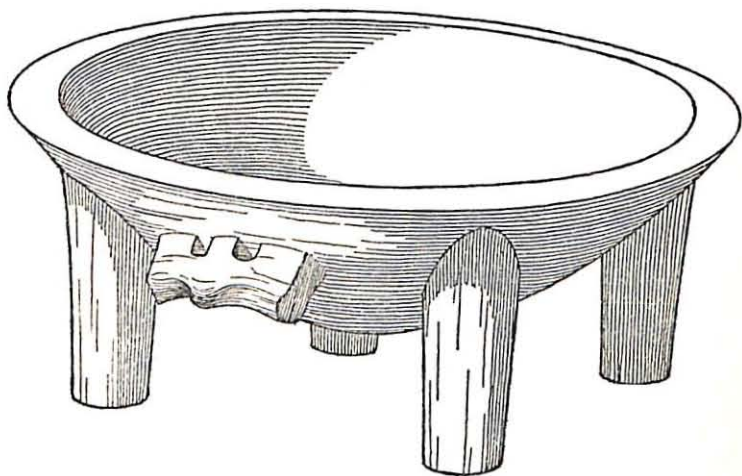


FIG. 17.
Wooden Kava Bowl. Samoa. Case 30.

were often provided with a base, either solid or pierced. There were a number of peculiar local forms. The Marquesans had a type shaped like a European

soup tureen, with a carved handle at either end. The Maoris made some of their bowls in the shape of a gourd with a curved neck cut in two lengthwise. The Fijians made many shallow dishes of peculiar shape, and these were used as oil dishes by their priests (Fig. 12). Micronesian and western Polynesian utensils were rarely decorated. The natives of Ruk in the Carolines painted their bowls red with a mixture of ochre and coconut oil. The Pelew Islanders sometimes inlaid theirs with pearl shell. Carving was infrequent, and was limited to a few simple angular designs. The Marquesans and Maoris carved their best utensils with elaborate and beautiful patterns. The Hawaiians never carved the surfaces of their bowls, relying for their decorative effects on fine proportions, high polish, and the beauty of the natural grain.

KAVA AND BETEL

Nearly all the Polynesians drank kava, a beverage made from the root of a variety of pepper (*Piper methysticum*). It was not used in New Zealand or Easter Island. Its occurrence in Micronesia seems to have been limited to Ponape and Kusaie in the Carolines. Kava was prepared by crushing the fresh root, adding water, and straining out the solid parts with a bundle of fibre. In Ponape and Kusaie it was crushed with stone pounders, but all the Polynesians chewed it. The chewing was usually delegated to young women chosen for their good health and sound teeth. The saliva helped to release the alkaloid which was the active principle. Kava prepared from the chewed root was somewhat more potent than that made from the pounded root. The drink itself is cloudy white in color, and tastes somewhat like weak soapsuds. When drunk in quantities, it produces a mild intoxication. Kava drinking was usually a ceremonial procedure. When the drink had been prepared, the first cup was passed to the person of highest rank present. It was then given to the others in order of their rank, the master of ceremonies calling out the name and title of each as he passed the cup. A libation to the spirits of the dead, or to some god, was usually poured before the drinking began.

The chewing of betel occurred only in the Pelews and in Yap of the Carolines. It was unknown in Polynesia. The betel quid was made by taking a slice of the fresh nut of the areca palm and wrapping it in a pepper leaf with a pinch of lime. The mixture has a

slight narcotic effect. It makes the saliva red, and in time blackens the teeth. Betel-chewing is a widespread practice in southeastern Asia and Indonesia, and was probably introduced into Micronesia from this region in relatively late times.

CLOTHING AND ORNAMENT

The warm and equitable climate of most of the Polynesian and Micronesian islands made clothing almost unnecessary. In general the men wore a small loin-cloth, apron, or kilt, and the women a kilt, but there were many local variations. In Pelew the men went naked and the women wore two short, thick fringes of yellow-dyed coconut fibre which were tied around the waist with a string. In the Carolines the men wore a belt with bunches of bark in front and behind, or a strip of fabric passed around the waist, between the legs, and tucked in behind. A kilt of grass or leaves was often worn on the outside. On Yap the women wore a voluminous skirt of leaves or bast reaching to the ankles and on Ponape a knee-length kilt of coarse cloth. In the Marshalls the men wore two thick bunches of shredded bark connected by a strip of matting which passed between the legs. This was supported by a girdle. The women wore a skirt made from two Pandanus-leaf mats, one in front and the other behind.

In the Gilberts men wore a single Pandanus mat as a kilt, while women wore a short skirt of split coconut leaves, grass, or bark. In ancient Samoa the men wore a small apron of *ti* leaves, and the women a skirt of the same material reaching to below the knee. On dress occasions both sexes wore voluminous skirts of tapa or fine mats. In Tonga both men and women wore a rather long skirt of tapa. In Fiji the men wore a tapa loin-cloth made of a single strip passed around the waist and between the legs, while the women wore

a short skirt of dyed fibre. Chiefs' loin-cloths were sometimes as much as fifty feet long. In Hawaii, the Marquesas, Society and Cook groups the men wore a similar loin-cloth of tapa, and the women a kilt or skirt of the same material. The Maori men wore a loin-cloth or a girdle with one or two aprons. A kilt of flax was often added. The women wore aprons or kilts.

Upper garments were unknown in Micronesia except in the Gilberts, where the men sometimes wore a poncho-like garment of bark matting with long, hanging fringes. Garments of the same type, but made of tapa or fine Pandanus matting, were worn by men in the Cook and Society groups. Long cloaks were worn in Hawaii, the Marquesas, New Zealand, while a short cloak was worn by women in the Society group.

The material most used for clothing in Polynesia was bark-cloth or tapa (Plates IV-VII). It was little used in Micronesia, for the trees from which it was made would not grow in the soil of the low coral islands. The best grade was everywhere made from the bark of the paper mulberry (*Broussonetia papyrifera*), which was cultivated for the purpose. Inferior grades were made from the bark of the breadfruit, banyan, and other trees. There were some local differences in tapa-making methods, but in general the process was as follows: Shoots up to two inches in diameter were cut, and the bark removed in a single piece. The stiff, outer bark was scraped off with a sharp shell, and the inner bark soaked for a time in fresh water. It was then beaten on a smooth log with a short, square club. The faces of the club were usually grooved to assist in matting the fibres. New strips of bark were placed with their edges overlap-

ping the beaten portion and beaten out in turn. In this way the piece could be made as large as desired. As soon as the tapa was dry, it was ready for use. The finished product was pure white, and had the consistency of tough, soft paper. It was surprisingly warm, and would stand fairly heavy wear, but fell to pieces if it became wet.

All the Polynesians except the Marquesans decorated their tapa. The Hawaiians dyed it in various colors, painted it with designs, and also stamped it with small stamps made from strips of bamboo. The Society Islanders painted it and stamped it with leaves and flowers dipped in dye. In the Cook group, Samoa, Tonga and Fiji, it was decorated by being stretched over a carved board or over a plate of Pandanus leaves on which narrow splints had been sewn, producing a raised design. It was then rubbed with red earth, the parts over the raised portion of the stamp taking the color, while the other parts did not. After rubbing details of the design were often gone over with paint. The Fijians also had stencils and wooden cylinders from two to four feet long, which were carved with evenly spaced transverse rings or wrapped with cord. They were covered with dye and then rolled across the tapa, making straight parallel lines. Tapa was often oiled to make it resistant to rain or varnished with the sap of a tree.

Except in Micronesia and Samoa mats were little used for clothing. The Samoans had very fine mats which were woven from strips of Pandanus leaf as thin as paper and only a sixteenth of an inch wide. These were as pliable as cloth, and were highly valued because of the great amount of labor involved. They were often decorated at the edges with red feathers.

They had another type of clothing mat, worn in cold weather, which was woven from strips of beaten Hibiscus bark. Threads of the same bark were caught into the face of the mat on one side, so that it was covered with a thick, rough pile two or three inches long. Quite similar mats were used. The Micronesian clothing mats were nearly all made from Pandanus, and were considerably coarser in Yap, in the Carolines, than the best Samoan examples. Those worn by the Marshall Island women were square, and were decorated with broad borders embroidered with dyed strips of bark.

True cloth was made in some of the islands of the Caroline group and in Tasman, Lord Howe, Abgarris, and other small islands lying on the edge of Melanesia. It was woven from untwisted banana-fibre or from narrow strips of bark. The loom was a simple belt-loom. The natives of Kusaie, in the Carolines, produced beautiful designs by tying together fibres of different colors to form the warp. Each section of colored fibre had to be of exact length. They had small bench-like frames with a gauge on one side on which the warp was tied before it was transferred to the loom. In some of the finer belts the warp had to be knotted as much as fifteen thousand times. The practice is clearly related to the decorative warp-dyeing cultivated by many of the Malays, and may represent the original technique from which the Malay method was developed.

The loom was unknown in Polynesia, but is known in Micronesia (Fig. 18). The Maoris were the only people who used textiles for clothing. At the time of their first arrival in New Zealand they no doubt used tapa, but the climate was too cold for the paper-

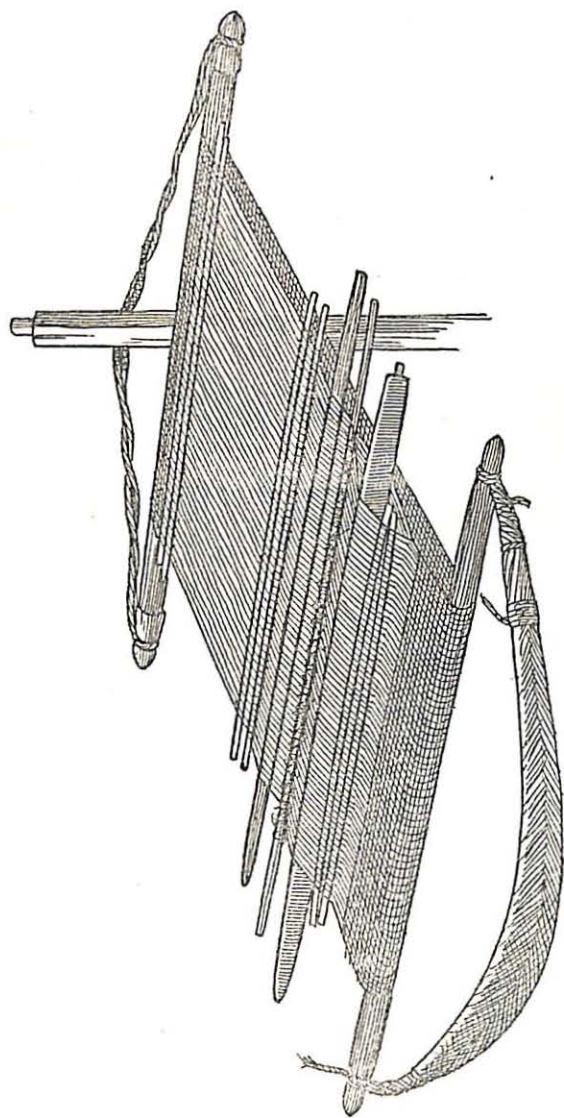


FIG. 18.
Loom.
Lord Howe Island. Case 12.

mulberry. There was no native tree from which it could be made. They made a limited use of bird and dog skins, but most of their clothing was manufactured from the fibre of the New Zealand flax (*Phormium tenax*); see Plate XIII. The leaves were cut and dried, the outer skin scraped away with a shell, and the fibre steeped for three or four days in running water. It was then pounded with a stone beater, dried in the sun, and chafed between the hands until thoroughly clean and soft. Thread was made by rolling the fibre between the palm of the hand and the bare thigh. Cloaks were made by the twining process. The warp threads, which were simply untwisted hanks of fibre, were attached to a cord stretched between two sticks set upright in the ground. The weft threads, which were of twisted fibre, were carried across in pairs and given a half turn at each of the warp threads. An interval of half an inch or more was usually left between one pair of warp threads and the next, but closely twined fabrics, not unlike coarse canvas, were sometimes made for use as war cloaks. Cloaks were often shaped to fit the shoulders by means of inserts. Kilts were usually made from strings of partially cleaned fibre attached to a broad, plaited waist-band. The outer side of the cloak was usually decorated with hanging threads, like a long, thin pile, or with feathers. The quills of the feathers were caught into the fabric. They were arranged in overlapping rows, so that the surface of the cloth was completely covered. The fine hair-like feathers of the *kiwi* (*Apteryx*) were especially prized, but those of pigeons, parrots, and other bright-colored birds were also used. The making of feather robes required much

in the Carolines free men and the women attached to the men's houses were tattooed, the latter being marked on the hands and legs. On Ponape of the same group both sexes tattooed the arms and legs. In the Marshalls tattooing was a mark of rank, diagonal lines on the cheek indicating a chief. Nobles often wore elaborate symbolic designs on chest, back, and arms, but commoners were not allowed to tattoo the cheeks or sides. In the Gilberts men tattooed the breast, back, and legs; and women, the thighs and legs. Tattooing was forbidden to slaves everywhere in Mi-



FIG. 19.

Tattooing Instrument with Bone Comb for Pricking Designs into Skin.
Samoa. Case 29.

cronesia. In Fiji only the women were tattooed, being marked on those parts covered by the skirt and on the hands. It was believed that an untattooed woman would be punished after death. In Tonga the men were heavily tattooed from the waist to the knee, but the women were not marked.

In Samoa the men were tattooed as in Tonga (Fig. 19); and the women, with a few small designs on the legs and hands. In the Society group the men were heavily tattooed, having designs even on the head and ears, though seldom on the face. The women, especially those of royal blood, were tattooed on the feet and hands. In the Marquesas the men were completely

tattooed, being marked even on the crown of the head, lips, and eyelids. The women were tattooed from the waist to the feet, on the arms and lips, and behind the ears. The Hawaiians seem to have tattooed everywhere except on the face, but the designs were crude and widely spaced. Maori men were marked on the face and thighs, women only on the lips.

Scarification was practised only in the Gilberts and Fiji, the women burning their flesh to produce rows of raised dots on the breast and arms. More elaborate designs, made by cutting the flesh and causing it to heal in a welt, were also used by the Fijian women.

Circumcision was practised everywhere in Polynesia except New Zealand, also in Fiji, but seems to have been unknown in Micronesia. Head deformation also seems to have been nearly universal in Polynesia, although there is little information on the methods. In Samoa the child was laid on its back, and its head surrounded by three flat stones, one at the crown and one on either side. The forehead was then pressed with the hand to flatten it, and the nose was also flattened. In Tonga the child was kept lying on its back on a hard surface with its head pressed against a flat piece of wood, both the back and top of the head being flattened in this way. In the Marquesas infants' heads were shaped by long-continued rubbing, a long head with a retreating forehead being much admired. In Fiji the coast natives deformed their infants' heads to make them short and round, while the interior tribes deformed theirs to make them long and narrow. The Maoris admired bowed legs and tried to produce them by massaging their infants' limbs. A few of them also filed their teeth to points, but the practice was unknown elsewhere.

The Micronesians all pierced their ears. In Yap in the Carolines the hole was stretched with increasingly large rolls of leaves, girls wearing coconut-shell protectors over their ears, while the process was going on. In Ruk and Mortlock heavy ornaments were inserted, dragging the lobes down almost to the shoulders. In Polynesia ear-piercing seems to have been limited to New Zealand, the Marquesas and Cook groups, Tonga, and Easter Island. Both the Cook group natives and the Easter Islanders stretched the ear-lobe. The Marquesans did not stretch their earlobes in historic times, but the form of certain of the men's ear-ornaments strongly suggests that they were once familiar with the practice. In that group the ears were pierced with long awls of bone or tortoise-shell which were often beautifully carved, and were handed down as heirlooms. The natives of Pelew pierced the septum of the nose; those of Tasman Island, the side of the nostril, but these mutilations were unknown elsewhere.

HAIR-DRESSING

Micronesian hair-dressing was comparatively simple. Women usually allowed their hair to flow loose, sometimes cutting it off at the shoulders, while men usually tied theirs into a knot on top of the head. Polynesian hair-dressing varied a good deal in the different groups. In Samoa women wore their hair short, *with sometimes a small, twisted lock hanging from the left temple*. Men wore theirs long, gathering it up into a knot a little to the right of the crown of the head. They frequently bleached it red with lime. Tongan women wore the hair long. In both the Society group and the Marquesas women bobbed their hair, cutting it off at the shoulders or above, while men arranged theirs in fantastic ways. Sometimes one half the head would be shaved, and the other half left long, or a path would be shaved down the centre, and the hair gathered in knots on either side, or it would be gathered and plaited into a broad tail behind. In the Society group the heads of infants were usually shaved. Among the Maori unmarried women usually wore their hair short, while married ones wore theirs in long braids around the head. Men usually wore it long, gathering it into a knot on the back of the head which was held with a comb. In Hawaii the women wore the hair short; the men, long. The latter sometimes shaved the sides of the head, leaving a roach down the centre. The hair was often cut as a sign of mourning.

The Fijians had by far the most elaborate coiffures in the region. Their hair was naturally curly,

stiff, and wiry, and stood out from the head. Williams, a reliable early visitor, measured one head of hair that was five feet in circumference. The hair was dyed red, yellow, white, and dark blue, several colors sometimes appearing on the same head. Williams says, "One has a knot of fiery hair on his crown, all the rest being bald. Another has most of his hair cut away, leaving three or four rows of small clusters, as if his head were planted with small paint brushes. A third has his head bare except where a large patch projects over each temple. . . . A mode that requires great care has the hair wrought into distinct locks, radiating from the head. Each lock is a perfect cone, about seven inches long, having the base outward; so that the surface of the hair is marked out into a great number of small circles, the ends being turned in in each lock, toward the centre of the cone. In another kindred style the locks are pyramidal, the sides and angles of each being as regular as though formed of wood. All round the head they look like square, black blocks, the upper tier projecting horizontally from the crown, and a flat space being left at the top of the head." Unmarried women wore short hair, but the married ones sometimes copied the less extreme men's styles. Every chief kept a professional hair-dresser. Wigs were worn by those whose natural hair was not of the proper texture. When the hair had once been made up, it was protected by sleeping on raised wooden pillows which kept it from the ground.

Most of the Micronesians had light beards and usually plucked them out with a pair of small shells, used like tweezers, although the Gilbert Islanders prized their beards and allowed them to grow. The Samoans, Tongans, and Maoris also plucked out their

beards and body hair in this way. The Society Islanders often plucked theirs, but also allowed them to grow long and braided them. The Marquesans often shaved a strip down the chin, allowing the beard to grow on either side, and divided it into tresses which were decorated with beads or teeth. The white beards of old men were highly valued for ornaments, and when a man wanted to make one of these, but had no relative whose beard was white, he would sometimes hire an old man to let his beard grow. Most of the Hawaiian men wore beards, and the Fijians had heavy beards, but seem to have paid little attention to their arrangement.

Shaving and hair-cutting were everywhere done by means of shark-teeth. The tooth was set in a wooden handle, and the hair gathered in small bunches and sawed off. When this became too painful, it was singed off with a brand.

PERSONAL ORNAMENTS

All the Polynesians and Micronesians were fond of ornaments, but they were less extreme in this than the Melanesians. Body and face painting, except in connection with religious rites, was unknown except in Fiji, although the Pelew and Caroline Islanders and the Marquesans smeared themselves with a mixture of oil and turmeric. The latter bleached their skins before dances by covering themselves with the sap of a vine and remaining in the shade for several days.

Head-ornaments were little used in Micronesia, although wreaths of flowers and herbs were sometimes worn. Hats woven from strips of Pandanus were used in the Gilberts. The men of Ruk, in the Carolines, wore a long comb to the top of which a flat feather ornament, shaped somewhat like a bird's wing, was attached. In Fiji and Tonga the commonest head-dress was a turban of white tapa. The Samoans wore ornamental combs and also high head-dresses of bleached human hair with brow bands covered with rows of iridescent Nautilus-shell plaques. In the Cook and Society groups warriors often wore high head-dresses of radiating feathers. In the Society group these were attached to a broad, flat semi-circle of coconut-fibre matting which was covered with shark-teeth, pearl-shell plaques, or small feathers. The Society and Tuamotu Islanders also wore shell wreaths made by stringing small shells together and wrapping the string about a ring of tapa or Pandanus leaves.

The Marquesans had a great variety of head-dresses. The commonest was made from porpoise

teeth pierced and made into short strings which were fastened perpendicularly on a band of coconut fibre. Crowns made from curved alternate strips of white shell and carved tortoise-shell, fastened at the base to a fibre band covered with small pearl disks, were also much used. A large pearl shell overlaid with a piece of tortoise-shell cut into delicate tracery was often worn on the forehead, and warriors wore a high head-dress made from cock's tail-feathers. Aigrettes made from old men's beards were usually fastened to the porpoise-tooth wreaths and shell crowns. Hawaiian chiefs wore ornaments of wickerwork covered with red or yellow feathers. The shape was very much like that of the ancient Greek helmet. The Maori wore ornamental combs of wood or whalebone, or inserted one or more feathers in the hair. Wreaths of flowers and fragrant herbs and single flowers thrust in the hair or over one ear were used everywhere.

In Micronesia flowers or bunches of dyed leaves were the commonest ear-ornaments. Inlaid tortoise-shell ornaments were worn by men in the Pelews; ear-rings of beads or shell, by men in Yap, in the Carolines. In Ruk and Mortlock of the same group the men wore a great number of tortoise-shell rings. In the Cook group leaves and flowers or small polished coconut shells were worn in the distended ear-lobes. The Easter Islanders wore round, wooden plugs. The Marquesans had a variety of ear-ornaments. The most prized men's ornaments were disks cut from single whale-teeth. A long spike was left on one side of the disk, which passed through the hole in the ear-lobe and projected behind. The weight of the ornaments was borne by a band across the head. Large plates of whitened wood with similar spikes were also worn.

Women wore ear-ornaments made from narrow strips of carved human bone, the decorated portion projecting horizontally behind the ear. The Maori wore long ear-drops of jade or bowenite, or pennants made from shark-teeth. They also inserted bunches of strips of white tapa in the ear perforations—the only use which

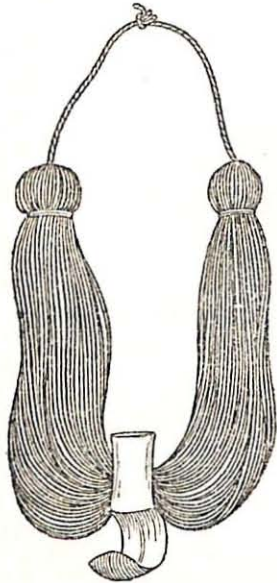


FIG. 20.

Chief's Necklace. Hook of Whale's Tooth and Bundles of Braided Human Hair.
Hawaii. Case 35.

they made of this substance. A nose ornament of tortoise-shell was worn by priests and old men on Lord Howe Island (Fig. 22).

Necklaces of flowers and small shells were in universal use and were, perhaps, the commonest of all native ornaments. Tooth necklaces were also much

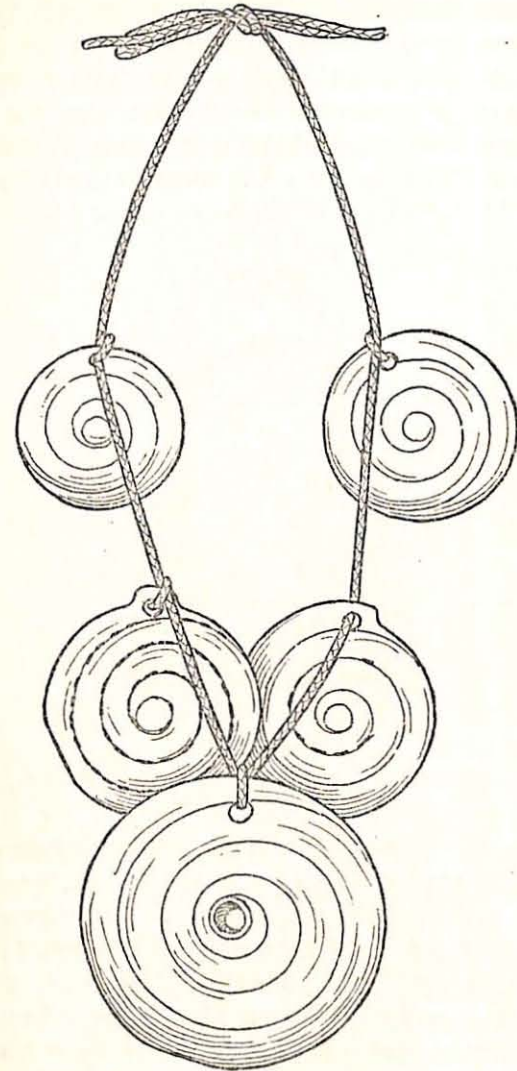


FIG. 21.

Breast Ornaments Ground out of Shell.
Lord Howe Island. Case 13.

used. Porpoise and small whale teeth were the commonest (Fig. 20), but the Gilbert Islanders and Maoris used shark-teeth and the teeth of slain enemies. Single whale-teeth attached to heavy cord were worn as breast ornaments in Fiji, New Zealand, and the Marquesas. In Fiji they were the most valued of all ornaments. The gift of a whale-tooth always accompanied

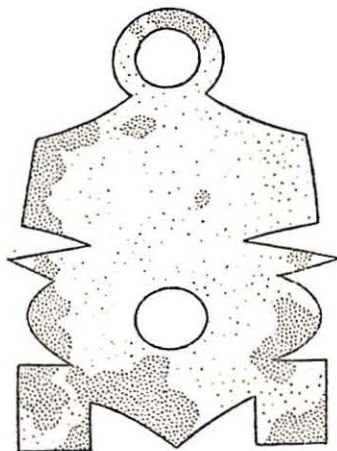


FIG. 22.

Nose Ornament of Tortoise-shell for Priests and Old Men.
Lord Howe Island. Case 13.

overtures from one chief to another. Necklaces made from a number of whale-teeth ground to long slender points and threaded together by a cord through their bases were worn in Fiji, Samoa, and Tonga (Fig. 23). In the Gilberts, Marquesas, and Hawaii necklaces made from many yards of slender, braided human hair were highly valued. In Hawaii they were worn only by chiefs, and had a peculiar hook-shaped ornament of whale ivory attached to the centre (Fig. 20).

Necklaces made from cylindrical beads of shell or coconut shell were worn nearly everywhere in Micronesia, but were almost unknown in Polynesia. In the Marshalls and Carolines those made from pink shell were most prized. On Yap, in the Carolines, the wo-

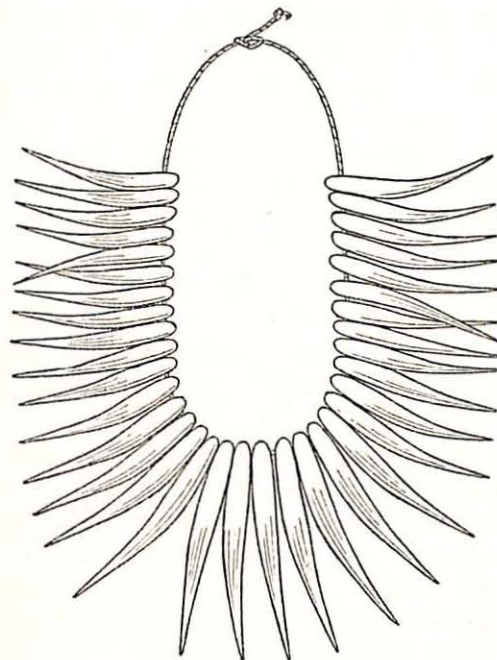


FIG. 23.

Necklace of Whale Ivory.
Viti Levu, Fiji. Case 23.

men wore a string of black-dyed Hibiscus bark as a necklace, and it was considered indecent to appear without it. Disks ground from the ends of large conus shells were worn as gorgets everywhere in Micronesia (Fig. 21), and occurred as a rare form in the Mar-

quesas. The Marquesans wore stiff collars or ruffs made of light wood encrusted with the bright, red Abrus seeds. The Tahitians had large semi-circular breast-plates of stiff coconut-fibre matting overlaid with feathers, shark-teeth, and plaques of pearl-shell. The favorite Maori ornament was the *heitiki* (Plate XIV), a small grotesque human figure carved from jade or whalebone, which was worn around the neck on a cord. It apparently represented an ancestor. Heitiki were handed down in families as heirlooms, being buried with the last member. There was a curious rule that when a chief had been conquered and enslaved, his wife had to send her heitiki to the wife of the conqueror. Large hook-shaped pendants and small adze-blades or chisels of fine green jade were also worn as breast-ornaments. A rare type of Maori necklace made from alternate beads and points of human bone with a knife-shaped pendant of bowenite is shown in the collection.

Rings of tortoise-shell were worn in Tonga in ancient times. The Hawaiians sometimes wore small ivory effigies of turtles attached to the finger with a cord. Bracelets were worn all over Micronesia, but were rare in Polynesia. Those of Micronesia were ground from *Conus* or *Tridacna* shell. The Hawaiians wore a variety of bracelets, some of shell, some of alternate pieces of black wood and ivory, and others of hogs'-teeth or boar-tusks. Men sometimes wore a broad band of netted fibre covered with shells on the upper arm. The Marquesans wore kilts, capes, knee-wrist and ankle ornaments made from long tresses of human hair fastened to bands of coconut fibre. Girdles of plaited hair-cord were worn by men in the Gilberts. In the Marshalls women wore a girdle made from

coconut-fibre cord encased in a woven sleeve of Pandanus. The length of the cord varied with the rank of the wearer, those of female chiefs being sometimes as much as seventy yards long. In the Carolines men wore broad belts made from a number of parallel strings of coconut shell and shell beads. Ornamental girdles were little used in Polynesia, but Maori men wore special war belts of flax.

Fans were used everywhere in the region. They were usually braided from strips of coconut or Pandanus leaf, and were used for coolness or to drive away insects. Those from the Marshalls, Fiji, Tonga, and Samoa are often braided from dyed strips of different colors, and are unusually graceful and pleasing. The Samoan fans are sometimes woven in open-work designs. A fan of thin wood was used there as a rare form. The Marquesans and Cook Islanders had very finely woven fans with carved handles of wood, bone, or whale ivory. Those from the Marquesans are especially beautiful, the woven part being whitened with clay, and the handle carved into one or more pairs of conventionalized human figures. Such fans were carried by female chiefs as insignia of rank and descended in families as heirlooms. In the Cook group men carried very large fans in time of peace. In Hawaii the chiefs used a special type of fan with a very short and broad blade, often almost crescent-shaped, and handles wrapped with fine cord of fibre or human hair.

Fly-flaps made from long bunches of coconut fibre attached to a slender wooden handle were used in Fiji, Tonga, Samoa, and the Society group. In the Society group the handles were often carved into crude human figures. In Samoa a fly-flap was carried by a chief or orator as part of his dress costume. The specimens

from the Society group are so carefully made that they probably served some ceremonial purpose. In Hawaii large fly-flaps of feathers were an emblem of royalty.

DWELLINGS

Practically all Micronesian and Polynesian houses were built of wood and thatch, but they were by no means crude or flimsy structures. The timbers were well dressed and accurately fitted, the thatch was laid with care. There were many little refinements of construction which one would hardly expect to find among an uncivilized people. There were highly paid professional house-builders in nearly all groups. Krämer estimates that a Samoan dwelling of the better sort cost its owner the equivalent of from \$1200 to \$2000. On town-houses and other large ceremonial structures the expense must have been far higher.

The Easter Islanders made a few crude stone huts. Stone house-posts or pillars are recorded from Pelew and the Gilberts, but with these exceptions the use of stone in house-construction was limited to foundations. Throughout the whole of Polynesia except New Zealand dwellings and ceremonial structures were often raised on low stone-faced platforms. The Marquesan platforms were especially large and well made, those of chiefs being sometimes six to eight feet high. The forward part of the platforms was uncovered and served as a lounging place, while the house itself stood on a second and lower platform built on the rear of the main one. Cut stone was often used to face the smaller platform. High stone-house platforms were also used in Yap and Ponape of the Carolines, those of Yap often being double as in the Marquesas. In Fiji the platforms of chiefs' houses and temples were often several feet high.

All the Micronesian houses were rectangular with high-peaked roofs. The timbers of the frame were lashed together with cords of braided coconut-fibre (*cinnet*), which were often dyed in different colors and interlaced to form designs. In the Pelews the houses were raised about three feet above the ground on stone pillars, the floor being made of thick planks or split bamboo. The walls were made of interwoven bamboo splints or palm leaves. There were several doors which were closed with sliding shutters of the same material. In Ponape the houses had high, steep roofs and low walls made from bundles of reed or cane. The floor was laid with planks. In Kusaie the houses were somewhat cruder with very high gables and a saddle-shaped roof. The walls were low, and there was a door on each side. The saddle roof was also used in the Marshall group. It is said that in the ancient Marshall Island dwellings the roof rested directly on the ground, with no side walls. The Gilbert Island houses were two-storied, with a low loft under the peak of the roof. They were frequently raised on posts.

Large council-houses were used in the Pelews, Carolines, and Gilberts. Those of the Pelews were from sixty to eighty feet long and from twelve to fifteen feet wide. The cross beams and supports were carved. Those in Yap were extremely high with a projecting gable at one end, and had platforms in the interior. Both the pillars and platforms were carved. In both the Pelews and Yap these large houses were occupied by the unmarried men, and were tapu to women at ordinary times. The council-houses on Ponape were decorated only with ornamental lashings. At one end there was a high platform, with a ladder, on which

the chief sat during ceremonies. Low platforms along both sides served as seats for other spectators. Part of the house was screened off as a sleeping room for the chief and his family. The council-houses of the Gilberts were sometimes as much as 120 feet long, 45 feet wide, and 40 feet high. The sides were open, and there were no platforms. The ridge pole was painted with black bands and ornamented with rows of white shells.

The Fijians used dwellings of several different kinds, the form varying with the tribe and region. Williams says, "The form of the houses in Fiji is so varied that a description of a building in one of the windward islands would give a very imperfect idea of those to leeward, those of the former being much the better. In one district a village looks like an assemblage of square wicker baskets; in another, like so many rustic arbors; a third seems a collection of oblong hayricks with holes in the sides, while in a fourth these ricks are conical. By one tribe just enough framework is built to receive the covering for the walls and roofs, the inside of the house being an open space. Another tribe introduces long centre posts, posts half as long to receive the wall-plates, and others still shorter as quarterings to strengthen the walls. . . . Along the sides is a substantial gallery on which property is stored. . . . The walls range in thickness from a single reed to three feet." Grass or leaves of various sorts were used for the thatch, which often extended to the ground. The walls were made from reed panels, the reeds being laced together with *cinnet* in ornamental designs. The timbers were also fastened together with ornamental lashings, but there was little decorative carving. In the better houses the ends of the ridge-pole projected beyond the thatch, and were blackened and decorated

with white shells. The temples were built on high stone platforms, and had very high steep roofs.

In Tonga, Samoa, Niue, and the Society group the houses were oval, consisting of a rectangular central portion with rounded apses at either end. In many of the Samoan dwellings the central portion was shortened until the house was almost round. House platforms, when used, were low, and the floor was not paved. The Samoan houses were not walled; elsewhere the walls were made of reeds or matting. Council-houses and temples were shaped like the ordinary dwellings. The only decorations were ornamental lashings of *cinnet*. In the Society group square houses were used by the poorer classes. The Easter Islanders used long-pointed houses shaped like an inverted canoe. The house floor was surrounded by long, narrow cut stones, like curb-stones, which were socketed to receive the lower ends of the rafters. There was a doorway with a short porch in the centre of one side. These houses were sometimes as much as 120 feet long by 12 feet wide, and were shared by several related families.

In Hawaii, the Marquesas, and New Zealand the houses were square, although there seems to have been a limited use of round and oval forms in the south island of New Zealand. The Hawaiian houses were usually built on stone platforms, and the floors were paved. When the site of a village was subject to floods, the dwellings were sometimes raised on posts. The whole house was covered with long grass thatch, the only opening being a low doorway in one side. There was almost no attempt at decoration. Temples were shaped like the dwellings, but within the sacred precincts there were usually "oracle towers," tall, slender,

tapa-covered structures like obelisks, from which the priests delivered their prophecies.

The Marquesan houses were always built on stone platforms, but only the forward half of the floor was paved, the rear half being covered with mats and used as a bed. They were long and narrow with steeply pitched rear roofs which came down to the ground and less steep front roofs supported by a row of low posts. The ends and front were often left open. Walls, when present, were made from small Hibiscus poles lashed together with *cinnet*. The doorway was in the middle of the front, and was made very low, for defence. It was closed with a wooden shutter in a slide. The posts were elaborately carved, often being shaped into Atlantid figures. There was a considerable use of ornamental lashings. Each village had its men's house, built like the dwellings, but of larger size. There were also decorated storehouses raised on posts which were sometimes used as sleeping quarters by the old men. Both these and the men's houses were tapu to women. The temples were rather small with enormously high roofs.

The ordinary dwellings of the Maori were small and rather crudely made, with a light framework of sticks, and thatch which came to the ground. The door was at one end, and was protected by a veranda. In the south island the floor was often rather deeply excavated for the sake of warmth. Each village had a small storehouse raised on posts and a large council-house which was also used as a dormitory. Both the store-houses and council-houses were elaborately decorated with carved and painted designs. Ornamental lashings seem to have been unknown.

The Maori council-houses were by far the most beautiful structures in the Pacific. A fine example,

obtained by the Museum many years ago, has been erected at the south end of the Hall (Plate XI). It is one of perhaps six now in existence, and is the only one which has a completely carved front. Even with abundant labor the construction of such a house required several months. Seasoned timber was used for the frame, that which had been buried in a river-bed for many years being preferred. The most important piece was the ridge-pole, which was hewn from a single log. That of the house in the Museum is sixty feet long, and weighs over a ton and a half. Two other very large timbers were required for the end posts, which were set in the ground just within the line of the front and rear walls. The ridge-pole was raised by means of sheers, the workmen lifting first one end and then the other and supporting the weight by scaffolding. When in place, the end of the ridge-pole projected several feet beyond the front post, supporting the veranda roof. The walls were made from wooden slabs set in the ground at equal intervals. The spaces between these were filled with panels of reeds fastened together with flax. Rafters ran from the top of each wall slab to the ridge-pole. All parts of the frame were lashed together with flax cord. The roof and sides of the house were covered with thatch, two feet or more thick.

A low, continuous bed of grass covered with mats ran around the inside of the house. There was a small fireplace a short distance back of the door. The only openings were a smoke-hole at the peak of the front wall, a door and a window. The latter were closed at night with sliding panels of wood. The posts, panels, projecting end of the ridge-pole and, in this case, the front of the house, were carved with highly con-

ventionalized human figures representing ancestors or mythological beings. After carving they were colored red with a mixture of ochre and oil. The rafters and underside of the ridge-pole were painted with scroll designs in red, black, and white. The reed panels of the walls were worked into designs. The finished house was the pride of the village, and so potent were the spells recited at its erection that even if the village was taken by an enemy, its council-house would be allowed to stand unplundered until it fell to pieces.

Micronesian dwellings were often divided into rooms or stalls by light walls, but the Polynesian and Fijian houses rarely contained partitions. If privacy was desired, part of the house would be screened off with tapa curtains. In the Pelew and Caroline groups, Samoa, Hawaii, and New Zealand, small fireplaces were built inside the house, but these were intended primarily for warmth and light. Cooking was everywhere done in small, detached houses, usually a simple roof on posts. Polynesian dwellings were kept scrupulously clean, the house-wives sweeping their floors every few days with brooms of coconut splints and renewing the floor mats whenever they became soiled.

FURNITURE

The ordinary Polynesian or Micronesian dwelling was empty except for mats on the floor, a few baskets and utensils, and the bed-coverings and personal belongings of the residents. Throughout most of the region the ordinary floor and bed-mats were made from strips of Pandanus leaf, varying in width from one-quarter to three-quarters of an inch. The leaves were often steeped in salt water and pounded to be made more pliable, and were trimmed with sharp shells. The plaiting was varied to produce designs and natural leaves of two colors, or dyed and undyed leaves were interwoven in simple patterns. A thick, springy mat made from whole Pandanus leaves sewn side by side was used in Ponape in the Carolines. Coarse, narrow mats woven from single coconut fronds were often laid on the floor under the finer ones to protect them from dampness. In Hawaii and Fiji the finest mats were made from sedge, and the Maori used *Phormium* leaves and rushes.

The natives commonly sat on the floor, but the Society Islanders and Tongans had four-legged stools hewn from single blocks of wood. These were used only by chiefs and heads of families. Those of great chiefs in the Societies were sometimes as much as five feet long, three feet wide, and three feet, six inches high at the ends. In the Marquesas and Cook groups sloping slabs of stone were often set in the house platform in front of the house to serve as back rests.

There is little information on Micronesian sleeping arrangements, but the beds of this region seem com-

monly to have been made from a few mats laid on the floor and rolled up when not in use. In Fiji, Tonga, Samoa, and the Society group the beds were of the same simple type, although those of Fijian and Tongan chiefs were sometimes elevated on piles of tapa. The Hawaiians, Marquesans, and Maoris had permanent beds. The Hawaiian bed was a long pile of mats which often ran clear across the rear of the house. At least in later times it was often raised on a low platform. The Marquesan bed covered the rear half of the dwelling. This part of the house floor was not paved, and was bordered on either side by polished coconut logs. It was filled with a thick layer of grass or leaves covered with mats. Priests often slept on low platforms supported by posts.

In the larger Maori houses the bed space was separated from the floor by a line of squared timbers, and was filled with grass and covered with mats. Pillows made from pieces of wood or bamboo raised on legs from three to five inches high were used in Fiji, Tonga, Samoa, and the Society group. They were also used in Hawaii in early times, but the commonest form in that group was made from leaves encased in a neatly woven, oblong cover of matting. In the Marquesas the log along the rear of the bed served as a pillow, but there were also pillows of leaves bound with tapa. The Maori seems to have used simple blocks of wood, without legs. Bed-coverings were usually made of tapa. In Hawaii several sheets were often sewn together along one edge to form a thick blanket. Tapa mosquito nets were used in Fiji.

In Hawaii, the Marquesas, and Tahiti many of the houses had stands planted in the floor. These were shaped very much like European clothes-trees, and

were used for hanging up objects which had to be protected from rats. In the Carolines and Fiji wooden hooks or hangers suspended from the rafters were used for the same purpose. Many of the Micronesian houses had lofts used for storage. In the Marquesas and New Zealand clothing and ornaments were stored in long wooden boxes with tight-fitting covers. In Hawaii the shells of very large gourds were employed for this purpose.

Candle-nuts were used for light in all the islands in which the tree would grow. The nuts were baked in an earth oven, cracked, and the kernels threaded upon the midrib of a coconut leaflet. When lighted, they would burn with a smoky, flickering flame. Each nut left a large cinder which had to be knocked off as soon as the nut below caught fire, and the light required constant tending. In Hawaii and, rarely, in the Society group small stone lamps were used. They were filled with candle-nut oil, and had one or two floating wicks of tapa.

BASKETRY

Baskets were made everywhere in Micronesia and Polynesia (Fig. 24), but very few old specimens have been preserved. There is little information on the ancient forms and techniques. Checker-work and twilled baskets were in universal use. Twined basketry was highly developed in Hawaii, and was also used in the Marshall group and New Zealand. A coarse, open twining was used for fish-traps in all these regions, as well as in Fiji, Samoa, and probably elsewhere. Coiled basketry was used in the Carolines, Gilberts, and Samoa (Fig. 25). In the commonest form the coils were fastened together with strips of Pandanus which were knotted between the coils, giving the basket an open texture. In another type, which seems to have been limited to the Carolines, the texture was much closer, and the knots between the coils were introduced by a separate element.

The Tongans made some baskets of very close texture, but we do not know whether they were coiled or twined. Coconut and Pandanus leaves were the favorite basket-making materials in all the groups where these plants would grow. The coconut was universally used for the coarser types. The frond was split lengthwise, and the midrib pared thin. A section of the midrib was then bent, and its ends tied together to form the rim of the basket, while the attached leaflets were interwoven to make the sides and bottom. In oval baskets the bottom was usually reinforced with a braid. Young fronds which had just begun to unfold were used for the finer work. The material for

Pandanus baskets was prepared and woven as in mat-making.

The Maoris made most of their checker-work and twill baskets from *Phormium* or *Freycinetia* leaves,

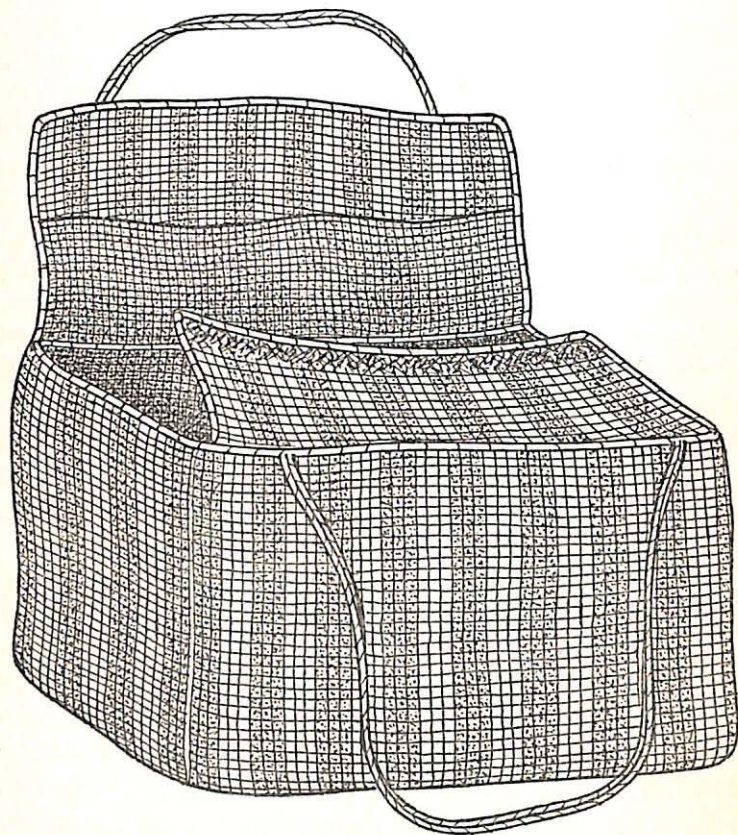


FIG. 24.

Common Type of Basket. Gilbert Islands. Case 5.

but employed many other materials, including strips of bark. They also made crude baskets from pieces of bark folded and tied. In both New Zealand and

Hawaii the fine roots of the *Freycinetia* were used for twined basketry. In the Marshall Islands soft, twined baskets were made from grass. In Ponape in the Carolines quite large baskets were sometimes made

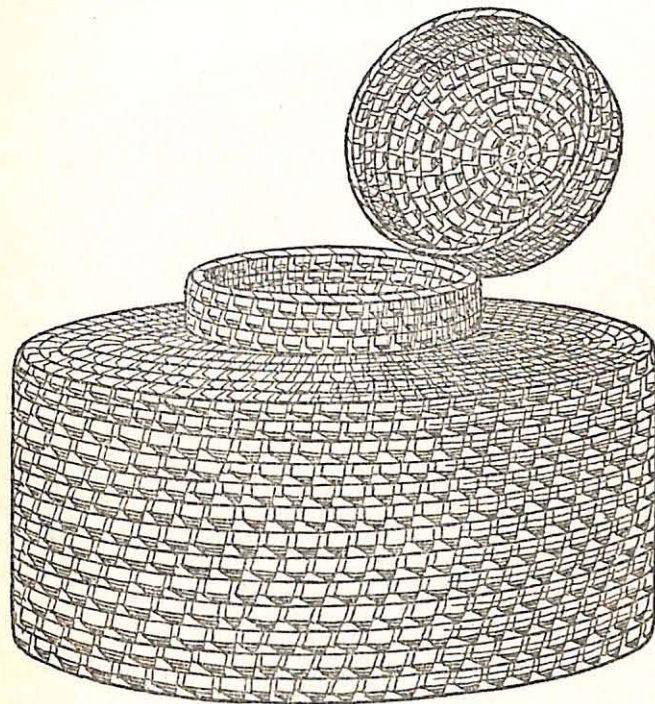


FIG. 25.

Coiled Basket Made from Thin Splints Fastened together with Strips of Pandanus Leaf. Gilbert Islands. Case 5.

from knotted *cinnet*. Mariner says that in Tonga the finer baskets were made from the fibrous roots of the coconut palm interwoven with *cinnet*.

Round and oval baskets were in universal use. Practically all coiled or twined baskets had these

forms, but they were also common in twill and checker-work (Fig. 26). Rectangular baskets of Pandanus or coconut seem to have been the most important in Micronesia, but were also common in Fiji, Samoa, and Hawaii. They were little used in the Marquesas and

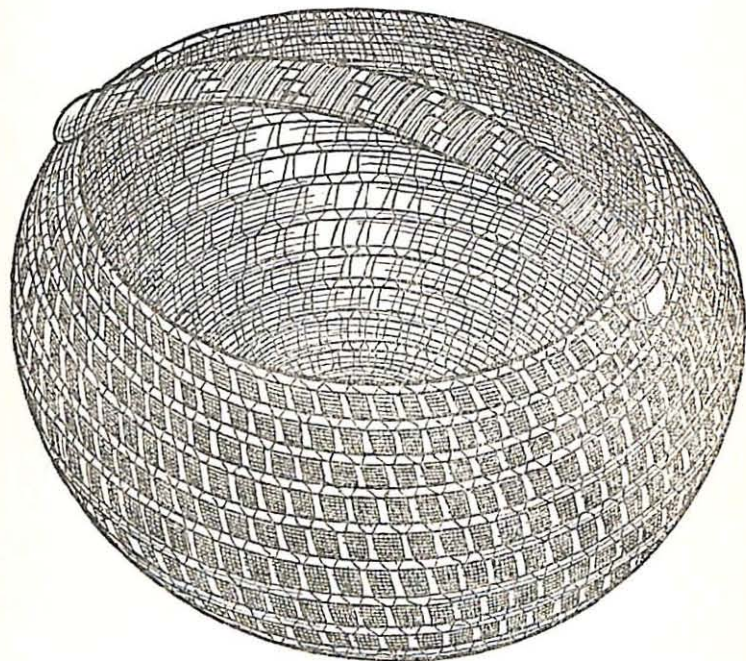


FIG. 26.

Basket of Thin Splints from Midribs of Coconut-palm Leaves.
Samoa. Case 28.

New Zealand. Those made in the Gilbert group were often quite elaborate with double walls, interior compartments and flap covers. The Fijian and Hawaiian ones were often made with a shoulder and a small central opening with a short neck. A close-fitting, woven cap was used as a cover.

Some of the Hawaiian specimens closely resemble common Malay forms. Flat, rectangular satchels seem to have been used throughout most of Polynesia and Micronesia, but their distribution cannot be determined at present. They were important in the Gilberts and New Zealand, but were rare or lacking in Hawaii. The finest Polynesian baskets were probably the large ones of Hawaii twined from *Freycinetia*, but the Tongan baskets were also very well made. In both these localities wooden vessels were often covered with basketry.

Most Polynesian and Micronesian baskets are undecorated. Dyed strips of the material were interwoven for form designs in the rectangular Pandanus baskets from the Gilberts, Fiji, and Samoa, and in the satchels from these groups and New Zealand. The New Zealand and Fijian designs were the most elaborate. Changes of technique were used with ornamental effect in the Hawaiian twined baskets, the Samoan coiled ones, and the Maori satchels. The Tongans sometimes stained their fine baskets in various colors and ornamented them by working in beads or shells.

TOOLS

The most important tool in both Micronesia and Polynesia was the adze (Fig. 27). Axes were almost unknown, their regular use being limited to a few tribes in the North Island of New Zealand. The adze-blades were made of stone or shell. Shell blades were the rule in Micronesia (Fig. 28), stone blades being used only on a few volcanic islands in the Caroline and Mariana groups (Fig. 29). In Polynesia the use of shell blades seems to have been limited to Tonga and the low atolls of the Tuamotu group, although a few of them were carried to New Zealand by native voyagers. Adze-blades made from whole mitre shells were used in a few of the Micronesian Islands which lie on the eastern edge of Melanesia, but throughout the rest of the area they were made from the shell of the giant clam (*Tridacna*). These shells reach an enormous size, and adzes made from them were sometimes as much as a foot long, three inches thick and four inches wide at the cutting edge (Fig. 28). The outer surface of the *Tridacna* shell bears a number of ridges which radiate from the hinge to the edge. In adze-making one of these ridges was broken away from the rest of the shell, the soft or defective material on its inner and outer surfaces chipped off and the outer end of the ridge ground to a cutting edge. In most cases the entire surface was ground and polished. Because of the original shape of the ridge such blades were commonly semicircular in cross section, and the cutting edge was also semicircular, like that of a gouge. They were shafted with the flat side of the

blade against the handle. The *Tridacna* shell is snow white, extremely hard and heavy, so that blades made from it were little if at all inferior to those of stone.

Stone blades were made from a variety of hard, close-grained volcanic rocks. In New Zealand the finest adzes were made from jade. In many of the islands there were regular quarries from which the stone for adze-making was obtained. Blades of volcanic stone

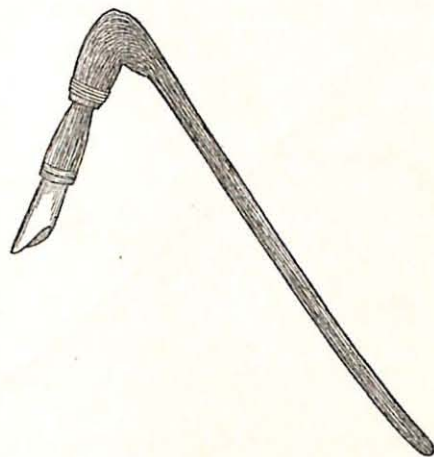


FIG. 27.

Adze with Shell Blade Set in a Wooden Socket which Fits into the Handle. Blade and socket could be turned so as to give the cutting edge any angle desired. Matty and Durour. Case 11.

were chipped or pecked into shape with hammer stones and later ground and polished. Grinding was done by rubbing the implement back and forth on a large rock, sand being added as an abrasive. The New Zealand jade implements were usually sawn into shape with flint flakes or thin sheets of gritstone. Large blocks of jade were cut with a flint flake set in a handle of vines and drawn back and forth by two men, like a crosscut saw.

The form and finish of the stone blades varied a good deal in different localities. It is possible to distinguish a number of types. Polynesian adzes as a whole were characterized by angularity, their faces being formed by a few nearly flat planes. They resemble most closely those found in the Malay Peninsula, Camboja, and China, and differ sharply from the ordinary Melanesian adzes, which have smoothly rounded contours. Small, rather thin blades of trian-

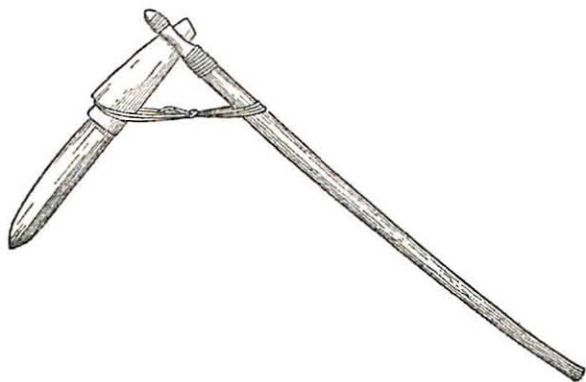


FIG. 28.
Large Axe with Blade of Tridacna Shell.
Matty and Durour. Case 11.

gular section, without grips, were used throughout the whole of Polynesia with the possible exception of Hawaii. They had straight cutting edges, and were hafted with the apex of the triangle against the handle.

Rather thick adzes of rectangular section with straight edges and pronounced grips were the normal type in Hawaii, and were important in the Marquesas, Society and Austral groups, as well as in the south island of New Zealand. In the Marquesas, Society

and Austral groups they seem to have been specialized implements used for the final dressing of planks. Thick, narrow adzes of triangular or semicircular section with well marked grips and curved cutting edges were important in the Marquesas, and were also used in the Society and Austral groups, as well as in New Zealand. They were hafted with the flat side against the handle. Except in the Marquesas they seem to have been specialized forms used for work in narrow places such as the bows of canoes or the ends of oval

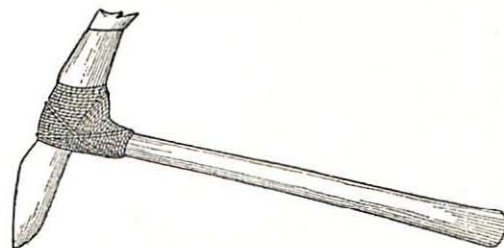


FIG. 29.
Stone-bladed Adze.
Tahiti. Case 19.

utensils. Many of them resemble the Micronesian shell forms; they may be copies of shell prototypes.

In the Society, Austral, and Cook groups the commonest type of adze was a rather thin blade of triangular section with a wide, straight cutting edge and small grip. There was often a distinct shoulder where the blade and grip met. It was hafted with the apex of the triangle against the handle. Blades of this type also occur as rather rare forms in New Zealand and the Marquesas.

Samoan adzes are usually triangular or quadrangular in section, but are hafted with the base of the triangle against the handle. They were usually crudely

handles of some were nearly five feet long, while those of others were thick and square. There is little information on the use of these adzes, but some of them

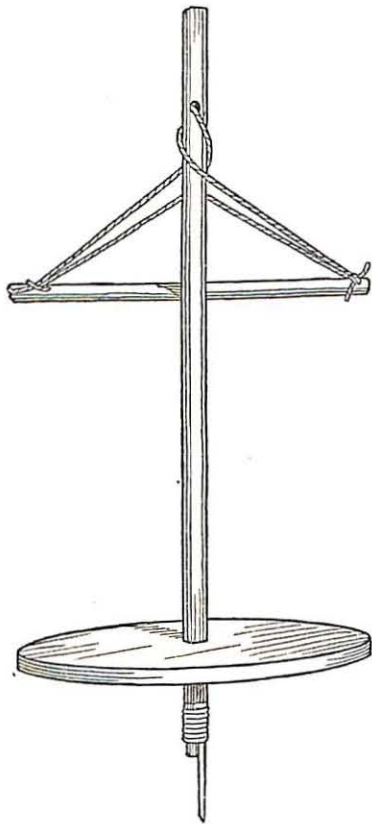


FIG. 30.
Pump Drill.
Gilbert Islands. Case 5.

seem to have been cult objects, worshipped as symbols of the gods, while others were carried by chiefs and priests in ceremonies.

The Maori had a peculiar tree-felling tool consisting of a large stone blade set in the end of a long, straight handle. This was either swung back and forth against the trunk by several men, like a battering ram, or a sapling was bent around the tree like a huge bow, and the tool fastened to the string and repeatedly drawn back and released. Two rows of holes were punched all round the tree, and the wood between chipped out with adzes.

Long, slender gouges and chisels of stone were important in Hawaii, the Marquesas, and New Zea-

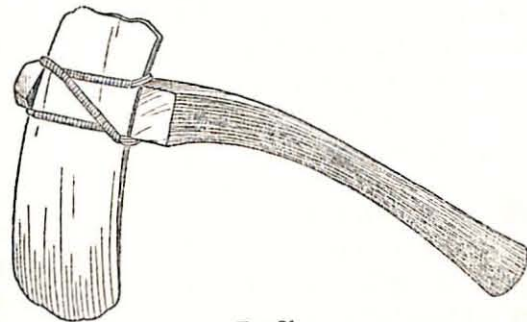


FIG. 31.
Hoe with Blade of Turtle-bone.
Mortlock, Caroline Islands. Case 7.

land, but seem to have been little used elsewhere. They were primarily wood-carvers' tools. They were usually held in the hand, without hafting, but both the Marquesans and Maoris had hafted chisels which were struck with wooden mallets. Small chisels and gravers made from shark-teeth or rat-teeth set in wooden handles were everywhere used for fine carving. Flat pieces of coral or lava were used to smooth the surfaces of wooden objects; and smooth pebbles, for burnishing in the Marquesas. Rasps and files were made from shark or ray skin wrapped about pieces

of wood while wet. A hoe with blade of turtle-bone was used in the Caroline Islands (Fig. 31).

Knives were usually made from shell or bamboo, but sharp-edged flakes of stone were also employed. None of the natives knew the art of pressure flaking, and they made no attempt to shape these stone knives or to resharpen them when they became dull. Knives made from a row of shark-teeth set along one side of a wooden handle were used for cutting up meat in Hawaii and New Zealand.

The pump-drill was in universal use (Fig. 30). This contrivance consists of a straight shaft passing through the centre of a disk of wood or stone. Cords are fastened to the top of the shaft and to either end of a short wooden bar. In use the cords are wrapped around the shaft, and the bar forced down, causing the shaft to revolve. The disk acts as a flywheel, and the shaft continues turning until the cords are wrapped about it once more. The drill-points were made from stone, shell, shark or rat teeth, or even from the spine of the sting ray.

MUSICAL INSTRUMENTS

Both the Polynesians and Micronesians were extremely fond of music, and most of them used a considerable variety of musical instruments. The only exceptions were the Gilbert Islanders, who are said to have had no musical instruments of any sort, accompanying their dances merely by clapping their hands. Drums were nearly universal. Large cylindrical drums with heads of shark or ray skin, which were set on end and beaten with the hand, were used in Hawaii, the Marquesas, Tuamotus, Society group, and possibly in the Cook group (Fig. 32). In the Marquesas the temple drums of this type were sometimes as much as eight feet high, and the temple precincts often contain stone platforms on which the drummers stood, resting their drums on the ground in front of them. Similar drums beaten with a stick of wood are recorded from Ponape in the Carolines, and the Marshall Islanders used a small skin-headed drum shaped like an hourglass. Little hand-drums made from large coconut shells with skin heads were used in Hawaii.

In Fiji, Tonga, Samoa, and the Cook group the ordinary drums were cylindrical or canoe-shaped, with solid ends and a slot along the side (Fig. 33). They were beaten with short wooden clubs, and could be heard for miles. The Maori used drums of this type and also great wooden gongs, sometimes as much as thirty feet long, which were suspended from a frame. Small drums made from joints of giant bamboo with a slot along one side were used in Fiji, Tonga, Samoa, and the Cook and Society groups. In Tonga, Samoa,

and Hawaii a series of bamboos of different length were thumped on the ground, closed end down, as an accompaniment to dances. A curious drum made from several joints of bamboo lashed together with their open ends covered with matting was limited to Samoa.

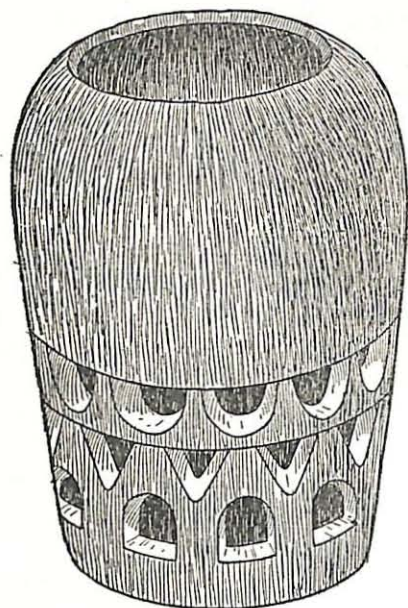


FIG. 32.

Large Wooden Drum Used in Religious Ceremonies and to Accompany Dances.
Hawaiian Islands. Case 34.

Stringed instruments were used only in Hawaii and the Marquesas. The Hawaiians had a three-stringed musical bow with bridges. The strings were plucked or tapped with a short stick. The Marquesans used a single-stringed bow, and seem to have also had a many-stringed instrument in ancient times.

Bamboo jew's-harps were used in Hawaii, the Marquesas, and Fiji, with a crude form in New Zealand.

There was a considerable variety of wind instruments. Nose flutes were used everywhere in Polynesia except Samoa, also in Fiji, but seem to have been unknown in Micronesia. Except in New Zealand, they were made from joints of bamboo. In playing these instruments the edge of the closed upper end of the flute was held against the septum of the nose, the outer nostril being closed with the thumb. The opening was not held tightly against the nostril, but at a short dis-



FIG. 33.

Canoe-shaped Wooden Drum Used to Accompany Dances and for Signalling.
Fiji. Case 20.

tance from it, the flute being inclined at the proper angle to set the column of air within it vibrating. There were two or more stops which were manipulated with the fingers. Mouth-flutes were used everywhere in Polynesia except Hawaii, in Fiji, and in Ponape in the Carolines. They were usually made of bamboo, but there is little information on their form.

The Marquesan flutes were closed at the upper end, and had a reed, made by shaving the bamboo thin. There were from two to four stops. The Maori flutes were made of wood or even bone, and were nearly always elaborately carved. Both the Marquesan and

Society Islanders knew that the pitch of a flute could be modified by changing its length, and both had developed tunable forms. In the Marquesas these were made from two pieces of bamboo which slid one inside the other, the lower piece being worked back and forth until the pitch was correct. Several flutes were sometimes tuned in this way and played together as an orchestra at dances.

Whistles seem to have been limited to the Marquesas and New Zealand. In New Zealand they were used primarily for signaling in war. They were about three inches and a half long, of hard polished wood inlaid with *Haliotis* shell, and were worn around the neck. Wooden trumpets were also limited to the Marquesas and New Zealand. In the Marquesas they were made from single pieces of wood hollowed out and provided with bamboo mouthpieces. In New Zealand they were made from two pieces of wood hollowed out and joined lengthwise. Shell trumpets were used everywhere. They were commonly made from Triton shells, but *Cassis* shells were used in Hawaii and to some extent in the Marquesas. In the Society Islands they were provided with bamboo mouthpieces, three feet long, which projected from the side at an angle. In the Marquesas nut shells, or very small gourds, also placed on the side, were used as mouthpieces. In New Zealand the mouthpieces were of carved wood, but were fastened to the tip of the shell. Elsewhere no mouthpiece was used. Panpipes, made from several pieces of bamboo of graduated length, were used in Fiji and Tonga.

Vocal music was also well developed, especially in Hawaii and the Society group. The Hawaiians had even advanced to the point of having choruses which

sang in parts. Modern Hawaiian music is largely the work of European composers, and the famous ukulele is a Portuguese instrument quite unknown to the ancient Hawaiians.

TRANSPORTATION

Land transportation was relatively unimportant. There were no draught animals or vehicles, and most of the roads were nothing more than narrow trails following the natural contours of the ground. Burdens were carried by means of a pole across the shoulder, an equal weight being hung at each end. The Maoris frequently carried burdens on their backs, but elsewhere the preference for the shoulder pole was so strong that when a native had an indivisible load, like a live pig, he would tie a rock to the other end of his pole to balance it and carry both. In the Society group chiefs often rode on the shoulders of attendants, but this was to prevent their feet touching the ground and rendering it *tapu*.

Water transportation was everywhere important. Canoes were in nearly universal use, but were lacking in a few localities (Plate X). In Mangareva, in the southern Tuamotus, the natives used triangular rafts with masts and sails. The Chatham Islanders used a semi-raft, shaped like a boat, with a wooden frame stuffed with bundles of the flower stalks of *Phormium tenax* or the bladders of the kelp-fish. Some of this craft were from thirty to thirty-five feet long. Balsalike rafts made from bundles of bamboo were occasionally used in most of the Polynesian groups. The Gilbert Islanders had carefully made rafts of squared timber which were used for fishing.

Simple dug-out canoes, made from single logs, were used in all the localities, where there was large enough timber. In Hawaii, the Marquesas, the Austral and Cook groups, Samoa and New Zealand the dugout

was modified by the addition of pieces at the bow and stern, which partially decked over the ends, and of a long plank or row of planks along each side. In Hawaii, the Marquesas, and New Zealand even the largest canoes seem to have been of this type. In the Marquesas the dugout body was sometimes lengthened by using two logs fitted together at the ends. In Hawaii great cedar logs from British Columbia, cast up as driftwood, were used for the largest craft. Throughout Micronesia and in Fiji, Tonga, Samoa, and the Society and Tuamotu groups, all but the smallest canoes were made from a number of pieces of wood accurately cut and fitted. This form of construction probably originated in the coral islands, where large timber for dugouts was lacking, but it made possible the construction of very large craft.

Williams gives the dimensions of a Fijian canoe, not the largest on record, as follows: "Length, 99 feet, 3 inches. Draught, 2 feet, 6 inches. Length of mast, 62 feet, 3 inches. Length of yards, 83 feet." In all the built-up canoes the parts were lashed together with cord. The seams were usually caulked with coconut fibre, and were sometimes pitched with breadfruit gum. In Fiji, Tonga, Samoa, and the Society group, the lashings passed through flanges left on the inner sides of the planks, and were invisible on the outside. The pieces were so closely fitted that the joints could hardly be seen. In Micronesia and throughout the rest of Polynesia, the lashing holes were cut clear through, so that the lashings were visible on the outside, and the seams were usually covered with strips of wood or bamboo.

In the Marquesas, Austral and Cook groups, and New Zealand, the bow pieces of built-up canoes with

dug-out bodies projected horizontally for some distance, usually terminating in a carved figure-head, while the stern piece bore a narrow upcurved fin which rose several feet above the canoe. The large Society Island canoes, although of plank construction, had either a projection or a high, upward curving piece at the bow, while the whole stern of the canoe was curved upward into the air. The Fijian, Tongan, Samoan, and Gilbert Island canoes, on the other hand, were flush for their entire length, although some of the smaller Samoan forms had a slight horizontal projection at the bow. The larger Marshall and Caroline Island canoes curved upward at both ends, having a profile not unlike that of an old Norse long ship.

Even the plank canoes were extremely narrow in proportion to their length and would capsize readily. Outriggers were in universal use, although they were becoming obsolete in New Zealand at the beginning of the historic period.

The outrigger was a straight log, somewhat shorter than the canoe, which was fastened to the canoe by crosspieces and floated in the water a few feet away from the side. There were two types of outrigger attachment. In one the crosspieces bent downward at their ends, and were attached directly to the float. In the other the crosspieces were straight, and a separate member was introduced between them and the float. The direct type was normal in Hawaii, and was used in ancient times in the Marquesas. In the Society Island fishing canoes, the attachment of the forward crosspiece was indirect; and that of the rear piece, direct. Elsewhere only the indirect attachment was used. None of the natives employed more than one outrigger in historic times. In the large Microne-

sian sailing canoes a platform was usually built on the crosspieces, and when the wind was from the outrigger side, men and cargo were shifted to this to hold the outrigger down. In Marshall Island canoes the hull was asymmetrical, being curved on the side away from the outrigger and nearly flat on that toward it.

Double canoes were in universal use in Polynesia and in Fiji, but seem to have been unknown in Micronesia. In Hawaii, the Marquesas, Society group, and New Zealand, they were made from two hulls of equal size joined together by numerous crosspieces. The crosspieces were decked over, and a small house was built on this deck if the voyage was to be a long one. The same hull might be used alone or as part of a double canoe. In Fiji, Tonga, and Samoa, the hulls of double canoes were of different size, and were lashed together permanently. The smaller hull was really an enlarged outrigger, the crew storing their supplies in it, but having their quarters in the larger hull and on the deck between the two. When sailing in a high wind, the smaller hull would often be lifted clear of the water.

Both paddles and sails were used for propulsion. The Chatham Islanders rowed their clumsy craft, facing the stern and bracing their oars against a tholepin, but this method was unknown elsewhere. It seems probable that very large double-sailing canoes were everywhere sculled in a calm, the paddlers dipping their blades vertically and levering them against the crosspieces between the two hulls. With these exceptions, the natives paddled in ordinary fashion, the paddlers being seated on thwarts, facing the bow. The Marquesans, Mangarevans, and Easter Islanders had a peculiar form of paddle with a broad, slightly

dished blade below which a curved knob projected. The blades of Micronesian, Maori, and to a lesser degree, Samoan paddles were narrow and pointed. The Fijian, Cook and Society group, and Hawaiian ones were broad and oval (Plate VIII).

Sails were in universal use, but there were important local differences in their form. They were commonly made of Pandanus matting, although a few of the easternmost Micronesians used cloth. Hawaiian, Marquesan, and Maori sails were in the form of a triangle with the apex at the bottom. One side of the sail was fastened to the mast, and the other to a boom which sloped upward at an angle of about 45 degrees. The Samoans used this form on their smaller craft, and the Society Islanders employed a modification of it. The Society Island sail was narrow and nearly oblong; the upper end of the boom was curved inward, like a crab-claw. The triangular sail was a rather poor contrivance. It gave little surface for its weight and size; it was impossible to tack with it.

In Fiji, Tonga, Samoa, and throughout Micronesia, the sail was of lateen type. It was triangular, with yards along two sides, and was suspended from the masthead. Its forward end, where the two yards joined, rested on the deck just behind the bow. A curious method was used in tacking. The ropes suspending the sail were slacked off, and the end of it which rested on the deck at the bow lifted bodily and carried to the stern, where it was fastened once more. As the two ends of the boat were exactly alike, the stern then became the bow, and the ship bore away on its new tack. In spite of the seeming clumsiness of this device, the lateen sail was highly effective. Captain Cook testifies that the natives could sail as close to the wind

as his own square-rigged ships, while the narrow beam and shallow draught of their canoes made them extremely fast.

WEAPONS AND WARFARE

The principal Polynesian and Micronesian weapons were the sling, spear, and club. The bow was important in Fiji and in Tonga, where its use in war was probably due to Fijian influence. The Tongan and Fijian bows were straight, from five to six feet long. The arrows were made from cane with barbed points of hard wood or bone, and had no feathers. A single Maori tribe is credited with using the bow as a weapon. The natives of Ponape, in the Carolines, also made a limited use of it, employing wooden arrows tipped with ray spines. The Ponapeans had traditions of a race of dwarf, black aborigines who used the bow in war. Throughout the rest of Polynesia and Micronesia the bow was employed only in hunting or for sport.

The sling was known everywhere, and was an important weapon in the Carolines (Fig. 34), Marshalls, Hawaii, the Marquesas, the Society and Cook groups, and to a lesser extent in Samoa. It was little used in the Gilberts, Tonga, and Fiji, while the Maori employed it mainly for hurling red hot stones into the besieged towns to fire the thatch. The Hawaiian and Marshall Island slings were crude affairs made from braided leaves. Those of the Carolines, Marquesas, and Society group were carefully plaited from coconut fibre or bark, and often showed beautiful workmanship. The Marquesans often wore theirs as headbands, especially when attending intertribal affairs which might end in a fight. The Marquesan and Society Island slings were sometimes as much as six feet long,

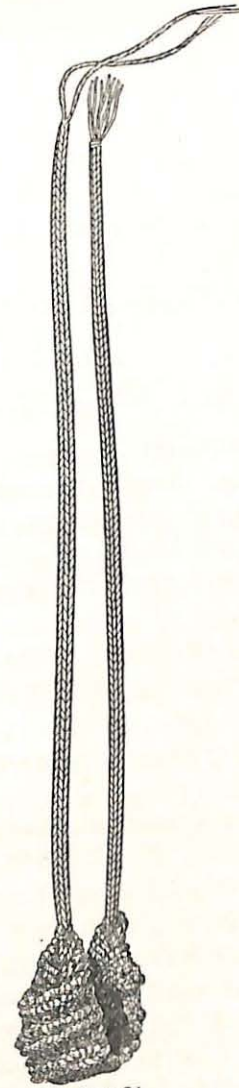


FIG. 34.
Sling.
Ruk, Caroline Islands. Case 7.

giving the slingers great range and force. Porter, who fought against the Marquesans, says their fire was almost as destructive as musketry. In the Carolines, Marianas, Hawaii, and the Marquesas, the sling-stones were carefully shaped cylinders with pointed ends. The rotation given to them at the moment of release made them fly and strike point first, like a bullet, while



FIG. 35.
Wooden Sword.
Matty and Durour Case 9.

their shape considerably increased the range. Warriors carried bags of these prepared stones with them, using rough stones at short range, or when their other ammunition was exhausted.

A wooden sword from Matty and Durour is illustrated in Fig. 35.

Spears were of many types (Fig. 36). Light javelins were used as missiles, and heavier forms at



FIG. 36.
Wooden Spear of Hard, Heavy Wood.
Viti Levu, Fiji. Case 25.

close quarters. The throwing stick was employed in the Pelews, but was unknown elsewhere. The Marquesans used a throwing cord, which made the spear rotate in flight and increased its accuracy, and the Maori had a throwing whip. This was a straight stick with a long lash. The dart was set in the ground at an angle, to the right of and slightly behind the thrower. The lash was wrapped about it, and it was jerked

upward and forward by a quick movement of the thrower's body and arms. Sometimes two men would wrap their whips around a bundle of darts and hurl them at a single cast. The whip gave long range, but little accuracy; it was mainly used against besieged towns. Javelins were, as a rule, less elaborately made than the heavy spears, and were often nothing more than hardwood sticks sharpened to a point. Javelins with carved wooden barbs, or tipped with ray spines, were occasionally used everywhere, while the Marquesans had a type in which the shaft was pierced below the head, so that it would break off in the wound.

Thrusting spears were used everywhere; there were a great variety of forms. In the Pelews and Carolines they were made of bamboo, about twelve feet long, with barbed heads of hard wood or ray spines. The Marshall Islanders used plain or barbed wooden lances. In the southern islands of this group the spears were sometimes edged with shark-teeth, as in the Gilberts. The Gilbert Islanders used plain unbarbed lances of heavy wood, lances with long wooden guards made from separate pieces of wood lashed to the shaft, and lances set with rows of shark-teeth. The Fijian spears were the most elaborate in the region. They were made from single pieces of wood, from twelve to eighteen feet long, the first two to three feet of the shaft being carved into long barbs and often decorated with elaborate sennit lashings. They were often tipped with bundles of ray spines. The Tongans also used elaborately barbed spears, but there is no information on their form. Samoan spears were made from coconut wood, and were about eight feet long. They were triangular in section for the first two or three feet, and were carved with rather short, but

elaborate barbs which pointed both forward and backward. Plain spears tipped with ray spines were also used.

Barbed spears very much like the Samoan ones were likewise used in the Cook group, but the favorite type there had a long, broad, diamond-shaped head with a longitudinal rib and no barbs. The butt of this spear was also sharp, and low ridges were left around the shaft at the base of the head and about a foot above the butt. These weapons were commonly from eight to ten feet long, and were used for both striking and thrusting. Similar spears about six feet long were used by the Urewera tribe of the Maoris. There can be little doubt that the spears of this type are wooden copies of metal forms, but it is impossible to tell how or when the Polynesians became acquainted with such weapons. They show little resemblance to any of the types used in Malaysia in historic times.

The Hawaiians, Marquesans, and Society Islanders used heavy spears of iron wood from ten to twenty feet long. These were plain, or had low, backward sloping barbs along one or both sides. The Marquesans also had a peculiar form with three long barbs, deeply notched at the base, on one side. When an enemy had been impaled, the shaft was broken off behind the first barb by a quick twist, leaving the head in the wound. A second and a third thrust could then be delivered. The ordinary Maori spear was from four to six feet long and perfectly plain, except for one or two bands of carving. There were also slender spears, sometimes as much as forty feet long, which were thrust between the palings of stockades, spears with from two to four points, and spears with barbed heads of wood or whalebone which would break off in the

wound. The Easter Islanders used spears and javelins tipped with roughly chipped pieces of obsidian.

Clubs were used everywhere (Figs. 37-46), but were relatively unimportant in Micronesia. In the Pelews the chiefs used slightly curved, wooden sabers, sharpened on one edge. The natives of Kusaie in the Carolines used long, rather slender clubs with blades



FIG. 37.
Wooden War-club.
Kusaie, Caroline Islands. Case 7.

of diamond-shaped section, which were of the same width as the handle. The tip of the club was sharply pointed, and the butt was forked. These clubs were probably used for stabbing as well as striking. The natives of Ruk, in the same group, used short, crudely made paddle clubs. The Gilbert Islanders used rather short, but extremely heavy, pointed clubs with small

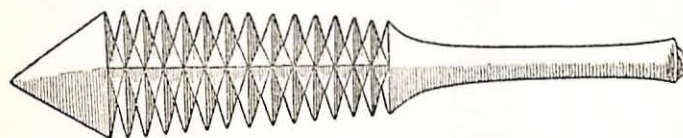


FIG. 38.
Toothed Wooden Club.
Samoa. Case 27.

grips and long blades of diamond-shaped cross section. They also used round clubs like bats. The clubs from Matty and Durour, small islands lying off the north-east coast of New Guinea, are of especial interest. Their inhabitants used long, heavy wooden swords which are close copies of metal swords, and resemble the head-knives by some of the peoples of Borneo and

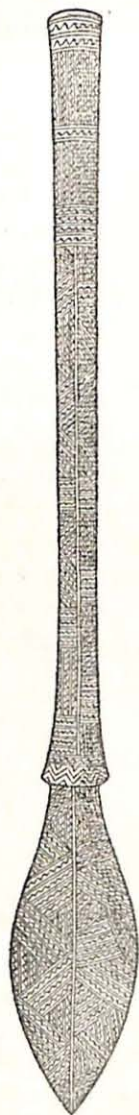


FIG. 39.

39. Wooden Paddle-club. Samoa. Case 27.



FIG. 40.

40. Wooden Bat-club. Tonga. Case 27.

the Philippines. They also had bat clubs and a combined club and spear, which had a long barbed point projecting below the grip. The natives of Lord Howe Island (Ontong Java) used short clubs of whalebone very much like some Maori forms.

In Fiji the club was the most important weapon, and was made in many forms. There were a number of types of bat club, the simplest being nothing more than sections of hardwood saplings stripped of their

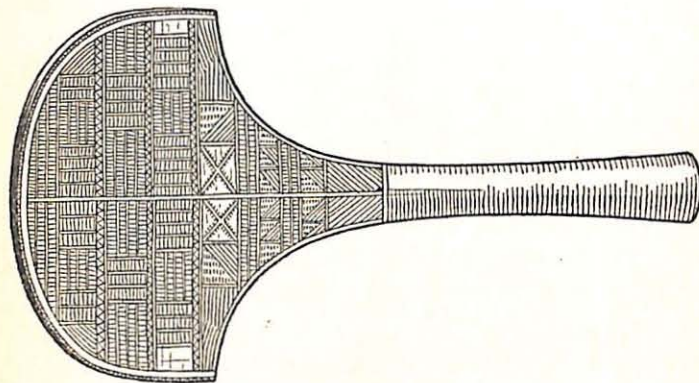


FIG. 41.

Wooden Mushroom Club.
Samoa. Case 27.

bark. Sometimes the sapling was uprooted, and the roots trimmed off to form a knotty mace (Fig. 45). In another form the blade above the grip was diamond-shaped in section, gradually widening and thickening toward the tip. In still another the whole club above the grip was covered with low bosses. Paddle clubs with broad, sharp-edged blades were favorite weapons. There were also several curved forms some of which had broad, flat blades, while others (pineapple clubs) ended in a mass of bosses from which a single sharp

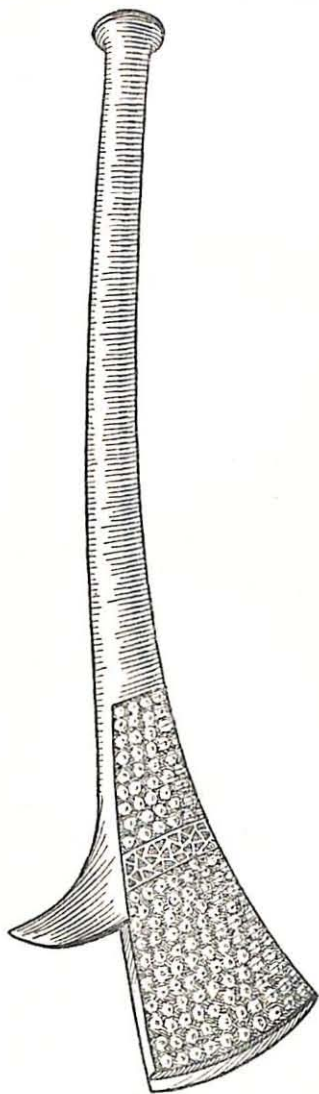


FIG. 42.
Hooked Club.
Fiji. Case 25.

spike projected downward (Fig. 44). All the curved types were peculiar to Fiji. The Fijians also used short throwing clubs with heavy round or knobbed

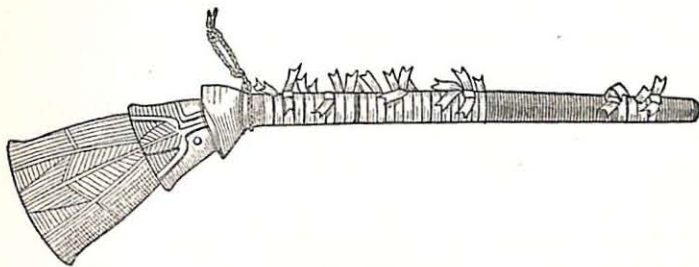


FIG. 43.
Lotus Club.
Fiji. Case 25.

heads and quite thin handles (Fig. 46). Each warrior usually carried two of these, hurling them before he came to grips with the enemy. Nearly all the better Fijian clubs were carved; their handles were often decorated with elaborate wrappings of dyed sennit.

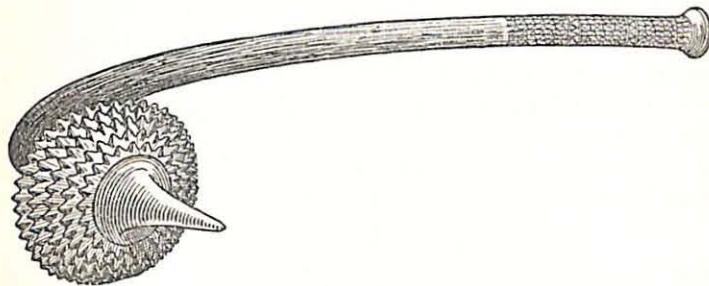


FIG. 44.
Old Pineapple Club, with Carved Handle.
Fiji. Case 25.

Clubs were the favorite Tongan and Samoan weapons. The Tongans seem to have preferred bat clubs of round or diamond-shaped section with bluntly

pointed ends. Their weapons of this type are beautifully balanced, and must have been very effective. Paddle clubs were also important. The Samoans also used the bat club and paddle club, but had certain local types as well. Short, heavy clubs with a very broad, flat head (mushroom clubs) were limited to Samoa (Fig. 41), as were clubs with flat blades carved into teeth along the edge. Some clubs were toothed on both sides, while others were toothed along one side and ended in a recurved hook, said to have been used to carry the heads of slain enemies (Fig. 38). Short throwing clubs of Fijian type were used in both Samoa and Tonga. In historic times blubber knives, obtained from white whalers, were favorite Samoan weapons. The Niue Islanders used long clubs with flat sickle-shaped blades and straight broad-bladed clubs ending in a spike. The favorite clubs of the Cook Islanders had long, flat, diamond-shaped heads, much like those of the spears from this group. The edges were sometimes notched or serrated. These clubs were sometimes as much as eight feet long. The Society Islanders used shorter clubs with heads of the same shape and also simple bat clubs. The Marquesans used very long paddle clubs and shorter clubs with broad heads carved into conventionalized human faces (Plate IX). Both these types were extremely heavy and unwieldy. The Hawaiians used bat clubs and also short clubs with lobed stone heads, lashed to the end of a wooden handle.

The Maori clubs were unlike those found in any other part of the Pacific. The favorite weapon of the Maori was a very short, flat-bladed club of stone, whalebone, or wood with sharp edges (*mere*). This was used primarily for thrusting, the warrior attempt-

ing to drive the end of his club into his enemy's temple, under the angle of his jaw, or under his ribs. The most valued clubs of this type were made from jade and sometimes required years of labor (Fig. 49). Those made from wood or whalebone were often elabo-



FIG. 45.
Wooden Club Made from Saplings with the Root Lopped off.
Fiji. Case 25.

rately carved and inlaid with haliotis shell. A good collection of these weapons is on exhibition. A wooden quarter staff (*taiaha*) was also important. This was usually about five and a half feet long, with a rather narrow, sharp-edged blade and a carved spike or tongue below the grip (Fig. 50). It was used as a com-

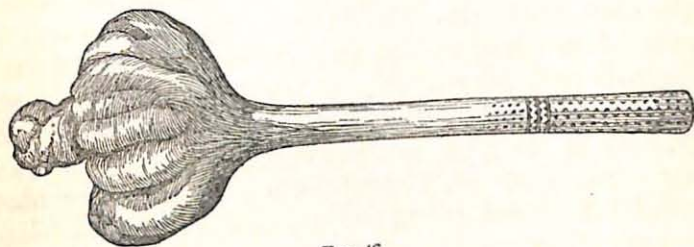


FIG. 46.
Throwing Club Used as Missile.
Fiji. Case 25.

bined club and spear. There was a science of *taiaha* fencing with properly named points and guards. The *tewha-tewha* was a straight club pointed at the lower end and having a broad, flat blade projecting from one side of the upper end (Fig. 51). The blow was

delivered with the straight edge opposite the blade. Both *taiaha* and *tewha-tewha* were carried by chiefs as emblems of authority. Staves very much like the *taiaha*, but without the pointed tongue, were carried as emblems of authority in the Marquesas, Mangareva, and Easter Island.

An unhafted stone adze-blade, held in the hand, was used as a weapon in both Hawaii and New Zealand. Adzes, often elaborately carved, were used as weapons by the Maori and possibly in the Cook group. Daggers tipped with ray spines were used throughout Micronesia and in Fiji, Tonga, and the Society group. Daggers of hard wood were important weapons in Hawaii. Daggers of wood, whalebone, or even stone were often used in New Zealand. Double-pointed, wooden daggers were important in the Australs, and were also used in the Gilberts and Marquesas.

Cutting weapons edged with shark-teeth were important in the Gilbert and Society groups, but were little used elsewhere. The Gilbert Islanders had many types of spears, swords, and daggers (Figs. 47-48). The body of these weapons was made of coconut wood, the shark-teeth being drilled through the base and attached in rows by lashings of fine cinnet or human hair cord. They were often forked, or were provided with long curved guards, also edged with teeth. The Society Islanders had a weapon made with four or five long prongs edged with teeth and also a long-handled club with a flat, sickle-shaped blade with teeth along the inner edge. Ellis says that these were the most terrible of all the native weapons and would disembowel a man at a single stroke.

Most of the Polynesians and Micronesians had no defensive armament. Shields were unknown. The

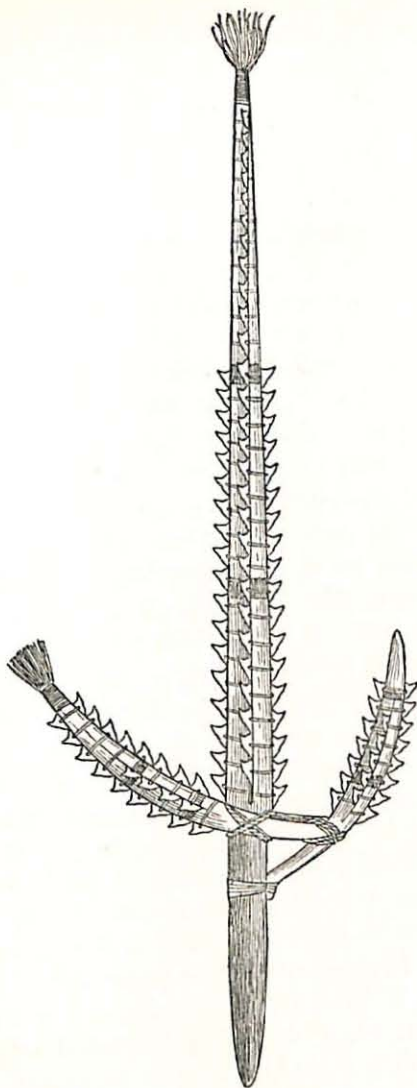


FIG. 47.
Dagger Used in Hand-to-hand Fighting.
Gilbert Islands. Case 3.

Hawaiians had helmets of wickerwork covered with feathers, but although these were strong enough to turn a blow, they were worn for decoration rather than defence. The Maori sometimes wore heavy, closely twined robes strong enough to stop a spear thrust. The use of true armor seems to have been practically limited to the regions in which shark-tooth weapons were important, and it seems probable that it was developed as an answer to them. The armor of the Gilbert Islanders, shown in Case 2, was quite elaborate (Plate XII). It consisted of a flexible under suit, made in either one or two pieces which covered everything but the head, hands, and feet. This was knotted from heavy cinnet. Over this was worn a stiff cuirass with a high collar to protect the back of the head. It was made from thick rolls of coconut fibre sewn together with cord, much as in coiled basketry. Helmets were made from fibre, like the cuirass, or from the dried skins of blow fish. A broad belt of fibre or ray skin was often worn around the waist, over all. The complete suit weighed from fifteen to twenty pounds and made the wearer so unwieldy that each armored man was attended in battle by an unarmored squire, who passed him weapons and otherwise aided him.

Ellis says of the Society Islanders, "Some of the fighting men wore a kind of armor of net-work, formed by small cords, wound round the body and limbs, so tight as merely to allow of the unencumbered exercise of the legs and arms, and not to impede the circulation of the blood: or the Ruuruu, a kind of wooden armor for the breast, back, and sides, covered with successive folds of thick cloth bound on with ropes. . . . The head was guarded with a corresponding quantity of cloth; and thus defended, the warrior, secure against

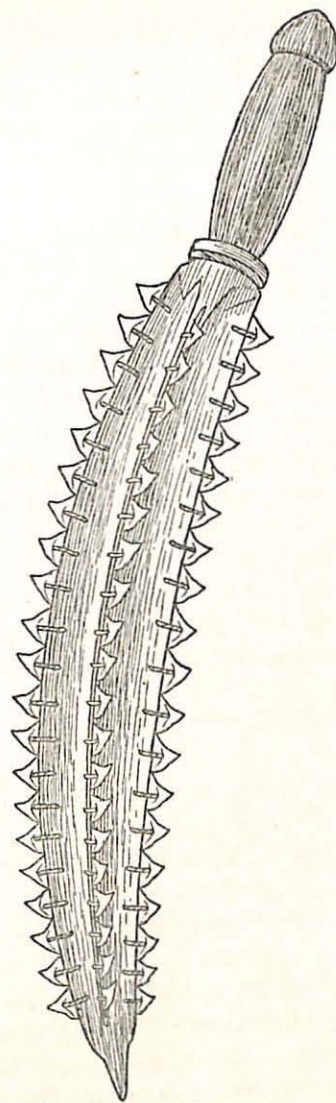


FIG. 48.

Curved Sword Set with Shark Teeth. Gilbert Islands. Case 3.

either club or spear, was generally stationed with the main body of the army, though so encumbered as to render retreat impracticable, and, in the event of the defeat of his companions, was invariably captured or slain."

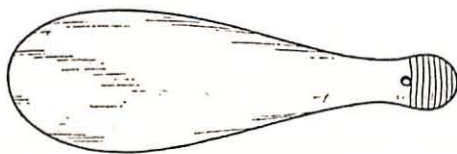


FIG. 49.
Jade Club (Mere) of Maori Chief.
New Zealand. Case 38.

The Micronesians rarely made use of fortifications, although stockaded towns are reported from the southern part of the Gilbert group. The Fijians regularly fortified their villages with moats and stone-faced earth ramparts surmounted by reed fences or stockades. All the Polynesians probably made some use of fortifications, but they seem to have been rela-

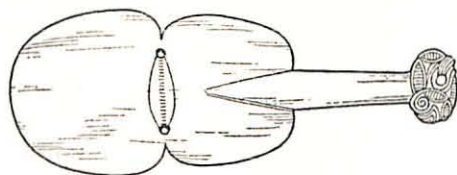


FIG. 50.
Stabbing Club of Whalebone.
Maori, New Zealand. Case 38.

tively unimportant in Hawaii, the Society and Cook groups. The Maoris were the only Polynesians who regularly fortified their villages. They employed ditches and stockades with platforms and, in later times, even towers several stories high. There were

often several lines of defences, one within the other. Attackers carried on regular siege operations, encircling the town with a stockade to cut off relief, building towers to match those of the fort, and advancing to the attack behind large sapping shields pushed by twenty men. In time of war the Tongans also fortified their towns with stockades which had projecting platforms screened and loop-holed for archers. The Marquesans had stockaded forts with platforms, while the Samoans used simple stockades. Both made a considerable use of stone forts and breastworks.

The Micronesians, except the Gilbert Islanders, do not seem to have been especially warlike. In the



FIG. 51.
Carved Wooden Club.
Maori, New Zealand.

Pelews, Carolines, and Marshalls combats from canoes, without great loss of life, seem to have been the rule. The Fijians were split up into a great number of small tribes who were constantly at war, but their warfare was one of skirmishes and raids without much bloodshed. Villages were often besieged, but rarely assaulted. In Samoa and Tonga warfare was usually connected with dynastic struggles. There were long periods of peace. At such times the Tongans often went to Fiji and served as mercenaries under native chiefs. Throughout the rest of Polynesia complete peace seems to have been exceptional. In the Marquesas and New Zealand some of the tribes were

always at war, while in Hawaii and the Society group the tribes on one island, when at peace among themselves, would usually attack those of some other island. Any slight or injury, no matter how small, might be made an excuse for war. If the tribes engaged were related to each other, peace was usually arranged before there had been heavy losses on either side; but, if they were of different stocks, the war was carried on until one side had been enslaved or exterminated.

Warfare was everywhere surrounded with elaborate religious observances. Among the Maoris the warriors were purified and dedicated to Tu, god of war, before they set out; and a special sacrifice was made to the gods. Each veteran recited an incantation, which was a family secret, over his weapons to render them invincible. One or more priests accompanied the war party and watched for omens. There were a great number of these; and, if the party encountered a series of unfavorable ones, it would probably turn back. Any man who crossed the path of a war party, whether friend or foe, was killed at once. If he was spared, misfortune was sure to follow. Before a strong fort was assaulted, a close relative of the chief was often sacrificed. While the war party was away, the people in the village were tabu and could eat no food.

In the Society group a declaration of war was always preceded by a human sacrifice to the god Oro. Many other sacrifices, varying in number with the importance of the operations, were made before the party set out. While the warriors were assembling and making their preparations, the priests prayed for some days, and were three times rewarded by the chiefs with rich gifts. A special house was built for the gods. This was dedicated with a human sacrifice, and had to

be completed in a single day during which the whole population lay under a strict tabu. On that day no one could eat, light a fire, or launch a canoe. Lastly, small temples were erected in the canoes, and many hogs were offered, their heads being placed before the idol, while the priests ate the flesh. Red feathers, taken from the idol, were carried by the party. The idols themselves were often taken along in the canoes. As all their battles were fought near shore, a fleet usually accompanied each army. In Hawaii a chief who wished to go to war made many sacrifices and often restored old temples. When the armies were drawn up in battle array, a soothsayer was called on to say whether the omens were propitious. Two fires, one for each side, were built in the space between the armies, and a pig offered to the gods on each. Battle was not joined until the offering had been completed.

Although all the Polynesians were courageous in attack, they were less steady than white troops, and would usually break at the first serious reverse. Some battles were bitterly contested, however, and the Tongans, Hawaiians, and Maoris seem to have been able to stand a good deal of punishment. The Maoris were especially brave and, although cruel, were not lacking in chivalry. They would often send a warning to a besieged town the night before an assault. There are many instances of personal magnanimity to enemies taken at a disadvantage. Captured enemies were killed or enslaved, and even when enslaved were liable to be put to death at any time.

In Micronesia the taking of heads seems to have been limited to the Pelews. Wilson says that the head of a slain chief was exhibited outside the victor's house and that there was a row of enemy skulls above

the door of one council-house. In the Gilberts enemy skulls were sometimes used as drinking cups. In Samoa and possibly in Tonga the heads of enemies were carried to the chief, who praised the warriors, but they do not seem to be preserved. Both the Marquesans and Maoris kept the heads of enemies as trophies. The former cleaned the skulls and decorated them with boars' tusks and inset eyes of pearl-shell, while the latter smoked the heads of important chiefs and exposed them on their palisades or on poles by the way-side.

CANNIBALISM

Cannibalism was everywhere intimately connected with war. As a rule it was only slain enemies who were eaten, although all the groups in which the practice prevailed, and even those in which it was unknown in historic times, had legends of depraved individuals who developed a taste for human flesh and devoured their own people. Habitual cannibalism was lacking in Micronesia, although the Gilbert Islanders sometimes ate some of their enemies' flesh. In Fiji cannibalism was commoner than in any other part of the Pacific. The victims were usually enemies, but the bodies of commoners who had been sacrificed were also eaten. Shipwrecked strangers were always eaten, being said to have the salt upon them. Some of the Fijians developed a great fondness for this food. One chief, Ra Undreundre, ate about nine hundred persons during his life. Another man, personally known to one of the early missionaries, killed and ate his own wife. Human flesh was always cooked separately, and the utensils used in preparing it were tabu for other purposes. It was commonly eaten with large wooden forks. It was rarely eaten by women, although not absolutely tabu to them.

Cannibalism seems to have been practised to a very limited extent in Samoa and Tonga in ancient times. In Samoa the bodies treated in this way were usually those of enemies notorious for their cruelty; the practice had almost died out by the beginning of the historic period. In Tonga cannibalism seems to have been on the increase in recent times, due to the

close contact between Tonga and Fiji. The Hawaiians and Society Islanders felt as great a horror of cannibalism as Europeans. The Marquesans, Maoris, Easter Islanders, and the natives of the Cook group were inveterate cannibals. The Maoris considered the flesh of their enemies as one of the most important spoils of war, cutting up the bodies of the slain after a battle, boning them and packing the meat in baskets. In all these localities the flesh of enemy women and children was also eaten, but human flesh was generally tabu to women, and no one ate that of a member of his own tribe.

Many theories have been advanced to account for the origin of cannibalism, but there is no one theory which seems to cover all the facts. Probably it arose in different ways in different places. Polynesian cannibalism certainly was not due to lack of other food, for the women, to whom human flesh was everywhere tabu, got along very well without it. Simple hunger cannibalism in time of famine was certainly no more frequent in this region than in Europe. An idea of revenge was present, for all the Polynesians had a feeling that food was, to some degree, unclean; and to use an enemy for food was to degrade him utterly. There are also some indications of the presence of the very wide-spread belief that by partaking of the flesh of a person or animal the eater can acquire some of the victim's qualities, but while this might account for the eating of warriors, it would weigh against the use of women's and children's flesh. However cannibalism may have originated, it was no doubt stimulated and kept alive by the native attitude toward persons outside the immediate group. Civilized man bases his distinction between men and animals on biological

grounds, and considers all human beings as his relatives. The uncivilized man, on the other hand, draws his line at the limits of his own tribe, strangers and animals alike being outside the pale. To the ordinary Polynesian an unrelated enemy was a being of a different order, and he felt that there was no more reason for not eating him than for not eating a pig.

GAMES

The Polynesians and Micronesians had a great variety of sports and pastimes, but the information for a great part of the region is unsatisfactory. Wrestling seems to have been universal, and was fairly scientific, with many names for grips. Hawaiian chiefs kept wrestlers in their retinues. In the Society group the sport was so popular that even women of royal blood sometimes entered the ring themselves. Boxing was important in Hawaii, the Society group, and Tonga, but was in less favor than wrestling. The boxers were usually commoners and fought with bare fists, relying on strength rather than skill. Foot racing was universal. Football was played in the Society and Gilbert groups, the ball being a cube of Pandanus matting stuffed with leaves. The object of the game was to force the ball over the enemy's goal line. Whole districts often played against each other. A rougher form of this game, in which the hands instead of the feet were used, often resulted in serious injuries. In the Society group the men played shinny, using curved sticks and a small ball of tightly wrapped tapa.

The sport of throwing spears at a mark was universal. In Fiji, and throughout most of Polynesia light darts were thrown along a level course in such a way that they struck the ground and glanced, the man whose dart traveled farthest being the winner. Archery as a sport was regularly practised only in the Society group, and possibly in Fiji and Tonga, where the bow was an important weapon. The Society group archery was accompanied by many religious ob-

servances, and was really a sacred sport. The bow was never used in war. The archers wore special costumes. These, together with the bows, arrows, and quivers, were kept between contests by an appointed keeper. The shooting ground was a long, open space with a low platform of stone at one end. The bows were straight, about five feet long. The arrows, from two to three feet long, were made of bamboo with unbarbed heads of ironwood, and had no feathers. The archers knelt on one knee on the platform, and shot for distance, the maximum range being slightly over three hundred yards. Before the contest began, the contestants went through ceremonies in the temple, and put on the archers' costumes. After it was completed, they had to return to the temple, deliver up their weapons, change their clothes and bathe before they could eat or return home.

Stilt walking was an important sport in the Marquesas and New Zealand, and was practised to some extent in Hawaii and the Society group, but seems to have been unknown elsewhere. The stilts were shaped much like modern European ones, with steps made from separate pieces of wood and long shafts which were held in the hand. Marquesan stilt steps were usually carved into small wooden figures. The Marquesans were especially expert at running races on stilts and engaging in sham fights, each man trying to knock out his adversary's stilts by quick blows from his own.

Bowling was important in Hawaii, the natives using carefully made stone disks, which were rolled along a level course. A similar game is recorded from the Cook group, but seems to have been unknown elsewhere.

Coasting was a favorite sport of adults in Hawaii and of children in New Zealand. In both places special slides were constructed for the purpose. The Hawaiian slides were carefully made of beaten earth covered with long slippery grass. Their sleds had runners of polished wood with crosspieces and boards for the coaster to lie on. The Maori sleds were simple toboggans made from a single plank about three feet long and four inches wide with rests for the feet.

Kite flying was important in New Zealand and the Cook group, and was known in the Marquesas. The best kites were made of tapa over a frame of light wood, and were flat, with long tails. Those of the Maoris were sometimes made in human or other grotesque forms.

Cock fighting was a favorite sport in Hawaii and the Society group. In it, and in most of the athletic sports, large wagers were often laid.

There were a great variety of toys and children's games. Whipping tops were in general use. The Maoris also had humming tops, spun with a cord, which were used as toys and also in a peculiar mourning ceremony performed when friends came to condole with a defeated tribe after a battle. A form of cup and pin game is reported from the Marquesas. The Maoris had wooden jumping jacks worked with cords, hoops, and many other toys. Juggling was universal, and so were the use of cat's cradles, figures made by interweaving strings between the hands.

All the natives were expert swimmers, learning to swim almost as soon as they learned to walk. Children spent a good deal of their time in the water, and the older people bathed at least once a day. There were no organized water sports, but young men and women

often contested in swimming and fancy diving. The Polynesians were the inventors of the surf board, and surf riding was an important amusement in Hawaii. In Fiji, the Marquesas, and Society group the surf board was rarely used by adults. In western Polynesia and Micronesia it seems to have been unknown.

ART

Polynesian and Micronesian art is primarily decorative (Figs. 52-59, Plates II-III). It was a love of design and color for their own sake which led the natives to ornament their garments and utensils. Most of the designs were named, but it seems doubtful whether symbolism or a belief in associative magic was present in any of the secular work. Magical ideas may have been present in the case of images and other religious objects, but even in these aesthetic considerations were never lost sight of; for instance, the ceremonial paddles from Mangaia (shown in Case 32) are carved with many repetitions of a conventionalized human figure representing a god. The use of these figures was probably believed to increase the *mana* (indwelling power) of the adze, but the artist treated them purely as designs, arranging them and modifying them to suit his fancy.

Micronesian art is comparatively poor. The only people to make any extensive use of decoration were the Pelew Islanders, who ornamented their town houses and other sacred structures with carved human figures and with painted friezes depicting men and animals of all sorts. Although the painted figures were conventionalized, they were bold and possessed considerable artistic merit. A few plant forms and a number of simple angular designs were also used. Utensils and weapons were sometimes decorated with mother-of-pearl inlay.

The Caroline Islanders carved a few of their implements with angular designs, and used simple pat-



FIG. 52.
Pattern on Maori Rafter. (After A. Hamilton)

terns, usually stripes, in their textiles. In the Marshalls decoration was practically limited to the borders of the women's mat skirts, which were embroidered with angular designs. In the Gilberts baskets were decorated with angular designs, and armor was sometimes ornamented with diamond-shaped figures or conventionalized outlines of fish. Except for occa-

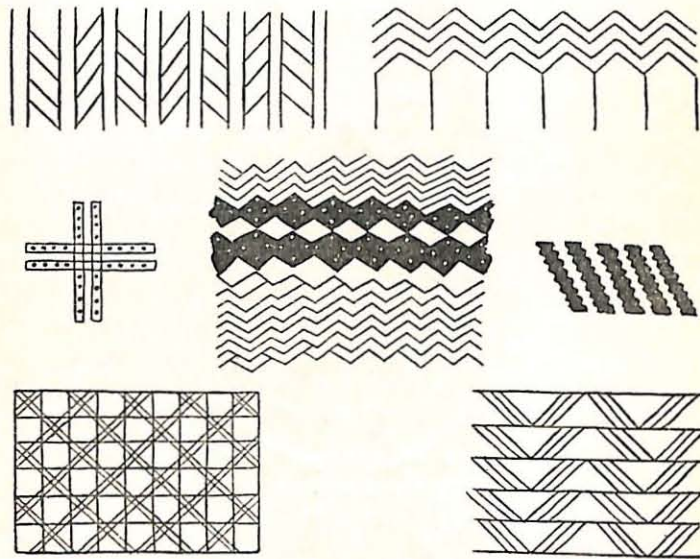


FIG. 53.
Tapa Designs, Hawaii.
(After Greiner)

sional images, used as cult objects, wood carving seems to have been unknown in the Marshalls and Gilberts. Throughout the whole region, ornamental lashings, made by interlacing strings of cinnet dyed in different colors, were important as house decoration, and were used to a lesser extent on tools and weapons.

The art of Fiji is much like that of the neighboring Polynesian groups, but is characterized by greater boldness and force. The principal media were carving and painting on tapa. The designs were nearly all angular and geometric, although a few naturalistic outline figures of men and animals were used in carvings on clubs and some more or less conventionalized plant forms in tapa painting. Much of the tapa painting shows a bold and effective use of black on white. Pot-



FIG. 54.
Design on Canoe Paddle, Marquesas.
(After Greiner)

tery was sometimes modeled in the form of fruit or vegetables. The priests' oil-dishes were made in fantastic shapes, some of them representing animals or birds. Mats were woven in simple patterns, and cinnet lashings were important.

The art of Polynesia is unusually rich, the principal media being wood carving, painting on tapa, and tattooing. Carving was universal, but was least developed in Hawaii, where it was rarely applied to ordinary implements and utensils. Inlaying, as an

adjunct of carving, was practised in Tonga, Manahiki, Hawaii, and New Zealand. In the last two localities it was practically limited to inserting shell eyes in carved faces. In Samoa an effect somewhat like inlay was obtained by filling carvings with hard lime-plaster and rubbing the whole surface smooth. Tapa painting was

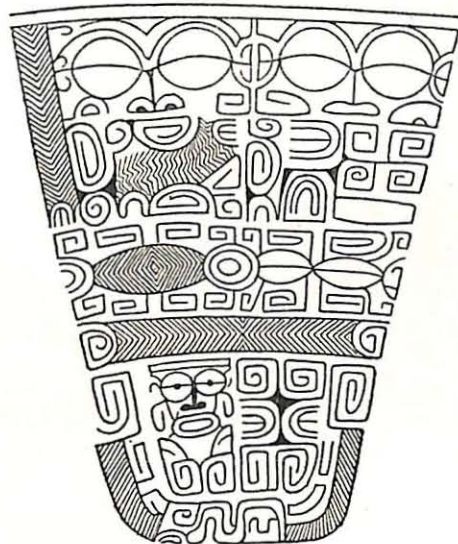


FIG. 55.
Design on a Bowl, Marquesas.
(After Greiner)

important in Tonga, Samoa, the Cook, Austral and Society groups, as well as in Hawaii (Fig. 53 and Plates V-VII), but was lacking in the Marquesas. Painting on wood was limited to New Zealand (Fig. 52).

Tattooing was universal, but was finest in New Zealand and the Marquesas. Ornamental cinnet

lashings were important in Tonga, Samoa, the Cook, Austral and Society groups, and the Marquesas, but were almost unknown in Hawaii and New Zealand. The Tongans, Samoans, Hawaiians, and Maoris decorated their mats with simple patterns. The Maoris used rather elaborate designs on their belts and the borders of their robes. Decorated baskets seem to have been limited to Tonga, Samoa, and New Zealand. Feather robes with simple figures were important in Hawaii and New Zealand (Plate XIV).

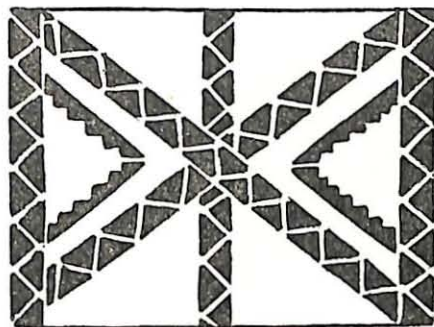


FIG. 56.
Samoa Design on a War Club.
(After Greiner)

It is impossible to give anything like a complete account of Polynesian art in this guidebook. The art of each group had certain distinctive features, and even in the same locality different sorts of designs would often be used on different classes of objects. In general, the art of Tonga, Samoa, the Cook, Austral and Society groups, and Hawaii was characterized by the use of small, angular designs which were repeated many times. The only curved designs were circles, ovals, and crescents, the spiral being practically unknown. There was a limited use of conventionalized

plant forms in all these localities, while small naturalistic outline figures of men and animals were employed everywhere, except in Hawaii. In the Marquesas the designs were predominantly curvi-linear, the spiral being of first importance. Large angular designs were carved on house timbers, perhaps as an imitation of

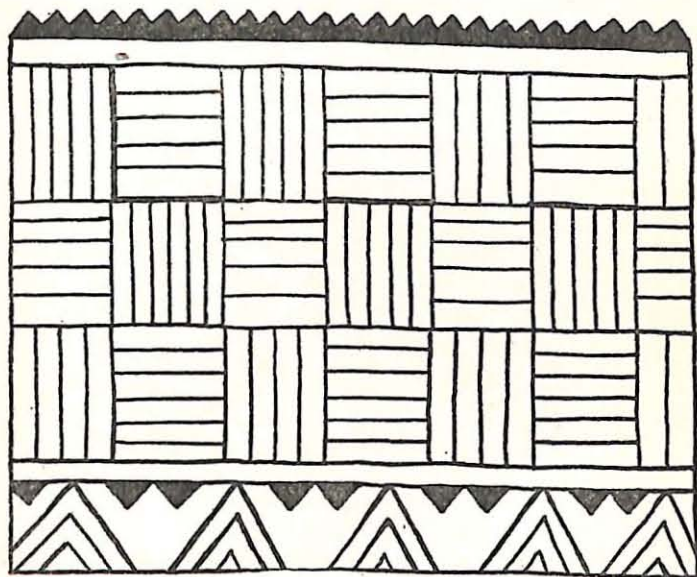


FIG. 57.
Design on a War Club, Samoa.
(After Greiner)

ornamental lashings, but were rarely used elsewhere. Highly conventionalized human faces were constantly used, but human figures in outline were extremely rare; animal forms were so conventionalized as to be unrecognizable, and plant forms were almost lacking.

There were two quite distinct types of art in New Zealand. The natives of the south island used simple

angular designs in their carvings. All the Maoris employed angular designs on their baskets, textiles, and feather robes. The natives of the north island employed only curvi-linear designs in their carving and painting. The most important single element was the spiral, but highly conventionalized human figures, faces, and animal forms were much used in carving. Many of the scroll designs painted on rafters were said to be derived from plant forms, but were so highly conventionalized as to be unrecognizable. In Tonga, Samoa, the Cook group, and the Marquesas the surface to be



FIG. 58.
Tonga Design for Tapa.
(After Greiner)

decorated was divided into a number of sections which were treated as independent units. In Hawaii, New Zealand, and probably in the Society group, the whole surface was treated as a unit. The art of the Marquesans and northern Maoris was bold and forceful, and found its closest parallel in that of certain parts of Melanesia, notably the Massim region of New Guinea. That of the other large Polynesian groups was delicate, with a great attention to detail, but showed little ability in large composition. It found its closest parallel in the rather feeble art of eastern Micronesia.

All the natives seem to have made some use of human figures carved in the round, which were set up in sacred places as representations of gods or ancestors. Such images were least important in Micronesia, Fiji, Tonga, and Samoa. The few examples preserved from these localities show a crude attempt at naturalism. In Hawaii, the Marquesas, and the Cook, Austral, and Society groups great numbers of images were made. The Maoris had a few images in the round, but

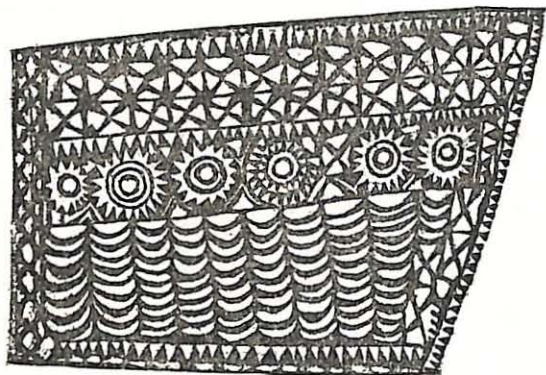


FIG. 59.

Design from Ceremonial Paddle.
Mangaia, Cook Group. Case 32.

most of their human figures were carved in high relief on slabs (Plate III). The Austral and Society Island figures were rather crude. The legs were usually flexed, and the arms bent with the hands resting on the abdomen or raised to the chin. The facial treatment was simple, and in some instances the features were omitted. In one example from the Australs eyes, nose, and mouth are indicated by small human figures carved in relief.

In Hawaii, the Marquesas, the Cook group, and New Zealand most of the images were rigidly conventionalized, although both the Hawaiians and the Maoris carved some rather good naturalistic figures and even attempted portraiture. Although each group had its own conventions, all of them had certain features in common. The legs were shown half flexed and, except in Hawaii, the arms were always bent, both hands resting on the abdomen, or one hand being in this position, and the other raised to the mouth. The greatest care was expended on the face. The brows were greatly exaggerated, the nose reduced, and the mouth made extremely wide, with parted lips showing the tongue. In Hawaii and New Zealand the mouth was often beaked, assuming the form of an eight. Although the images were usually made of wood, stone was sometimes employed in Hawaii, the Marquesas, Society and Austral groups, and Easter Island, but rarely in the Cook group and New Zealand. In every case the convention of the stone figures agrees with that of the local wooden forms.

MANA AND TAPU

The concepts of *mana* and *tapu* underlie the whole fabric of Polynesian religion and social organization. The word *mana* has no exact English equivalent. Perhaps it can be most nearly translated by "power," if that term is used with all its manifold implications. It was an essence or force which pervaded the whole of nature, but was uneven in its distribution. Some persons or objects had a great deal of it, others almost none. Its presence might be discovered accidentally, as when it was found that the use of a certain stone as a sinker was followed by an unusual catch of fish. It could be strengthened by spells, such as those recited by a warrior over his weapons, or by use. A club that had killed many men, or a chisel that had been used by a master carver, had more *mana* than an unused weapon or club. Tregear says, "In human beings *mana* had really a religious basis, it was born with great chiefs as part of their god-inheritance, but it could be lost. It could also be greatly strengthened: it was not exactly success in battle, or acquisition of power and lands, or repute for wisdom, but the possession of these was a sign of the indwelling of *mana*. Its outward form might be what we vaguely call good luck, genius, reputation, etc., but it might also be recognized in high courage, lofty social position, and personal influence. *Mana* was shown when a man undertook to do an unusual and almost impossible thing and yet succeeded. It was not always necessary to be of noble birth to possess *mana*; the child of a slave could by great daring, in-

fluence, and good fortune rise to be a noted chief or dreaded councilor. Lands and localities were supposed to possess *mana* of their own, as well as men, weapons, etc. This influence when it pertained to land was on account of the spirits of famous men remaining on guard over them."

Tapu has been taken over into English as *tabu*. Tregear writes, "Its proper sense seems to be neither 'sacred' nor 'defiled,' although it may take either meaning, and that medial expression 'prohibited' perhaps translates it best—'prohibited' for sacred reasons, 'prohibited' for objectionable reasons. The true inwardness of the word *tapu* is that it infers the setting apart of certain persons or things on account of their having become possessed or infected by the presence of supernatural beings. Great chiefs were by nature *tapu* on account of their divine birth. If such chiefs performed certain actions, such as entering a common house, leaning against a post, eating a portion of food, etc., the house, the post, or the remaining scraps of victuals were *tapu* to others. If a common man partook of scraps left by his noble master, he was then 'eating the god' of his own tribe, and thus not only committing a terrible sacrilege against his protecting deity, but probably bringing down upon his leader the wrath of heavenly beings whose essential sacredness had been conveyed to the food by the touch of the chief. That is the reason why the chief himself would feel violent personal anger at his *tapu* being broken by the act of an inferior. If a chief made a thing *tapu*, such prohibition was only held binding on lesser men; if some more powerful noble came, he would take it, disregarding the *tapu* of the other, very much as if he had said, "This fellow's position in

regard to the gods is nothing compared to mine,' but, of course, he might have to maintain such superiority at the point of the spear.

"The priests, especially the priest-chiefs (Ariki), had the power of releasing from *tapu* and making things common (*noa*) again; if this could not have been done, the laws of *tapu* would have been too heavy to be borne, and all social life must have ceased. As it was, it was almost impossible not to infringe this dreaded custom, even if scrupulous and pious care was taken. The annoyance was almost as great for the sacred person as for the sinner, although not so unpleasant or perhaps fatal in its consequences. Thus, the chief must eat in the open air, whatever the weather, so as not to *tapu* a house; must not eat from a plate that another shared or that another might afterward use; must gather up all scraps and take them away to a *tapu* spot lest another consume them. He could not drink from a vessel if it was probable that the lips of another would approach that vessel, so that he had to hold his hand curved upward below his lower lip, whilst water was poured from a calabash into his mouth. A chief had to be careful not to leave his comb or hair-fillet or shoulder-mat in any place where a common person would touch them. Even if another person equally sacred touched his head, he would be *tapu* until the next day when the purifying ceremony would proceed. A new sacred fire was kindled by friction and fern-root cooked thereon by some 'unprohibited' person. The food was then rubbed over the disqualified hands, and afterwards eaten by the female head of the family. If the shadow of a great Ariki fell across a food-store, the contents became *tapu* and had to be destroyed. If he blew on

a fire with his breath the fire became *tapu*. Should a priest in drinking let fall some of the water from his hand, that place was *tapu*, and the length of time it so remained depended on the quantity of water spilt. On one occasion the people of a village became *tapu* from eating the wild cabbage which had grown on the site once occupied by a chief's house. The infringement of the *tapu* was not only a spiritual offence, but sometimes produced actual physical consequences. Death would almost certainly ensue if a common man found, for instance, that he had cooked his food with timber from some *tapu* place."

The account of *tapu* just quoted refers specifically to the Maori of New Zealand, but similar ideas and practices were present everywhere in Polynesia. The regulations of the *tapu* were extremely irksome to all concerned, and a good chief was expected to regulate his actions so as to cause as little damage as possible to his followers. In some places certain paths were set aside for the chief to traverse, and it was understood that his feet only *tapued* the ground to a fixed distance. In others the chief went out only at night, to avoid contaminating objects with his shadow. In still others there was a class of persons, usually foreigners, who were considered non-conductors, and could associate with both chiefs and commoners without imparting the *tapu*. These waited on the chief, cooked his food, and even carried him from place to place. In some of the groups the stringency of the *tapu* seems to have been one of the main factors responsible for the establishment of a dual chieftainship, one chief being sacred and observing the *tapus*, while another actually ruled.

In historic times involuntary *tapu* were only one phase of the institution. There were everywhere a long series of *tapus* which derived their sanction from some ancient chief or god, and which took the place of laws in regulating the conduct of individuals. Temporary *tapus*, imposed and lifted at will, were used for the protection of property or the conservation of resources; for instance, when a Samoan village wished to buy a large canoe, a *tapu* would be placed on coconuts or other native products for a time, so that each family would have enough to pay its quota. Standing crops were often *tapued* as a protection from theft, although this only guarded them from persons of lower rank than the *tapuer*. A sign was usually hung up as a warning. In Samoa these signs were of many different sorts, and indicated the spirit in whose name the *tapu* was imposed and the penalty which would follow its infraction. Thus, when a man hung up a small coconut-leaf figure of a shark in his breadfruit tree, it indicated that the tree was under the protection of the shark god and that the thief would be eaten by sharks. There were no limits to the *tapu* power of chiefs of the highest rank. They might reserve all food of a certain sort to themselves or lay an embargo on an island, so that no one could enter or leave. The system of imposed *tapu* was most developed in Hawaii, and finally became so irksome that the natives, encouraged by the fact that white men were immune, rose and destroyed the whole institution.

In Fiji the concepts of *mana* and *tapu*, and the use of the latter, were much the same as in western Polynesia. In Micronesia the *mana* idea was relatively weak, and seems to have taken the form common in Melanesia, where the *mana* of a person or object was

believed to be due to its association with a spirit. The idea of infectious *tapu* by involuntary contact was weak or lacking, but there were conduct *tapus* inherited from ancient times and temporary *tapus*. The latter seem to have been most important in the Carolines, and were imposed by priests rather than chiefs.

SOCIAL ORGANIZATION

The ordinary Polynesian family was monogamous for economic reasons. There was no feeling against polygamy, but it was usually limited to chiefs, and even these rarely had more than three wives at a time. Polyandry (plurality of husbands) was very rare, except in the Marquesas, where it was normal. Even there, there was always a main or official husband, the other husbands exercising their rights only when he was away. In polygamous families there was a principal wife, the one of highest birth. In Samoa a chief's daughter was accompanied, when she went to her husband, by a younger sister who stayed with them for a time and acted as an inferior wife. In Hawaii the highest ranks practised brother and sister marriage to insure the purity of the royal blood. A similar practice seems to have existed in the Cook group. Elsewhere the marriage of close relatives was prohibited, although that between cousins was often favored as a means of keeping property in the family. Although children were sometimes betrothed in infancy, marriage was relatively late, men rarely mating before they reached the age of twenty. Young people of the lower classes enjoyed complete freedom before marriage, and rarely settled down until they had had several love affairs.

The children of chiefs and nobles were more carefully chaperoned. In both Tonga and Samoa the virginity of the bride was tested as a part of the marriage ceremony. Commoners' marriages were based on personal choice, but those of chiefs were nearly

always arranged by the councilors. They were a favorite method of cementing alliances between tribes. Marriage by purchase seems to have been unknown. In chiefs' unions the two families exchanged gifts, but those of the bride's family, which constituted her dowry, were usually the larger. The marriage bond was easily severed, unions being dissolved at the wish of either party. In such cases young children would remain with the mother, while the older ones stayed with either parent they wished. Infanticide was especially common in the Society group, but was practised everywhere. Large families were exceptional. Adoption was common, being most important in the Marquesas, where practically all children were adopted, and where they were often spoken for before they were born. Adopted children everywhere had exactly the same position as natural ones.

Gentes or clans, that is, groups membership in which was based on descent reckoned exclusively in the male or female line, seem to have been unknown in Polynesia. The foundations of the social organization were the family and tribe. The latter was really an enlarged family, for all its free members were at least remotely related by blood or adoption. In Tonga it is said that if the entire population was removed one by one, the last male survivor would have a legitimate claim to the title of Tuitonga (sacred chief of Tonga). Several families lived together in a village, and when the tribal territory was large, it was usually divided into districts each of which included several villages. The villages and districts were governmental units, having their own chiefs and councils and, at least in Samoa, their own patron deities, but membership in a village or district was not necessarily a matter of

descent. Political groupings larger than the tribe sometimes arose through conquest or through the fusing of two royal lines by marriage, but they always tended to fall apart. Temporary alliances between tribes were common, but there were no confederacies.

All the Polynesians were obsessed with the idea of rank. This was based exclusively on descent and primogeniture, which overshadowed all other considerations, even sex. The rank of a given individual was dependent upon that of both parents, plus seniority of birth. In tracing descent a person would give the ancestor of highest rank in each generation, so that nearly all genealogies contain both male and female names. The system was not unlike that used by modern European families when trying to prove a royal ancestry. In general, descent through the eldest son was considered the most direct, but the eldest child of either sex by the highest wife enjoyed the highest rank in that particular family. Even the sacred chief of Tonga had to accord certain marks of respect to his elder sister. In New Zealand, which seems to have been most nearly patrilineal, the eldest son of a chief by a low-cast wife could not inherit his father's social status or office. It is said that in the Society group a low-cast wife or husband could be elevated by certain ceremonies at the *marae* ("temple") and also by killing the first children of the union, the rank of the lower partner increasing as each child was killed until equality was reached.

The children of a royal woman and a commoner were of higher rank than those of a royal man and common woman, and, in general there was a tendency toward the matrilineal descent of rank in all those groups in which chastity was not very highly valued,

and paternity was rather uncertain. The whole system of rank had a religious sanction, being based on ancestor worship. The person who was very closely related to the tribal ancestors could be surest of their help and support. In some groups the chief was considered an embodiment of these ancestors, and was accorded divine honors. Each succeeding chief inherited the *mana* of all his ancestors, so that an eldest son was of higher rank than his own father.

In a system which laid so much stress on descent, genealogies were of the utmost importance. Some of those from the Marquesas purport to give over eighty generations, but the earlier portions are clearly mythical. Actual genealogies recording from twenty to thirty generations were quite common. Every well-born native knew his genealogy by heart, for he might have to appeal to it at any time to establish his right to land or to some office. In the Society group the descendant of a chief who had left an island several generations before could return to that island and take up his ancestor's lands and titles if he could prove his claim by reciting his genealogy correctly. For this reason the Society Island genealogies were kept as family secrets. Claimants were examined at their ancestral *marae*, and there was a special class of priests whose business it was to memorize genealogies and tribal records and to check up on such claims. In the Marquesas and Hawaii there were also priests who were supposed to know all the genealogies of the tribe, and in Hawaii they were organized into a sort of college of heralds who passed on the claims of aspirants to chiefly rank or office. There can be little doubt, however, that they sometimes discovered lofty genealogies for chiefs who had acquired temporal power.

Social rank was purely a matter of birth and was inalienable. It was a prerequisite for office, but its possession did not mean temporal power. When the social head of the tribe was a woman, the actual chief would usually be a man, although, if there were no male claimants of very high rank, or if she had ability and force of character, she might rule. In New Zealand, the Society group, the Marquesas, and Hawaii the social head of the tribe, if a man, exercised both religious and temporal powers; he was, in short, a priest-king. This condition probably existed everywhere in Polynesia in ancient times, but by the beginning of the historic period the Samoans, Tongans, and Cook Islanders had both sacred and secular chiefs. The sacred chief was the social head of the tribe, but was so hedged about by *tapus* that he rarely took any part in the government and had little real power. The secular chief was often a relative of the sacred chief, perhaps a younger brother, but the office might pass into the hands of another line. Although the chieftainship was everywhere hereditary in theory, the tribal councils seem to have often set aside the direct heir in favor of some more able member of the family, and chiefs were sometimes deposed for misconduct.

In general priests stood next to the chiefs in the social order, but their rank varied with their individual status. The higher orders of ceremonial priests were nearly always recruited from chiefly families, and the high priest of an important god was little inferior in rank to a sacred chief. Below the head chiefs and high priests ranked the lesser chiefs and priests, and below these, in turn, the commoners. There was a good deal of intermarriage between the lower chiefs and the commoners. There were many individuals

whose social status was on the border line. The distinction between chiefs and commoners was strongest in Hawaii, where most of the latter were tenants on the chiefs' land. Elsewhere there was a socially and economically important middle class made up of land owners and skilled craftsmen. The latter were organized into more or less hereditary guilds, and demanded high pay for their services. They were, in a sense, priests, for they had to have a knowledge of the spells and ritual necessary to make their work successful. In some places the payments made them were considered offerings to the patron deity of their particular trade. Labor was considered honorable, and minor chiefs were often skilled artisans as well. At the bottom of the social scale there was usually a class of slaves or serfs, descendants of prisoners of war.

Polynesian government was comparatively simple. Each chief was, in theory, the absolute ruler of his group. His orders were expressed as *tapus*, and had a divine sanction, so that disobedience automatically brought punishment. In practice, however, the chief was restrained by his council and by a strong public opinion. The village councils were made up of the heads of families and other important men with the village chief presiding. They were really little more than town meetings at which local affairs were discussed informally. District councils were made up of the village chiefs and other important men, while tribal councils were composed of all the chiefs. Tribal councils were only convened to discuss matters of importance to the whole tribe, such as declarations of war or the selection of a new head chief. They were usually attended with a good deal of formality, but discussion was free, and few chiefs would dare to go

against the public will expressed there. The chiefs were most despotic in Tonga and Hawaii and least so in the Marquesas. In the latter group the organization was quite democratic and, although the chief was accorded respect in both temporal and religious matters, his actual power depended upon his ability. In Hawaii there seems to have been a distinct class of personal councilors to the chief, commoners, who were able generals or diplomats, and a chief's personal attendants everywhere did a good deal to influence his decisions.

Theft and crimes of violence were not uncommon. When they occurred within the group, the case was tried, and punishment prescribed by the chief and council. There was no police to enforce the penalties, but a man who fled to escape it would forfeit his property. Death sentences were usually executed by a relative or retainer of the chief, to prevent the victim's relatives from taking revenge on the executioner. Private revenge was common, and in general the whole family or tribe was held responsible for the conduct of each of its members. As a tribe would rarely give up one of its members for an offence against an outsider, many wars began in this way. In New Zealand certain classes of offences were punished by plundering, the friends of the injured party carrying off the property of the offender's relatives and even destroying their houses and standing crops. This plundering was a recognized institution, and the victims were forbidden to defend their property.

Personal property was individually owned. A woman retained her rights after marriage. Land was considered the property of the whole tribe. Its ownership was vested in the chief as the official head of the

group, and the lesser chiefs and middle class held their land from him. At the same time any family who had held and used land for several generations was felt to have a strong right to it. The chief could not sequester it without good cause. As a rule even the chiefs could not sell land to any outsider without the consent of the council, and in practice such transfers were extremely rare. The chiefs' power over land seems to have been greatest in Hawaii, where the bulk of the population consisted of rent-paying tenants, and even lesser chiefs had their land allotted them by the high chiefs.

Micronesian social organization is still imperfectly known. In the Gilbert group descent was reckoned in the male line. Monogamy was the rule, although a man had marital rights over the widows of his deceased brothers and over his wife's sisters by the same mother. It was considered unworthy for a man to exercise these rights unless his real wife was childless. Incest was strictly forbidden, and great emphasis was laid on chastity. When an unmarried woman was seduced, both parties would be put to death. Infant betrothal was common, and all marriages were arranged by the parents. Long genealogies were kept, but the idea of rank was less developed than in most islands of Polynesia. The powers of the chief depended upon his personality, and he was not considered sacred. The ownership of land was vested in families. It was regularly transferred as a part of a bride's dowry.

In the Marshalls and Carolines descent was reckoned in the female line, and there seems to have been a clan organization. In the Carolines the clans were totemic and exogamous. In the Marshalls the population was divided into four classes,—chiefs, nobles,

commoners, and slaves. The chiefs had autocratic power, and were considered personal owners of the land. In the Carolines the chiefs were sacred, and were treated with great formality, but they did not own land, and seem to have had little real power. Throughout the Carolines the men's house was an institution. This was a large house which was shared by all unmarried men of a clan; it was tabu to women. In Yap one or more women, abducted from other tribes, were kept in each of these houses for the use of the inmates. They were treated with respect, and usually married later in life. A similar house for women existed in some of the islands, but the distribution of this practice is uncertain.

Fijian social organization was quite complex, largely as a result of the superposition of a number of Polynesian features on an older organization of Melanesian type. Polygamy was common, chiefs often having as many as twenty wives. Marriage between brother and sister or between the children of two brothers or two sisters was forbidden. The children of a brother and of a sister, on the other hand, were considered the natural mates for each other, and were looked upon as betrothed from birth. This feeling was so strong that, even if the parties married persons outside the family, the woman's children were considered the children of her own instead of her real husband. This system tended to stagnate blood within the family, but actual statistics show that the children of such close unions were more numerous than those from marriages outside the family, and were fully as good mentally and physically.

Every Fijian tribe was divided into a number of sections which were subdivided in turn. The members

of each section traced their descent from a group of brothers, while the members of each subsection traced theirs from one of these brothers. There was a suggestion of totemism, each group having a sacred bird or animal, which it did not eat, and a sacred plant. In some tribes the whole population was divided into two groups which were exogamous; that is, members of the same group were forbidden to intermarry. This dual organization was most important in the part of Fiji, where the Polynesian influence was strongest, although the Polynesians themselves had no such arrangement. The real political and social unit was the tribe, and all larger groupings were more or less transitory. A strong chief might conquer several tribes and exact tribute, but the conquered retained title to their land, and were not incorporated with the conquerors. Tribute was usually paid to the conquering chief in person, but in some cases one village as a whole would hold another village vassal. The vassal village might be either a conquered enemy or a colony founded by members of the ruling village.

The idea of rank and of social classes was most strongly developed among the tribes which had been influenced by Polynesia. The ancient Fijian social organization seems to have been more democratic than the Polynesian one, but full membership in the group was a matter of birth or adoption. Inheritance of rank and property was in the female line. A man's wives might be of different rank, and therefore his children, but rank made no difference in land ownership. There were no long, carefully kept genealogies of the Polynesian sort. In general the population was divided into chiefs, nobles, commoners, and outcasts. The first three groups were related by blood, while the lowest

class consisted of the descendants of outsiders, either castaways or prisoners of war. Although there was some intermarriage between commoners and outcasts, the children of such marriages remained members of the lowest class.

In ancient times a single chief seems to have held both the secular and sacred power. In historic times various tribes showed all stages in the development of a dual chieftainship like that of western Polynesia. The person of the sacred chief was extremely *tapu*, and his rank was the highest in the tribe, but he had little real power. The secular chiefs seem to have had more power over the lives and property of their subjects than was usually the case in Polynesia, but even they could not alienate land. Both the sacred and secular chieftainships were hereditary in certain families, but the actual chiefs were elected from among those eligible for the office. Priests were important, but do not seem to have been organized.

The system of land tenure varied considerably in different tribes. In general three classes of land were recognized. The *yavu* or town lot belonged to the head of the family. In theory at least, each village originated from the increase of a single family. As population grew more, houses were built around that of the original ancestor. All the houses were named, and when the village was destroyed, it was rebuilt on the same plan. The house and the land on which it stood descended from the father to the eldest son. *Nkele* or arable land was waste land which had been reclaimed by some family. Final ownership of this was vested in the section, but in practice it remained the property of the reclaimers as long as it continued in use.

Veikau or waste land was considered the property of the whole tribe. It was administered by the chief, and was usually apportioned out to tenants, not full members of the tribe, who paid rent and service directly to the chief. All the members of a tribe were expected to give a certain amount of labor to the chief each year. This was used to keep up roads and bridges, and also to help members of the tribe. When a man wanted to build a house, he would apply to the chief for help, and the chief in turn would send out a call for labor.

The Fijian commoner reckoned his wealth, not by the amount of his property, but by the number of friends from whom he could beg. Pure communism was unknown, but the claims of relationship within the tribe were so strong as to constitute a lien on all personal property. This begging was really a substitute for trade or barter. When a man had more salt than he needed, a neighbor begged it from him, and when the man needed yams, he in turn begged it from the neighbor. A man's rights were strongest over the property of his maternal uncle, and he could carry off anything that the latter possessed. People of two villages who traced their descent from a common ancestor and worshipped the same gods also had a reciprocal right of plunder, visiting one another and stripping the houses of all food and movable property.

RELIGION

The Polynesians believed in the existence of innumerable supernatural beings. These were classified and arranged in a great hierarchy, but only a few of them were actually worshipped. No attention was paid to a multitude of minor spirits, who corresponded in a general way to the European elves and goblins, or to most of the great ancient gods of the creation myths; for it was felt that the latter were too remote to interfere in the world of human affairs. There was no concept of a supreme being, although the higher orders of priests and chiefs in New Zealand seem to have approached it in their worship of the god Io. In New Zealand and Hawaii three great deities,—Tane, Tu, and Rongo,—stood at the head of the sacred hierarchy.

Tane was a sky god and creator, frequently referred to in the oldest chants and myths, but he had no temples or direct worship. In the north island of New Zealand he was a forest god and relatively unimportant. Tu was a war god, and was the foremost deity in Hawaii, where the finest temples were dedicated to him. He was the recipient of most of the human sacrifices. Rongo was an agricultural god. These three deities were known throughout the rest of Polynesia, but were of lesser importance and changed their attributes somewhat in the various groups. In the Society group Rongo was a war god. In Samoa, Tonga, and the Society and Cook groups the head of the sacred hierarchy was Tangaroa. He was a sea god and creator. He was known in Hawaii and New Zealand, but was unimportant, being a sea or forest god.

Below the great gods just described there were everywhere a number of deities who were worshipped by part of the population. The activities of most of these seem to have been rigidly prescribed. They watched over a single tribe, family, or locality; or were the patrons of some trade. In Hawaii every industry had its god, including a god of the thieves, while the great universal gods were self-existent, and had never had material form. Many of the lesser deities appear to have originally been human beings. In western Polynesia, especially Samoa, there was also a tendency to identify the minor gods with animals. The animal itself was not considered divine, but it was believed to be the favorite vehicle of the god, and on that account could not be injured or eaten by his followers.

There was a strong undercurrent of ancestor worship everywhere in Polynesia. It underlay the whole social organization, and was the foundation of the exaggerated respect paid to rank and descent. Even the deities who had never been human came within its scope, for the chiefs commonly traced their descent from these and, in reverencing them, were reverencing the founders of their line. The worship of recognizedly human ancestors was least important in Samoa and Tonga. Indeed, it hardly existed in Samoa, although the spirits of chiefs were sometimes prayed to, and even a commoner might invoke his immediate ancestors in time of stress. In Tonga the spirits of dead chiefs formed one of the two classes of deities who were worshipped, and their tombs were used as temples. They were believed to return and give oracles through the priests.

In Hawaii ancestor worship was a family affair, overshadowed by the tribal worship of the greater

gods. In the Cook and Society groups ancestor worship was interwoven with that of the non-human deities, and the temples of the latter were used as burying grounds. At least in the Society group each family also had its own sacred place dedicated to its ancestors. In the Marquesas the ancestor cult was all important, and little attention was paid to any other deities. In New Zealand the ancestors were the guardians of the tribe, and were frequently appealed to for help and guidance. There can be little doubt that the worship of ancestors, or of the lesser gods who were the guardians of a man's village or trade, stood much closer to the hearts of the people than that of the great deities. They were simple, familiar beings who could be appealed to directly, while the great gods were hedged about by the priests and the ritual of the temple.

The Polynesians felt that there was no connection between religion and morality. As long as a man avoided breaking the *tapu*, his conduct toward his fellow men did not concern the gods. To the ordinary native religion consisted of sacrifice and the repetition of certain set formulas. His devotion to the gods was based on fear and on the hope of future favors. Sacrifice was a part of practically all rites. Even at ordinary meals a little food was set aside as an offering to the ancestors, while all requests had to be accompanied by gifts. The sacrifices were usually food, whose essence was consumed by the god, while his priest consumed its substance. Human sacrifice was rare in Tonga and Samoa, but seems to have been fairly common in the rest of Polynesia. It was very common in the Cook, Society, and Marquesas groups, where human victims were offered at most important ceremonies.

In Hawaii nearly all the human sacrifices were made to Tu, the war god. The practice does not figure in the oldest legends. Apparently it was introduced into that group by immigrants who came from southeastern Polynesia between A. D. 1000 and 1200. The victims were usually captive enemies, but criminals and commoners who had incurred the ill will of the priests were also offered. In the Cook group certain tribes or families were set aside for sacrifice. The proper performance of ritual was nearly as important in gaining the god's favor as the making of sacrifices. The least slip would nullify the effect of all that had gone before, and would make it necessary to begin again. In some instances it was thought that an error would be fatal to the priest himself. The natives did not distinguish between religion and magic, and many of the formulas repeated by the priests were believed to compel the god to accede to their demands.

The priest acted as a medium of communication between the people and the particular god whom he served. It was his duty to present their offerings and requests to the deity and to deliver the god's answers. He was also the keeper of the tribal lore and the guardian of his god's temple, if there was one. His most important single function seems to have been the giving of oracles, which were usually delivered by word of mouth while in a trance condition. Because of the great importance attached to the rituals, priests usually underwent a long novitiate. It was almost impossible for an uninstructed man to become one. Membership in the priesthood everywhere tended to become hereditary. It was strictly so in some groups. In Tonga, Samoa, and New Zealand each priest performed all the priestly functions. The priesthood as a

whole was not organized. In the Cook group and the Marquesas the priesthood seems to have been partially organized. There was a distinction between the inspirational priests, who delivered the oracles, and the ceremonial priests, who attended to the temples and sacrificial rites.

In the Society group and Hawaii the priesthood was thoroughly organized, forming a distinct hereditary cast. The various functions were delegated to different orders of priests, one order keeping the genealogies and myths, another caring for the temples, etc. In Hawaii there were even farming priests, who tilled the god's lands, and warrior priests, who led armies in battle and hurled spells against the enemy. Wherever the priestly functions were divided, that of giving oracles was reserved for the highest order. The priesthood was chiefly recruited from the upper classes, often from the younger brothers of chiefs. Its members ranked above the commoners and lesser nobles. The high priest of an important god was little inferior in rank to the reigning chief.

Shamans were important everywhere in the area. It is somewhat difficult to draw a line between them and the unspecialized priests of the sort found in Tonga and New Zealand. The real difference seems to have been that, while the priest was controlled by his god, the shaman controlled his supernatural helper. The shaman's helper was often the spirit of some dead person which he had seized, or which had attached itself to him. The principal function of the shaman was to cure disease, but he worked magic of all sorts. In New Zealand the shamans were specialists, one man confining himself to diagnosing diseases, while another made the cures. Many of them practised black magic.

It was generally believed that if they obtained the cuttings of a man's hair or nails, his spittle, etc., they could bring about his death. The shamans as a class were feared rather than respected. Their office was not hereditary. They were not organized among themselves. They were usually men, but female shamans were important in the Marquesas and Society groups.

In the Society group there was an organization known as the *Areoi*, made up of men and women who devoted themselves to pleasure. The members spent their lives in wandering from place to place, giving dances and musical entertainments. The people esteemed them as a superior order of beings, closely allied to the gods. They were believed to go to a heaven of their own after death. A man who wished to join the society killed all his children, and any children born to members were put to death. The society was organized into a number of grades which were distinguished by different tattooed designs. Many of their entertainments were obscene. It seems probable that they were in some way connected with a generation cult, and that their acts were believed to increase fertility.

All the Polynesians had sacred places of some sort. In New Zealand there were no real temples, although certain places were sacred. The nearest approach to a temple seems to have been the large house in which young men were instructed in the tribal lore. In Tonga and Samoa the temples were simple houses, like dwellings. In Tonga the temple was often built over the tomb of a dead chief, while in Samoa the town houses were sometimes used as temples. In the Cook and Austral groups the temples were usually stone enclosures or platforms, often without houses. In the

Cook group they were used as burial places. In the Society group the temples were quite elaborate. There were several different forms, but the most important temples were usually low-walled enclosures with a platform or pyramid at one end. They were used as burial places and also as assembly places. Each chief had his hereditary seat in the *marae* ("temple"), and when he emigrated to another island, he would usually take one of the stones from the *marae* with him and found a new *marae* of his own. The *marae* differed in sanctity, the most sacred being one on the island of Raiatea.

In the Marquesas there were two sorts of temple, the public ones, which were attached to the sacred places, and the mortuary ones, which were usually built high up in the hills. The former were used for public rites in which the whole tribe participated, and were not used as burial places. The latter were primarily burial places, but were the scene of most of the human sacrifices. The temples of both sorts were usually stone platforms which bore houses. These houses were shaped like the dwellings, but had excessively high roofs, so that early writers often refer to them as obelisks. In Hawaii there were several types of temple. The oldest form seems to have been a simple stone platform or pyramid which sometimes bore a house shaped like an ordinary dwelling. In historic times the most important temples were stone-walled enclosures containing a number of houses for the priests and images. There were also tall structures covered with tapa from which the priests delivered their oracles. Only chiefs and priests were admitted to the temple enclosure, the common people remaining outside and being told what was going on by the priests.

Images were used in all parts of Polynesia, but were unimportant in Tonga, Samoa, and New Zealand. In Tonga and Samoa the symbol of the god was usually some object, such as a stone or shell trumpet, while in New Zealand it was a carved stick, usually with a face at the upper end, which was only set up during ceremonies. In the Cook and Society groups crudely carved images were kept in the temples, and were also carried in processions and even taken to war. In the Marquesas and Hawaii grotesquely carved human figures were set up in all the temples. In Easter Island enormous stone figures were erected in the burial places. None of the images or objects symbolizing the gods seems to have been considered divine in themselves. They were simply bodies which the gods could occupy at will.

Most of the important ceremonies centered about war and agriculture. Harvest festivals at which the gods were offered great heaps of food were common. In the Society group there was a fire-walking ceremony. A large earth oven was built and, when the stones had been heated red hot, the priests walked across them barefoot. There seems to have been no trick in the ceremony, and why they escaped injury has never been satisfactorily explained.

Polynesian mythology was unusually elaborate. The creation myths are of especial interest, for many of them show a philosophic trend surprising in an uncivilized people. The Maori believed that the original state of the universe was *kore*, a condition of chaos or nothingness permeated with generative power. From this arose a yawning and immeasurable darkness, *po*, which was blank and unformed, but carried within itself the potency and essence of all life. From *po*

there arose successively eighteen periods, each of vast duration, which were named Nothingness, Darkness, Seeking, Following on, Conception of thought, Enlarging, etc., until in the eighteenth period came light. After many more periods *rangi*, "heaven" and *papa*, "earth," appeared. The heaven father and earth mother embraced and clung together, and the gods were begotten. From this point on the myth loses its philosophic character. Tane, born from the embrace of Heaven and Earth, tore his parents apart, and set up the props of heaven to support the sky. From the space that lay beyond and about Heaven and Earth he brought in the children of light, the sun, moon and stars, and established them in their places.

He then created plant and animal life, and lastly man. There were many versions of the latter part of creation. According to one, Tane made the first man from red earth and breathed the breath of life into him, while the first woman was born from the union of the Mirage and Echo. Even the great periods which preceded Heaven and Earth were personified, and the myth was cast in the form of a genealogy of the universe in which each god and even each human line had its place. The myth in its entirety was known only to a few of the higher priests. An essentially similar creation myth was known in the Marquesas. In Hawaii there was no long series of vaguely personified entities, the first life springing directly from chaos. Creation was divided into stages. In the first stage the sea took form, and was inhabited by lowly forms of life whose accumulating bodies gradually formed land. In the second stage Black Night and Wide-spread Night gave birth to leafy plants, insects and birds, and the first glimmer of light appeared. In the third stage the

sea produced larger forms some of which began to creep upon the muddy land. In the fourth stage food plants came into existence. In the fifth, night and day became separate, and the pig appeared. In the sixth, the abstract psychic qualities to be embodied in man were developed. In the seventh and last, confusion ceased, light became clear, and man and woman, together with the higher gods, were born.

The evolutionary type of cosmogenic myth was strongest in New Zealand, Hawaii, and the Marquesas. In Tonga and Samoa the cosmogenic myth was creative. The gods lived in a sky world below which there was only sea. One of them cast down a stone, which became the world. Some of the gods descended to it, and later mankind appeared. In the Society group Tangaroa was conceived of as a world soul,—a self-evolving, self-existing, creative deity who alone was ultimately responsible for the origin of the universe.

Aside from the creation myths the best-known Polynesian stories centre about the hero Maui, who was the youngest and cleverest of six brothers. His three most widely told exploits were fishing up the land, snaring the sun, and obtaining fire for men. In the first the land is a great fish which he catches with his magic hook and kills with his adze, the valleys being the cuts he made. In the second the sun travels across the sky so fast that there is hardly any daylight. He catches it with a magic rope as it comes up, and makes it promise to go more slowly. There were several versions of the fire quest in different groups. In New Zealand he gets it from an old woman who lives under the earth. In Hawaii he steals it from the mud hens.

The Fijians, like the Polynesians, believed in a multitude of gods and spirits, but all the tribes re-

cognized one deity as of supreme importance. This god, Ndengei, was an enormous serpent who lived in a cave near the northern end of Viti Levu. His only emotion was hunger, and he gave no sign of life beyond eating, answering his priests, and changing his position from side to side. He was the eldest of the gods and the creator of the other gods and the universe, but he had fewer priests and temples than many of the lesser deities. Many of the lesser gods had monstrous form. Thangawalu was a giant sixty feet tall. Roko Mbatindua, "the one-toothed lord," had the shape of a man with wings instead of arms and a single tooth in his lower jaw which rose above his head. Each district, trade, etc., had its guardian deity, as in Polynesia. Ancestor worship was much more important than in western Polynesia. The head of the family was considered the incarnation of the ancestors. Sacrifices accompanied all petitions, but ritual seems to have been rather poorly developed.

The priest of each god was a hereditary official, but the priesthood as a whole was not organized. The temples were high-roofed houses erected on tall, stone-faced mounds, and were also used as tribal council-houses and guest-houses. A man could only appeal to his god at his temple and through his priest. There were few if any images, but standing stones of unusual form were sometimes worshipped as the dwelling-place of gods. In western Fiji a men's secret society, the Nanga, was important. All the men of the tribe were initiated into this, there being three degrees of membership. The initiation was largely a test of courage and endurance, but the novice also had to make gifts to the initiates. The ceremonies were held in a stone-walled enclosure which was also used as a

gathering place for the men. A man might invoke his ancestors there without the intercession of a priest. Somewhat similar men's societies were wide-spread in Melanesia, but were lacking in Polynesia.

There is little satisfactory information on Micronesian religion. That of the Gilbert group seems to have been fundamentally ancestor worship. Even their greatest deity, Tabueriki, was not improbably a deified ancestor, once a mighty chief. Ancestor worship was less important elsewhere, but the natives seem to have drawn no clear line between self-existing, supernatural beings and those who had once been human. The functions of the gods were more or less specialized, although this feature was less pronounced than in Polynesia. A supreme creator deity was present only in the western Carolines. There was a strong tendency for spirits to be resident in, or associated with, plants or animals. Sacrifices, usually of food, were made everywhere in the region, but seem to have been rather infrequent in the Carolines. Human sacrifice was unknown. Ritual was only moderately developed. In all the groups there were individuals who combined the duties of priest and shaman, serving the gods, curing the sick and working magic.

An organized priesthood seems to have been limited to the eastern Carolines, although in the Gilberts there were priests attached to the service of special gods. Mediums, who communicated with the souls of the dead, or the lesser spirits, were a distinct class in the Carolines and Marshalls. The priests do not seem to have been inspired by their gods or to have given oracles. The nearest approach to the latter was in the Gilberts, where the priests listened at the sacred stones and conveyed the message to the people, and where

chiefs were sometimes inspired by the spirits of their ancestors. In the Mariana group there is said to have been a society, known as the *writoy*, which resembled the Tahitian Areoi in several respects. Sacred houses were sometimes erected in all the groups, but were most important in the Carolines and Gilberts. Images of the gods were the exception rather than the rule. In the Carolines the district gods were often represented by idols, but the high gods had no representations. In the Gilberts a few ancestral images were made. Throughout Micronesia offerings were made and rites performed at uncarved stones believed to be the dwelling places of spirits. This practice was most important in the Gilberts, where stone pillars were commonly erected, anointed with oil, and bound with leaves.

Micronesian mythology has been collected to a small extent, but the creation myths have some points of interest. In the Pelews and western Carolines the natives seem to have been indifferent to the origin of the universe. The few myths recorded are of the creative type. In the rest of the Carolines the myths are more elaborate, but are also purely creative, assuming the immemorial existence of a deity. The origin myth of the western Marshalls was also of the creative type, but that of the eastern Marshalls begins with two worms, male and female, which lay together in a cocoon and stretched it until it was as large as the universe. Then from an abscess on the forehead of the male worm, one of the gods appeared, while the female one bore two female deities. The world and the other deities arose in different ways from the primordial pair. In this there is at least a suggestion of the evolutionary creation myths of Polynesia. The creative

and evolutionary types of origin myth meet in the Gilberts. In the northern islands of that group the myths are predominantly creative, while in the southern islands are found the Polynesian concepts of an original chaos and the separation of earth and sky. Curiously enough, these concepts are weak in the Polynesian groups nearest to the Gilberts.

DEATH AND BURIAL

All the natives of Polynesia believe in the existence of a soul, a separate entity dwelling in each man and surviving his death. There is no belief in multiple souls. Even the souls of persons in good health left their bodies in sleep, and dreams were actual soul experiences. Such living souls retained the form and features of their owners, and could be seen and recognized by those who had that power. When a man became ill, his soul was unusually restless, wandering about constantly. When he died, the connection between the soul and body was severed. The loss of a soul was certain, but not immediate death. A person whose soul had gone might live for some time, the body carrying on automatically. In some places sorcerers could cause death by snaring the soul and imprisoning it or destroying it. There seems to have been a good deal of confusion in the minds of the natives themselves as to the fate of the soul after death. It persisted for some time, but its power and the length of time before it disappeared were dependent on the *mana* of its owner while alive.

The souls of great chiefs were almost immortal, and could be appealed to as gods, while those of slaves were so weak that there was some doubt whether they had souls at all. There was no idea of future rewards or punishments for moral conduct.

In Micronesia the soul usually went to some spirit land at death, although belief in reincarnation was not uncommon. Its fate was determined by its owner's age, or social status, or the manner of his death.

It might return to earth, and was then able to do injury to men, and had to be propitiated. In the Carolines the dead went to sky heaven. The belief of the natives of Namoluk was typical. There the soul took the form of a seabird at death and flew to the spirit dwellings, which stood one above another in the sky. It bathed in a body of water, and immediately all became dark. A god, Rothe, led the soul to a tree and gave it leaves. When it grasped these, the light reappeared. Another god, Olaitin, then led the soul up to heaven by a ladder, passing between two rocks that clashed together. It might be caught there and destroyed. In the heaven to which it was assigned it led a life very much like that on earth, feasting and dancing all night and sleeping from sunrise to late afternoon. When it wished, it could return to earth to visit its friends.

The souls of men who fell in battle were taken to a special heaven, where there was fighting. Those of women who died in childbirth went to a far place, where heaven and earth met. The souls of men who hanged themselves were shut out of heaven, for the gods were disgusted at the sight of their protruding tongues. In Kusaie of the Carolines and in the Marshalls the souls went to a far island. In the Gilberts the natives of Peru believed in a sky heaven, but the rest in an island heaven, like the Marshalls. The souls of those who were not tattooed were caught and destroyed by a giantess.

In Fiji the path of the soul was beset with great dangers. Its final abode was a pleasant land, where they led a life like on earth, but few reached it. When a man's soul first left his grave, he carried with him the whale tooth placed in his dead hand, and at a

certain place threw it at a tree. If he missed, he had to remain in his grave. If he struck it, he went to another place, and there waited for the spirits of his strangled wives. He could not go on until they joined him, and when a bachelor he would be caught and devoured by a demon. When his wives joined him, he set out to a place called Nai Thombothombo, meeting and fighting certain spirits on the way. If he was conquered, he was eaten. Nai Thombothombo was a real locality in Fiji, and the spirits' road to it ran through a town. The houses in this town were all built with the doors opposite to each other, so that the spirits could pass through without hinderance, and its inhabitants always spoke in low tones or communicated by signs. They also had to be very careful in handling edged tools, lest they inadvertently cut a ghost.

The spirit next boarded a canoe and went to a mountain, where he was interrogated as to his rank. He was then sent back to earth, to be deified by his descendants, or seated on the blade of an oar from which he was dumped into the sea, through which he passed to his final abode. There he lived almost the same life as on earth, but might be punished for certain oversights while alive. Women who were not tattooed were tormented by other women or scraped up and made into food for the gods. Men who had not slain an enemy were sentenced to beat a heap of filth with a club, while the other men jeered at them.

In Tonga and Samoa the dwelling of the dead was called Pulotu. The Tongans thought that it was an island lying somewhere to the northwest, but some of their myths also refer to it as an underworld. The Samoans believed that it lay under the sea. Two cir-

cular openings among the rocks near the beach on the western end of the island of Savaii were thought to be the entrance to it. The larger one was used by chiefs, and the other by commoners. A river flowed at the bottom of the pit, which carried the souls to Pulotu, where they bathed in the water of life and became young and strong again. Life in Pulotu was like the pleasantest on earth. The souls were very light and volatile, and could return to the world at will.

In the Cook group ordinary souls were cooked and eaten by an ogress, called Miru. The souls of men who had died in battle eluded her, and were changed to the clouds of the dry season. In the Society group the soul was conducted by spirits to Po ("Darkness"), where its ancestors scraped it with a shell and fed it to the god. It passed through his body and reshaped itself. After undergoing this process three times, it became deified, and could revisit the world and inspire living persons. There was also a heaven, invisible to mortals, located on the island of Raiatea, where the souls of the Areoi and others led a life of pleasure. In the Marquesas there were three underworlds, one above the other. The lowest was a very pleasant place, while the uppermost was a miserable one. Souls went to one or another of these, according to the number of pigs sacrificed for them. There was also an upper world inhabited by the gods and the souls of deified chiefs. In Hawaii the dead went to an underworld, and there was a tale of a man who descended to it by a long rope, captured the soul of his wife and, returning, forced it to reenter her body. In New Zealand the souls passed to the northernmost point of the island, where they lacerated themselves after the manner of mourners, and then slid or leaped into the underworld,

undergoing successive stages of death, passing to lower and lower regions, and finally being extinguished.

The dead were treated with the greatest respect, for even when the natives were not ancestor worshippers, they had a lively fear of ghosts, and did not wish to incur the ill will of the departed. As soon as death occurred, all the relatives joined in loud wailing, which was sometimes kept up for several days. In Polynesia the mourners often beat their heads with stones and lacerated their faces and breasts, but this was rarely done in Micronesia or in Fiji. In Hawaii and the Society group the whole population joined in violent mourning on the death of a chief. Such occasions were made an excuse for the wildest license. In Fiji the mourning and the preparation of the body for burial were begun as soon as the person's condition was considered hopeless. The supposed corpse might live for several hours, speak, eat, etc., but it was thought that the spirit had left it and that its motions were purely involuntary. In extreme cases a man might be buried alive. In all the localities where earth burial was practised the body was washed, anointed with oil, and dressed in the best clothes and ornaments. It was allowed to lie in state for a time, so that relatives from a distance might pay their respects to it. A few favorite belongings were buried with it.

In New Zealand, the Marquesas, Hawaii, and probably the Society group human sacrifices were made on the death of a chief that their spirits might accompany the dead and serve him in the other world. In New Zealand wives were often strangled at their own request. In Fiji several of a chief's wives were usually strangled, and their bodies placed in the grave as a carpet, while at least one strong warrior was

killed in order that he might go before the chief and overcome the dangers of the spirit road for him. In the Marshall Islands a man was sometimes killed and buried with a chief, but the practice seems to have been unknown elsewhere in Micronesia.

In Samoa the spirits of those who had not been buried occasioned great concern. They wandered comfortless and haunted their relatives. When a man's body could not be obtained, his relatives went to some place near where he had met his death, spread a piece of tapa on the ground, and prayed for his spirit to visit them. The first living thing that alighted on the sheet was believed to contain his spirit, and was taken home and buried with the same ceremonies as would have been accorded the real body. Even the souls of those whose bodies had been properly tended were considered more or less malevolent, and attempts were often made to drive or entice them away from the living or to prevent their return.

In the Gilbert group the whole village turned out with clubs on three successive nights and went through the town, beating the ground and trees to make the ghost leave. In Tahiti, after the corpse had been placed on a bier in the embalming house, a special priest dug a hole at the foot of the bier and prayed that the dead man's sins might be deposited there. He then planted a post in the hole and, going up to the corpse, laid a few strips of plantain leaves on it, symbolizing the members of its immediate family. He bade the spirit to be contented in its new home and not to return to trouble the living.

The Tahitians also had a peculiar ceremony in which a masked and elaborately costumed priest went through the district, accompanied by a number of men

whose bodies were painted red, white, and black, and beat everyone whom he met. They were supposed to be inspired by the spirit of the deceased and revenged any injury to him. The Samoans kindled large fires near the grave, and kept them burning all night for ten nights. Persons who had touched a corpse were under certain *tapus* until they had been ceremonially purified, but the purification usually took place shortly after the funeral, and long mourning periods were unusual. The outward signs of mourning were old garments and in some cases special ornaments or methods of wearing the hair.

The methods of disposal of corpses were surprisingly varied. Several different methods were often practised simultaneously in the same group. Simple earth burial in an extended position was the rule in Micronesia. In the Carolines and Gilberts the body was usually laid with the head east. In the Marshalls the bodies of women were sometimes thrown into the sea. Sea burial was also practised in the Carolines. In Ruk, in the Carolines, the bones of the dead were sometimes hung up in the dwelling. In the Gilberts the bodies of some persons were mummified, and the skulls of ancestors were preserved. The Marshall Islanders raised mounds faced with coral slabs over their graves, while burials in stone vaults have been found in Ponape, in the Carolines.

In Fiji a man was usually buried under the floor of his own house. If he was a chief, the house was then abandoned and became a shrine where his spirit was worshipped. In some cases the body was placed in a niche in the side of the grave. In one instance a chief's son was laid on the deck of a large double canoe, and the whole covered with a mound.

In Tonga chiefs were buried in *langi*, large mounds containing a stone-lined vault. Smaller mounds were erected over commoner's graves, their tops being covered with pebbles of different colors arranged in simple designs. In Samoa simple earth burial in an extended position with the head east was the rule for all classes. Chief's bodies were sometimes placed in log coffins, and their graves were covered with low mounds. Bodies were sometimes set adrift in canoes. A single family of chiefs mummified their dead and preserved the corpses in a special house. In Niue corpses were set adrift or exposed, and the bones placed in a cave or vault. In the Cook group corpses were buried in a *merae* ("sacred place"), placed in a cave, or thrown into a chasm. Bodies were buried in a flexed position, face down and head to the east. The limbs were bound, and heavy stones placed on the grave to keep the ghost from returning to trouble the living. Bodies placed in caves were carried out into the sun from time to time and rubbed with oil until they finally became mummified. Rank seems to have played no part in determining the method of disposal, although one cave on Mangaia had one entrance for chiefs and another for commoners. In some cases the body was carried to a *merae*, left there for a few hours, and then taken to the cave. When this was done, the spirit was supposed to remain in the *merae*, the disposal of the body being called "the throwing away of the bones."

In the Society and Marquesas groups and in the island of Mangareva, in the Tuamotus, nearly all corpses were mummified and kept for several months. The viscera were removed by way of the anus, the skin punctured to release the juices, and the body

sunned and rubbed with coconut oil until it dried up. In the Society group the brain was also removed, and the body cavity packed with tapa soaked in oil. When mummification was complete, the corpse was dressed, and kept either in the dwelling or in a small special house built for the purpose until it fell to pieces. The bones were then gathered and hidden in a cave, or were sometimes buried in a *merae*.

In the Society group the skulls of chiefs were preserved, and in the Marquesas those of most men. Earth burial in a flexed position was also practised in both these localities, but was limited to the very poor, the insane, and certain persons whose ghosts were especially feared. In the Marquesas the body was sometimes placed in a log coffin after mummification and carried to a cave or left in the branches of a tree in some sacred place. Chiefs and priests are said to have sometimes been buried in vaults. In Easter Island bodies were exposed in a sacred place, and the bones gathered and hidden in vaults. Burial was also practised.

In Hawaii commoners were usually buried in a flexed position, while chiefs and persons of importance were placed in caves. The bodies of some chiefs were buried until the flesh had decayed, then dug up, and the bones cleaned and preserved, either in a temple or in a small sacred house near the dwelling. Great care was taken that they should not fall into the hands of an enemy. Lesser chiefs and priests were sometimes buried in an extended position, the priest's graves being within the temple where they had officiated. Some priests were buried in stone vaults in platforms. The bodies of fishermen were wrapped in red tapa and thrown into the sea. Bodies placed in

caves were sometimes preserved for a time by eviscerating them and packing them with salt or by varnishing them with *ti* root.

In New Zealand slaves and commoners were buried in a flexed position. Persons of importance were usually placed in a coffin or canoe, and placed in a tree or on a stage in some sacred place. About a year later the bones were cleaned, oiled and painted red, and hidden in a cave, chasm, or hollow tree. The natives of the south island sometimes mummified their dead, eviscerating the body, packing it with tow, and drying it over a fire. All the Maori sometimes mummified and preserved the heads of chiefs. In the northern part of the south island and in a few parts of the north island the dead were cremated. The related Moriori of the Chatham Islands usually buried their dead with the face toward the west. Chiefs were placed in canoes or covered coffins. Commoners were sometimes buried with the head or body above ground. Noted fishermen were set adrift in canoes, and a single tribe practised cremation.

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FIRE MAKING ON THE MARQUESAS ISLANDS (p. 38).

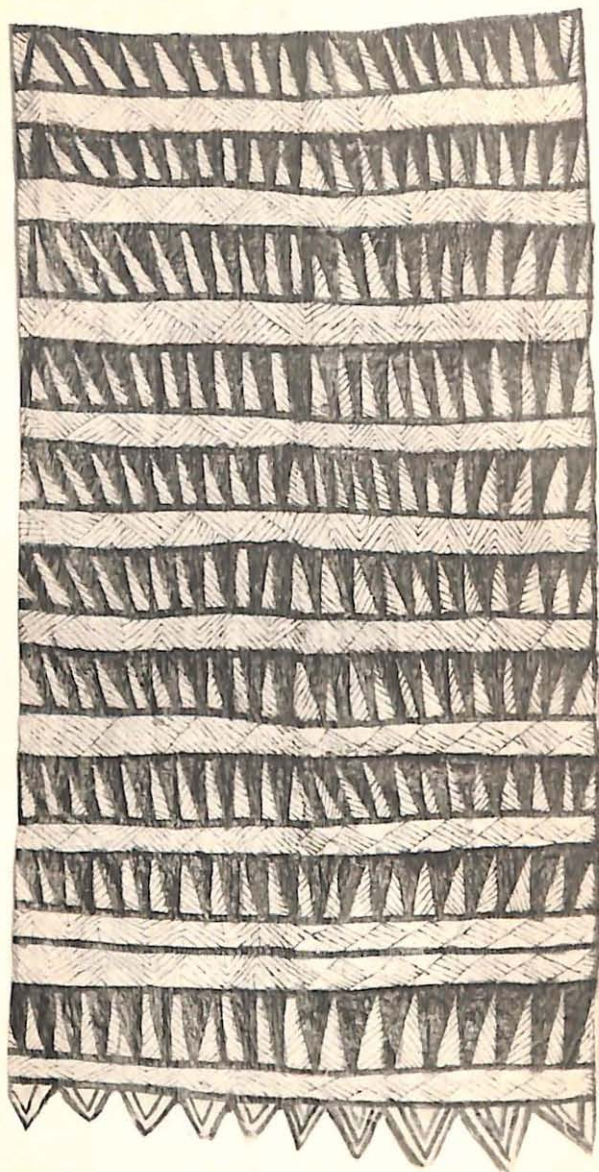
From Photograph by R. Linton.



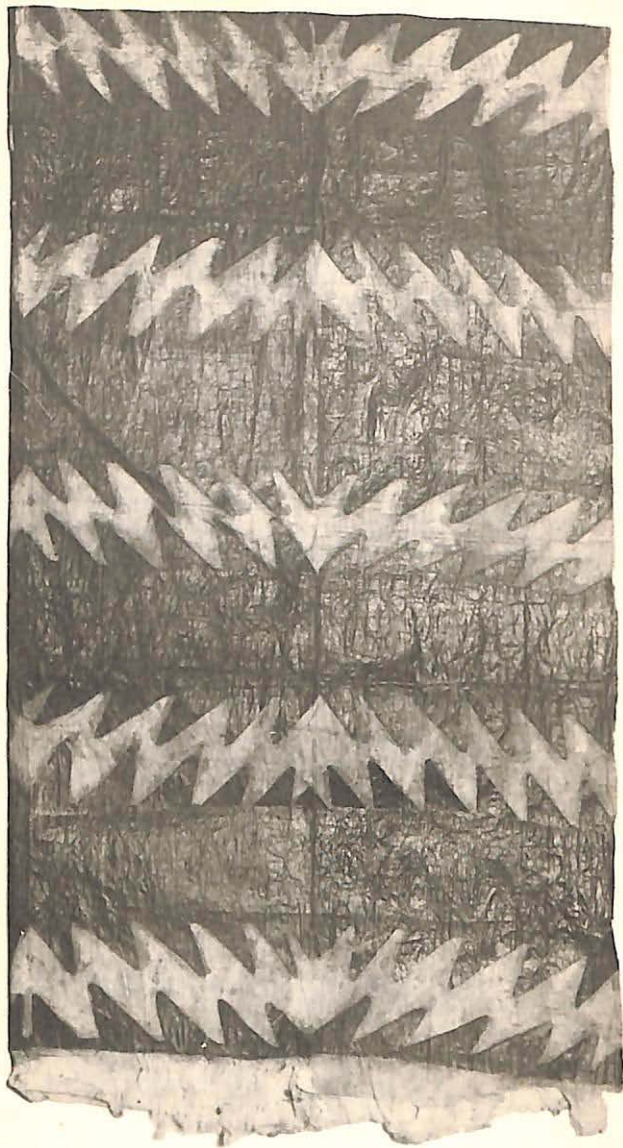
CARVED WOODEN BOX FOR THE STORAGE OF VALUABLES (p. 45). MAORI, NEW ZEALAND. CASE 17.
Presented by Arthur B. Jones.



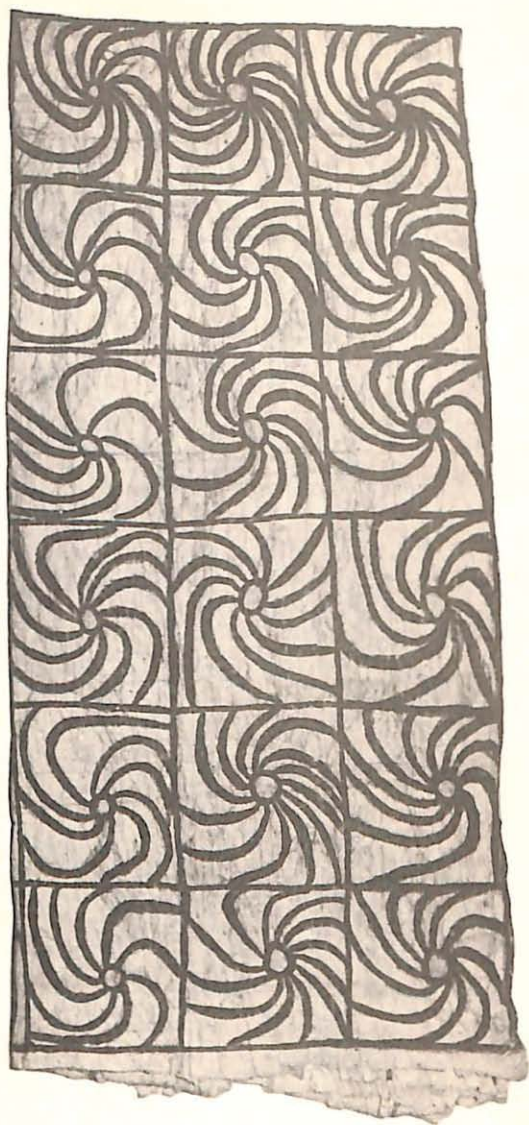
CARVED WOODEN FOOD DISH (pp. 45, 144). MAORI, NEW ZEALAND. CASE 16.
THE FIGURE AT THE RIGHT END REPRESENTS A MAN; THAT AT THE LEFT, A WOMAN.
Presented by Arthur B. Jones.



BARK CLOTH OR TAPA, SAMOA (p. 51).



PAINTED BARK CLOTH, SAMOA (p. 51).



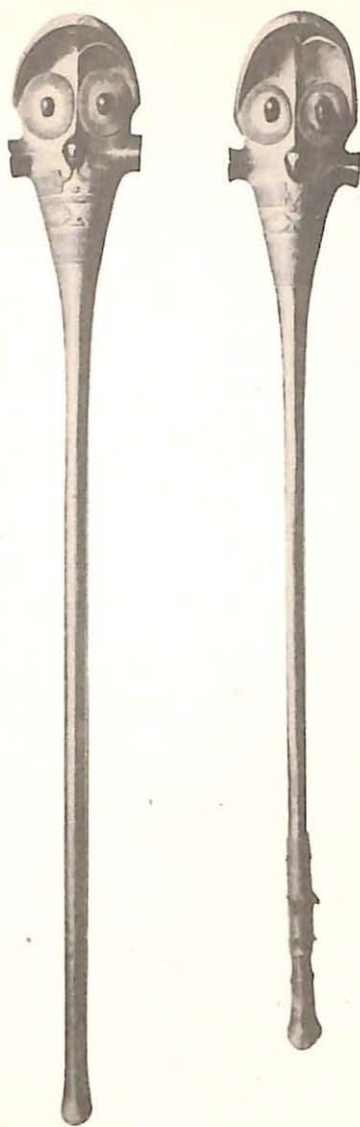
PAINTED BARK CLOTH, SAMOA (p. 51).



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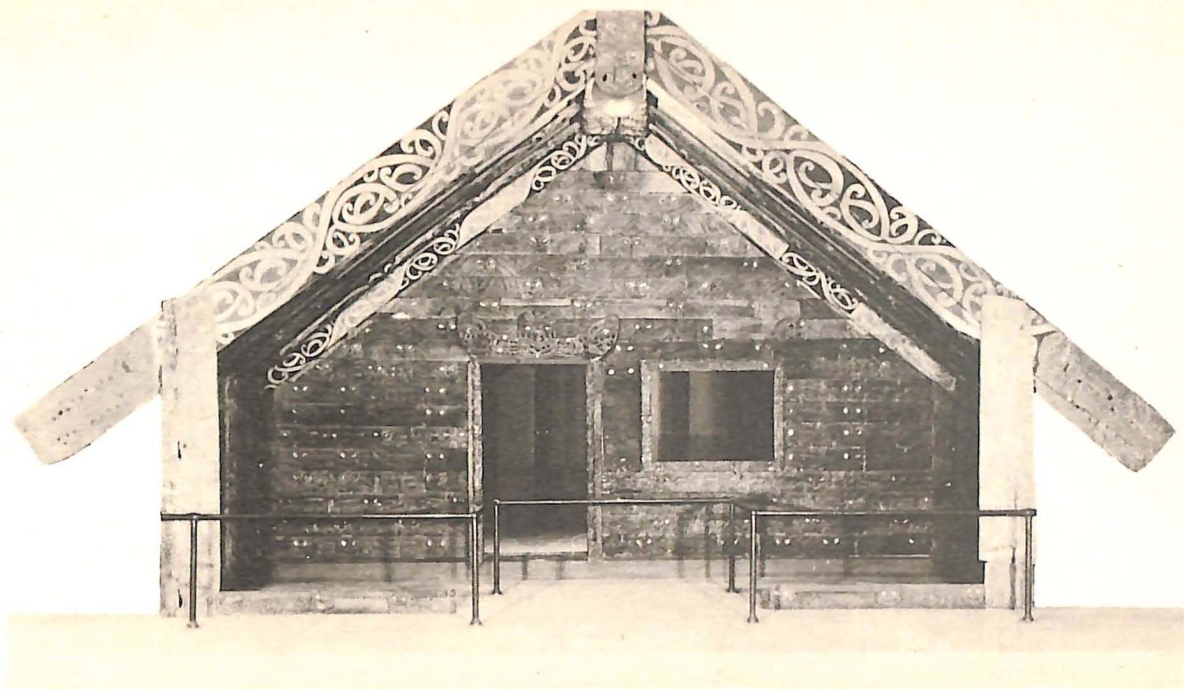
CEREMONIAL PADDLE (p. 106).
MANGAIA, COOK GROUP. CASE 32.



WOODEN CLUBS (p. 118).
WITH BROAD HEADS CARVED INTO HUMAN FACES, MARQUESAS ISLANDS.



CANOE, TONGA (p. 102).
FROM CAPTAIN COOK'S VOYAGES.



FRONT VIEW OF ORIGINAL MAORI COUNCIL HOUSE, NEW ZEALAND (p. 78).

ERECTED IN FIELD MUSEUM, HALL F.

Twenty feet wide, fourteen feet high.



SUIT OF ARMOR, GILBERT ISLANDS (p. 122). CASE 2.



MAORI ROBE OF UNDYED FLAX (*Phormium tenax*).
WITH STRINGS OF BLACK FLAX ATTACHED. NEW ZEALAND. CASE 14.



MAORI FEATHER ROBE (pp. 56, 70, 141).
WITH A BREAST ORNAMENT OF JADE (HEITIKI) REPRESENTING AN ANCESTOR.
NEW ZEALAND. CASE 14.