MUSEUM HANDBOOK

PART II—CLOTHING

BY

STANLEY C. BALL

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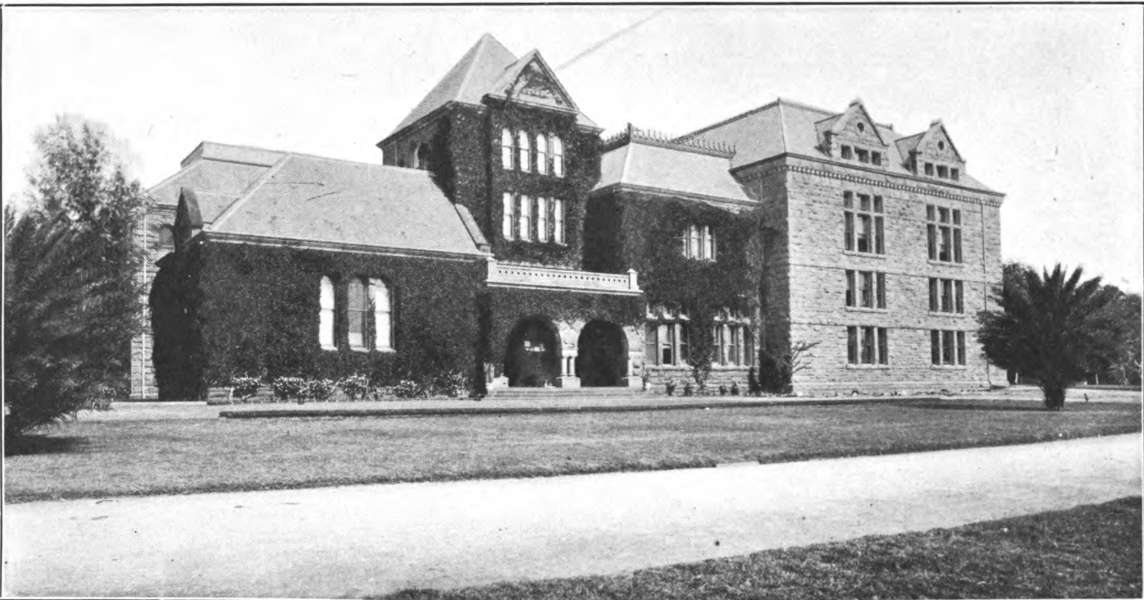

The Bernice P. Bishop Museum, Honolulu.

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PART II—CLOTHING

By Stanley C. Ball

INTRODUCTION

Living chiefly in the warm lowlands of subtropical islands, the Hawaiians, before the introduction of fashions by the white man early in the nineteenth century, found their real needs for clothing limited to a few scanty articles of dress. Their rugged good health proves that the exposure of almost the entire body to air and sunlight was beneficial rather than harmful.

The principal, and usually the only piece of clothing worn by the men was a loin cloth, or malo; that of the women was a skirt called pa-u. Both of these articles of clothing were made of tapa, usually very plain. But the kings and chiefs, like the royalty of other peoples, wore distinctive coverings on important occasions. Remarkable were the cloaks and capes made of brilliant bird feathers. Although true hats were unknown until the white man set the style, feather helmets, worn both for protection and ornamentation, graced the heads of royal warriors. The Hawaiians occasionally wore shawl mats of fine quality in place of tapa. Sandals, woven of various fibrous materials protected the feet in certain kinds of work.

TAPA OR BARK CLOTH OF THE HAWAIIANS

The main articles of clothing worn by native tropical peoples were made from the inner bark of various trees and shrubs. This bark cloth (more properly paper) in Polynesia is called by various names, one of which is "tapa." The original general name in Hawaii was "kapa."

Bark cloth was also worn in Melanesia and Micronesia, Malaysia, Africa and South America. Its use has not entirely ceased even yet in certain communities where more durable cloth is not easily obtainable. But in many of the islands in Polynesia tapa is no longer made. This is true of Hawaii, whose people until the middle of the nineteenth century produced tapa of the highest quality. Loom-woven goods has many advantages over the clothing of olden days, being stronger, readily washed, of greater variety and more easily obtained.

The collections of tapas and of implements and materials of manufacture preserved in the Bishop Museum are the best in existence. Those

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from the Hawaiian islands are especially well represented. The visitor may find at one end of Hawaiian Hall several exhibition cases devoted to the subject. In the center, the process of tapa manufacture is portrayed by a life-like group consisting of an elderly woman and her youthful helper surrounded by their implements (fig. 2). At the right a complete

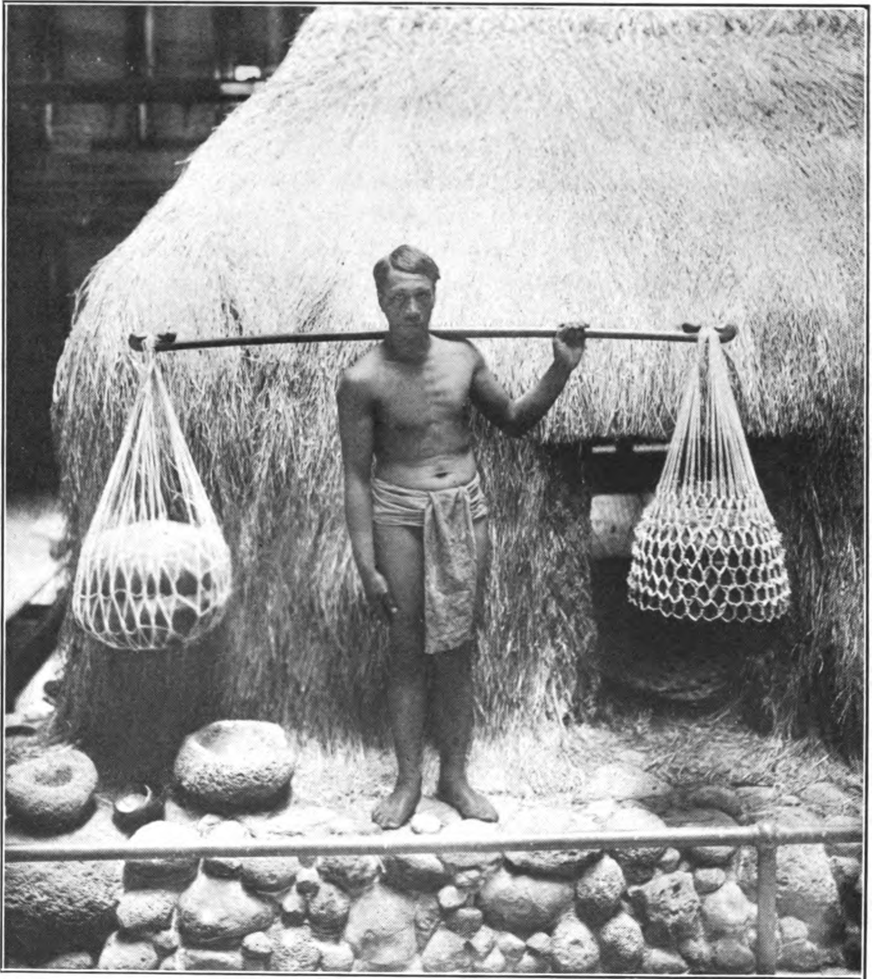

FIGURE 1.—Hawaiian wearing tapa malo.

set of tapa making tools and materials deserves careful study. But the visitor's memory will perhaps retain longest the impression of the remarkable series of tapas preserved in the two cases (fig. 3) on either side of the group and of the small squares shown by transmitted light in the windows.

While none of these tapas bear colors of the highest brilliance, their

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varied hues are none the less pleasing to the eye. Many compare favorably both in color and design with the best products of the white man's manufacture. Great variety in size, thickness and quality exists. All this can best be understood by learning how tapa was made.

The Hawaiians were well provided with plants which yielded suitable

FIGURE 2.—Hawaiian tapa maker and her attendant. (The models are cast from life.)

fiber. Some of these are indigenous, or native, to Hawaii, like the mamaki shrub (*Pipturus albidus*), oloa shrub (*Neraudia melastomaefolia*) and *Boehmeria stipularis*. The best, however, were introduced by the Hawaiians. No doubt they took good care, when they set out from their earlier home to the south or west, to place in their canoes slips of wauke or waoke, the paper mulberry tree (*Broussonetia papyrifera*) which had served them so well as a supply. While this plant, through its transpor-

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tation by the natives, now grows on islands throughout the Pacific, its native home is unknown. Certain it is that this shrub was cultivated in old Hawaii to yield its bark for the making of the finest tapa.

The breadfruit tree (*Artocarpus incisa*), the hau (*Hibiscus tiliaceus*), the milo (*Thespesia populnea*), and perhaps the so-called Hawaiian fig were also introduced by the pioneers who settled here. The bark of all these could be made into good tapa and served other purposes as well. At the same early date another useful tree was brought to the islands which played a part, as we shall see, in the tapa industry: this is the

FIGURE 3.—Two tapa cases in the Bishop Museum.

candlenut or kukui tree (*Aleurites moluccana*). Another native plant which supplied bark for tapa is the Hawaiian raspberry, akala (*Rubus macraei*).

The method of tapa manufacture can well be explained by tracing the process in the treatment of the paper mulberry. This graceful tree (fig. 4) was cultivated upon the slopes about the sweet potato patches. At the age of about two years the stem was from four to six feet tall and an inch or more in diameter. This part of the plant was made to grow comparatively free from knots. By splitting the bark from top to

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bottom with a piece of shell it could be stripped from the wood. The roots, it is said, were usually left in the ground to send up new suckers.

While most of the labor in tapa-making was performed by the women, the tools were made by the men. The anvils (fig. 5) were hewn from the wood of the kawau (*Byronia sandwicensis*) with stone adzes. One of these anvils, called *kua kuku,* is shown in the group case. They were about five feet in length, smooth on the top and sides, and deeply grooved beneath. Each end was undercut. The other necessary tools, the tapa beaters or mallets, were likewise fashioned first with adzes. The hard

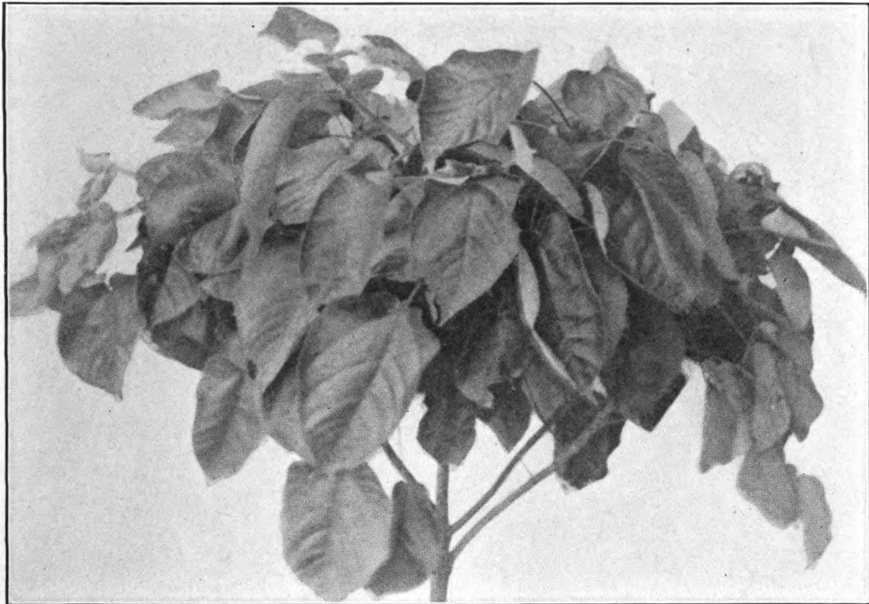

FIGURE 4.—Top of young wauke tree.

wood of such trees as alani (*Pelea sandwicensis*) and kauwila (*Alphitonia excelsa*) and uhiuhi (*Mezoneuron kauaiense*) was used for these beaters.

The tapa beaters were made in two forms. One was a rounded club; the other had four flat surfaces. The first type, called *hohoa,* was usually left smooth, while upon the second type, *ie kuku,* characteristic grooves were carved with stone and shark tooth cutters (fig. 7). Each of the four faces had a different pattern. One face of some beaters was plain. In the case showing tapa-making implements the variety of grooves and pits is well shown. These mallets are about a foot in length, two inches in diameter, and have a rounded handle at one end.

Since the hollow anvil was supported upon two stones it was quite resonant. The blows of the beater produced a not unpleasant sound

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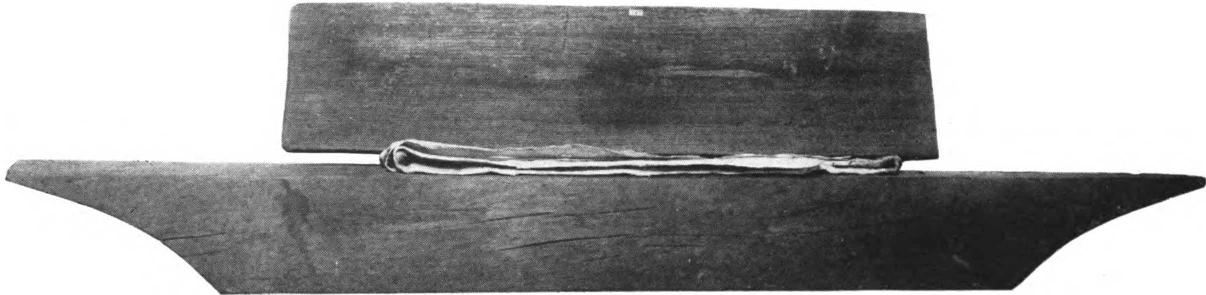

FIGURE 5.—Grooved wooden slab, *papa hole kua ula*, and tapa anvil, ***kua kuku***.

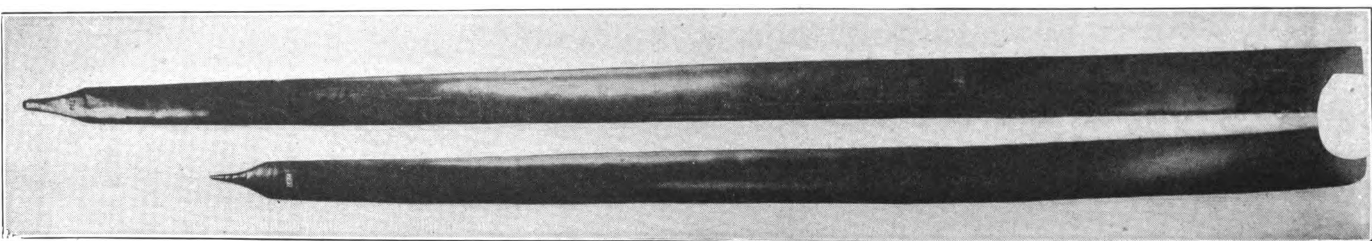

FIGURE 6.—*Laau kahi olona*, boards on which the outer bark was scraped from the bast of wauke and olona.

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which could be heard for a considerable distance through the wooded valleys. It is said that the women used their beaters to signal to one another as with a telegraphic code.

It is certain that the exact method of beating out the bark was not always the same. Unfortunately the accounts written in early days by

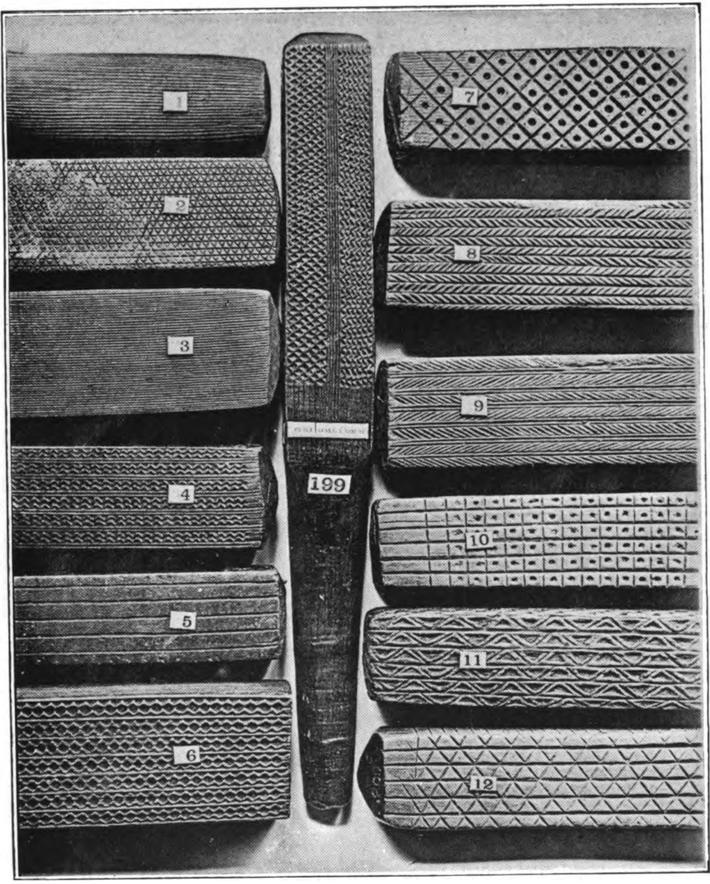

FIGURE 7.—Tapa beaters, *ie kuku,* showing various patterns.

white men who had opportunities to watch the process describe it only in a very general way. Judging from those accounts and from what we are told by aged Hawaiians who still remember how their mothers and grandmothers worked, the method employed depended upon the operator and upon the kind of tapa desired.

Since only the inner bark, or bast, has the long fibers suitable for tapa, the outer bark was first removed. This was often done by placing the strip, which had been flattened by rolling it while wet, upon a narrow board and scraping it with a tool made of shell or turtle rib. Such boards

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(fig. 6) were used also for separating the fibers of the olona, as shown in another case, and were therefore called *laau kahi olona*. Another method of separating the fiber was to pull the bast and outer bark apart with the initial help of a bamboo knife.

If bed tapa, called *tapa moe* or *kuina tapa moe,* was to be made, the steps took place somewhere as follows: First the strips of bast were carefully wrapped in ti leaves and placed in quiet water at the edge of the sea. This process served to bleach as well as to soften the mass, and at the end of ten days or more the woman's fingers told her that the bark had acquired the proper softness.

Usually five pieces of bast were required to make a single sheet of bed tapa five feet wide and seven feet long, so the woman laid five strips one on top of another, and tied them at intervals of six to nine

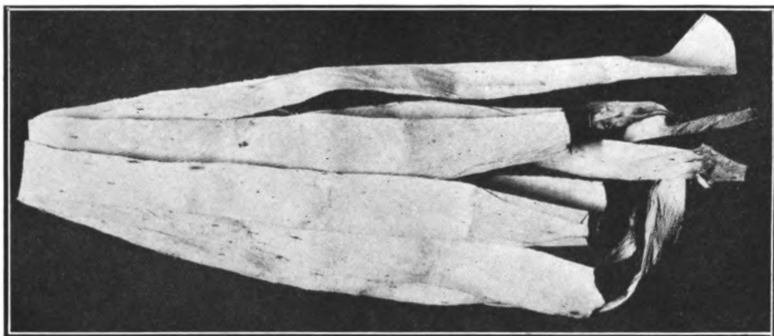

FIGURE 8.—Pieces of *mo'omo'o,* tapa after its first beating.

inches with fibers taken from the edges. She now had a bundle of soft, moist bark about four inches wide and five feet long.

The beating was carried out in four stages, according to the degree of fineness of the mallet face, and each stage required a day's work. The first, or coarser, beating was called *pa-i-a*. All the bundles were put through this process before the finer beatings were applied to any. The moist material, when not under the mallet, was kept in its ti leaf wrapping. The mallet faces used in the first three beatings were longitudinally ribbed, but the face of the fourth bore a finer and more or less elaborate pattern. No doubt each woman had her favorite beater.

The pulp was first beaten with one of the round, smooth mallets upon a smooth stone (*aia*). The blows fell lengthwise of the fiber, beginning at one end of the bundle. The beating served a double purpose, felting the five strips together as the mass became thinner, and widening the sheet at right angles to the line of the fiber. In the process, the tying strings, no longer necessary, broke or merged into the material. At the

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end of this first beating the sheet was about nine inches wide (fig. 8), and was known as *mo'omo'o*. Further bleaching was accomplished by drying in the hot sunlight. The sheet could then be stored until needed.

When the woman desired to complete the bed tapa she took five of these pieces of *mo'omo'o,* one to make each sheet of tapa, rolled them loosely into separate coils, and placing them in a calabash, carried them to a fresh-water spring. Here they were allowed to soak thoroughly for part of a day. Next she carefully wrapped each *mo'omo'o* closely, but not tightly, in a ti leaf packet, placed the five packets again in the calabash, covering them with more leaves to exclude the air. She left them there

FIGURE 9.—Sample of tapa with light showing through thin lines made by ridges of the beater.

for ten days or more, examining a packet now and then, until the *mo'omo'o* had become sufficiently slimy and the fibers had attained just the right softness.

The third beating was the principal one. In order to keep her materials shaded from the sun and to prevent interference, each woman had her own little shelter thatched with ti leaves or grass. Here with her anvil, beaters, bowl of water and other implements she would begin in the coolness of the morning the task of beating. Removing the leaves from one of the five packets she would squeeze from it the slimy water. Without unrolling, she flattened the mass slightly, and laid it upon the anvil—a small mass of pulp about nine inches long and six inches wide.

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Using the face of the beater which had the coarsest grooves and ridges, she would pound the mass with repeated blows. As it spread out in all directions she turned the edges back from one side and another (not unlike the rolling of dough for pastry). As a result, the fibers, at first lying parallel as they grew, now became turned and crossed in all directions and well felted together. The material at this stage was called *mo'omo'o hana.* The edges were no longer turned in but the piece was allowed to spread out into a wider and wider sheet.

The many tapas on exhibition, especially the small squares shown by transmitted light in the windows, reveal the characteristic watermarks imprinted in the moist tapa by the beaters (figs. 9 and 10). Not only did this treatment give individuality to each piece, but increased its softness and flexibility.

The next step was regarded as important. In the morning the fresh tapa was spread upon a specially prepared pavement of small smooth pebbles, and weighted down with stones along the edges. As the sheet rapidly dried in the sunlight, these stones were moved so that the shrinkage would be even and the tapa would not tear. The surface was then smoothed by further beating with a plain-faced mallet and, if necessary, the edges were trimmed square with a bamboo knife. But an expert tapa maker could so beat out the tapa through its various stages that trimming was not required. To complete the bed tapa she had only to fasten the five sheets together. First she made her thread from some of the trimmings of tapa or bast, which she rolled on her thigh with her hand. Then with a needle of bone, bamboo or coconut leaf-rib she sewed the sheets together along their shorter edges which now became the top of the bed covering. It was called a *kuina tapa moe.* The outer sheet she usually colored by one of the methods described below. The width varied between four and six feet and the length between seven and nine feet.

If the tapa was not to be white the ten days' soaking in sea water was omitted. The use of mamaki instead of wauke bark yielded a dark colored tapa and so was not given the sea bath.

When smaller sheets were to be prepared, the Hawaiian woman carried out the same principles, but followed a slightly different method. For a man's loin cloth, malo, or the woman's short skirt, pa-u, one strip of bast afforded material of sufficient width and by the overlapping of the ends of two or more pieces, the proper length. By beating the edges together, they became firmly felted and the seam became obliterated.

It is said that in making these garments the bast of the wauke was not transformed into pulp, as in the process for bed tapa, for this would have reduced its strength. The natural sap in the fresh bark served to aid the felting of the fibers as it was beaten.

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Another way of producing a large sheet of tapa was to place several pieces of moistened *mo'omo'o,* the narrow widths obtained by the first beating of single strips of bast, one upon another and felting the pile into a single thin sheet. This is still done in the Austral Islands. Sometimes the gummy juice (*pilali*) from the bark of the kukui tree was first spread upon the single sheets.

The use to which the tapa was to be put determined the care and treatment used by the women in its preparation. The finest and thinnest

FIGURE 10.—Sample of tapa made by a beater whose surface was cut with grooved squares containing pits.

required prolonged beating. In Tahiti the softest tapas were made by beating together the gummed sheets of several fine white tapas which had been rendered pliable by use as clothing. Coarse tapa required less pounding and could be made from heavier bark than wauke. If great strength was needed two or more sheets were united and beaten not too thinly.

When, during the process of pounding, thin spots or holes developed in the cloth, wet patches of tapa were laid over them and beaten in until all was of even texture. In a similar way the Tahitian women built up enormous sheets nine feet wide and forty feet long by laying out on

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FIGURE 11.—Liners for marking tapa (1262, 1263, 1265, 1266); tapa needles (2988, 4472); awl (2983); pandanus fruit paint brushes (2982); and grooving tool (4043).

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plaintain leaves the moistened strips of bast from which the outer bark had been scraped, taking great care that all parts of the two or more layers of bast should be of the same thickness. In this state it was left over night. In the morning most of the water had drained off or evaporated and the fibers had begun to adhere so that the whole piece could be lifted from the ground.

The Hawaiians employed another implement—a hardwood board (fig. 5), finely grooved like the tapa beaters. It was called *papa hole kula ula.* By placing the partially prepared tapa upon this board and beating it each surface was subjected to the action of a different set of grooves and ridges. Several of these boards are shown in one of the cases. Another way in which they very likely were used was in connection with the curious tool in the same case which resembles somewhat a kitchen chopping knife (fig. 11). This is a thin piece of wood with a sharpened edge, upcurved ends, the back carved as a handle. Very few of these remain. By placing the moist tapa upon the grooved board and passing the thin-edged tool over it so that it would fit these grooves, very fine, sharp flutings would be produced in the tapa. It is believed that some of those to be seen in the cases underwent this treatment.

While the plain white tapa made from the wauke (p. 5) and brown or gray tapas produced from the bark of the mamaki, oloa and other plants were suitable for many uses, the taste of the Hawaiians led them to dye or mark much of it with various special stains. The roots of the noni plant were pounded, mixed with fresh water and strained. The malo or pa-u was dipped in the noni water, then folded lengthwise and suspended by a string over the sea so as to immerse it in the waves, one-half at a time. The action of the salt water turned it red. Such a garment was called *puakai.*

While most women of the country districts could make tapa, the most skillful work, especially in marking and dyeing, was done by those of chiefly rank. They vied with each other to produce the most attractive designs.

Black and gray dye could be made by using a concentrated or diluted mixture of charcoal in water or kukui nut oil. The charcoal was obtained by roasting the kukui nut or sugar cane. The tuber of the turmeric plant (*Curcuma longa*) furnished a deep orange-colored juice. From the wood and root of the noni tree (*Morinda citrifolia*), the fruit pulp of the nanu tree (Gardenia) and the bark and root of the hoolei tree (Ochrosia), yellow dyes of different intensities were obtained. Although a decoction of the leaves of the mao shrub (*Abutilon incanum*) gave a green coloring, the Hawaiian apparently used little of it; perhaps on account of its rapid fading tendency.

Another red dye was made from the bark of the kolea tree (Suttonia)

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FIGURE 12.—Bamboo liners for marking tapa.

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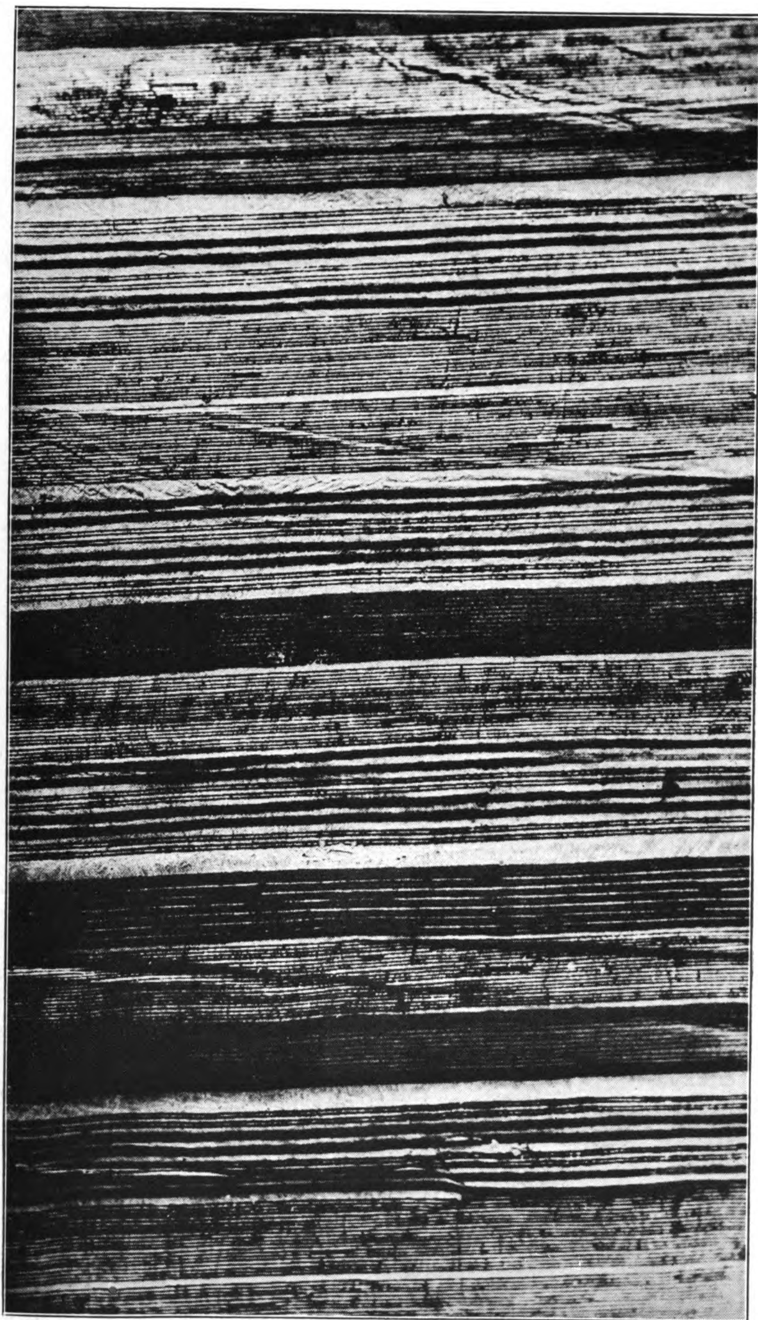

FIGURE 13.—Tapa marked by such liners as are shown in figures 11 and 12.

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and, in Tahiti at least, from the fruit of the fig or banyan tree, each little fruit yielding a drop or two of milky juice. When a sufficient quantity had been squeezed into a coconut cup, leaves of the kou tree (*Cordia subcordata*) were immersed in it and then pinched gently. The pink color soon began to appear and with continued treatment deepened into a brilliant crimson dye. Other red dyes were made in Hawaii from the macerated pulp of *Bixia orellana* cultivated for the purpose, from the fruit of the ohia ai tree (*Eugenia malaccensis*), and from the leaves of two ferns, the palaa (Microlepia) and amaumau (Sadleria).

Blue of a rather pale but lasting hue the Hawaiian found in the berries of the uki plant (Dianella). In addition to these organic colors various earths yielded yellow, red (*alaea*) and brown pigments when ground in tiny, shallow mortars of stone. After the introduction of turkey red

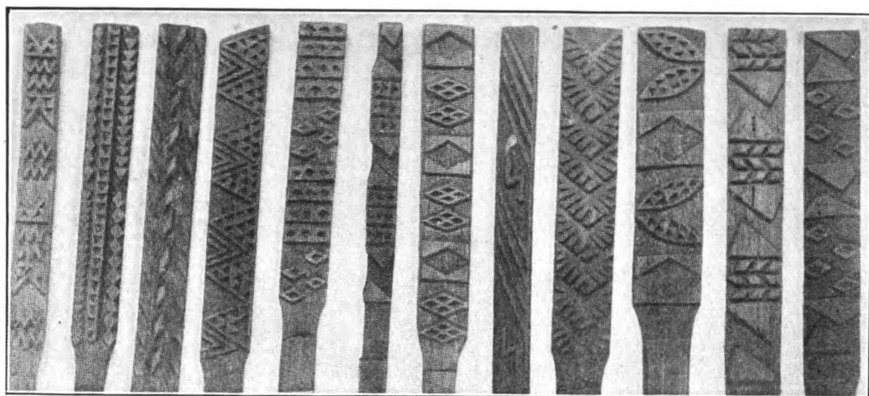

FIGURE 14.—Bamboo stamps for printing designs on tapa.

cloth, the natives secured dye from this by pulping or grinding. This dye was sprinkled over the tapa and beaten into it.

The Hawaiian women did not often dip their tapa bodily into the coloring matter but either skillfully marked or printed upon it, or else pressed into it pieces of thin tapa already stained. Ingenious pens and stamps were used in the first method. Probably the earliest marker was a pointed piece of hard wood, *lapa pa'u,* dipped into the dye or paint. Two of these appear at the left in figure. 11. Parallel lines could more neatly and quickly be drawn with the fork-like wooden pen. Bamboo liners (fig. 12) were cut with various combinations of fine points. Many of the tapas exhibited in the cases show evidences of such markers (fig. 13).

The most intricate and beautiful patterns, however, were printed with delicate stamps of bamboo (*ohekapala*). By means of a tool whose cutting point was a shark tooth, a design was carved upon the surface of a

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narrow strip. Many of these appear in case 17 (fig. 14); for some, the pattern was cut from tortoise shell and bound upon bamboo or wood.

With the paint or dye in a shallow stone cup, *poho hooluu pohaku,* (fig. 15, d) it was easy to dip the stamp in the dye and, after tapping the edge of the cup to remove the excess, to press it upon the tapa. A stick was used to support the hand. A partially stamped piece of gray cloth in the central group bears only a few impressions. Many combinations of stamps were used to compose the endless patterns (figs. 16, 17). Every visitor is sure to find some which please his fancy.

While the Hawaiians did little free-hand painting upon their tapas they are said to have used a primitive brush (fig. 11) made by chewing the small inner end of a drupe taken from one of the compound lauhala fruits (Pandanus). For setting colors, sea water or burned coral lime was used.

The black or gray tint was secured by rubbing over the surface a small tapa bag containing charcoal. Plain sheets evenly colored on one

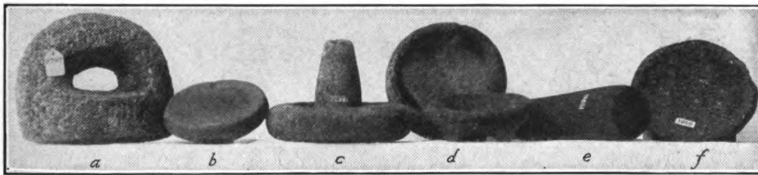

FIGURE 15.—*a*, Stone weight for holding tapa flat; *b, d, f,* stone cups for holding dye; *c, e,* mortar and pestles for grinding dye.

surface only were produced by pressing upon them, as indicated above, thin pieces previously dyed, or by sprinkling over them colored pulp. Pink and blue appear on many tapas decorated in this manner. It is believed that some tapa was colored in the pulp stage before being beaten. Broad applications of several colors together were also made by the pressing-in process, patterns being cut for the purpose. Many were the names applied to tapas in different localities on account of the colors and patterns. To make a broken line of diamond-shaped marks, a twisted cord of olona fiber was dipped in the coloring matter and snapped upon the tapa.

Other utensils to be seen in Case 17 are stone mortars and pestles (*pohaku kui nanahu*) for grinding charcoal (fig. 15, *c*); gourd cups (*poho pohue no ka hooluu*) for holding dye, stone cups for the same purpose (fig. 15, *b*), a coconut receptacle (*poho niu*) containing kukui nuts for dyeing, and a stone weight (*pohaku kaomi*) used to keep the tapa flat while the wind was blowing (fig. 15, *a*).

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The chief use of tapa was in making the scanty garments for common wear. The pa-u was made of a strip of tapa, either ornamented or plain, about one yard wide and four yards long. It was often wound in several thicknesses about the body and reached from the waist to the knees (fig. 2). The upper edge, turned in, was held by a cord of hau, twisted tapa, or olona fiber. An older piece, softened by use, was often worn beneath the new folds. By a later development several sheets were sewed together at the top, the outer being highly decorated.

For the men a tapa about one foot wide and three yards long served as a malo. Since one length of it passed between the legs from the

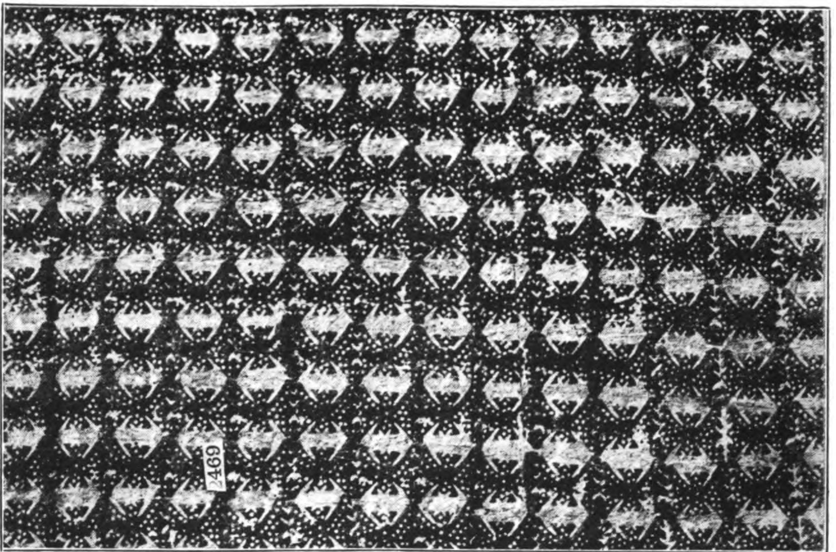

FIGURE 16.—Tapa with design made with bamboo stamp dipped in black dye.

knotted waist band, a soft grade of tapa was necessary. For the common man the malo was without colors. Fishermen soaked their malos in *kamani* oil to preserve them during use in the water. A glance at the models of Hawaiian men and women in the exhibition hall will show clearly how the malo and pa-u were worn.

Another sort of dress worn by both men and women was the shawl called *kihei*. It was knotted above one shoulder. And so in the words of Dr. Brigham: "Three only were the forms of dress on Hawaii for both sexes; for the man the malo, or narrow strip; for the woman the pa-u, a similar strip but wider and longer; for both sexes the *kihei* or shawl; in modern terms trousers, petticoats and cloak."

But bedclothing as well was necessary. Much of the tapa went to

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form the *kuina tapa moe,* or bed tapa. A *kuina* consisted of four inner sheets of white (*tapa alakea*) and an outer decorated sheet of *kilohana,* answering to the quilt in modern use. In some *kuina* one of the inner sheets was colored as well. The five sheets (p. 10) were sewed together at one edge. The bed tapa, while light in weight, was very warm. It could be wrapped about a person or spread over two or more companions on the spacious mat bed.

In dancing the ancient hula the Hawaiian women and girls found

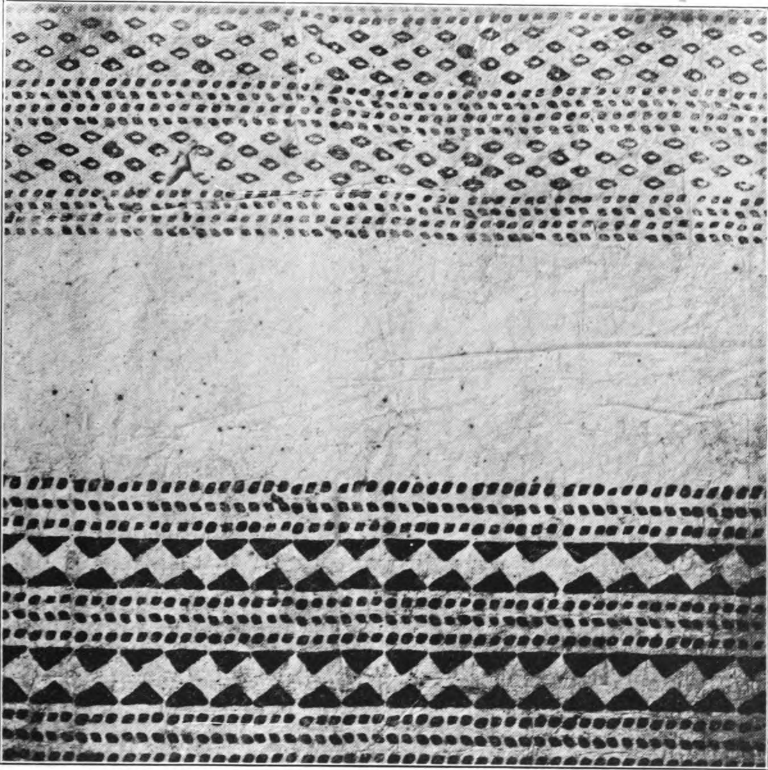

FIGURE 17.—Tapa carefully marked with bamboo stamps.

the hula skirt of tapa (*pa'u hula*) well suited to characteristic free movements of the hips. Such pa-us, as seen in the Museum collections, were in many instances attractively marked and colored. Grass dance skirts were not in old times worn in Hawaii but later were introduced from islands in the southwestern Pacific.

After the advent of horses in the early part of the nineteenth century riding pa-us were for a short time made of tapa. Some of these were saturated with *kamani* or coconut oil to give strength and protection

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against rain. Soon cotton cloth displaced these garments as it did the other articles of dress.

Perfumes of various kinds were applied to overcome the unpleasant odor of freshly made tapa. Threaded seed capsules of the mokihana tree (*Pelea anisata*) laid among the sheets imparted to them the scent of anise. Similar use was made of the powdered heart of sandal wood, *iliahi,* and of the root stalk of the awapuhi plant (Zingiber), and the flowers of the kamani tree (Calophyllum).

Tapa was used less commonly as arm and leg ornaments of white bands, and orange hued fillets for the hair. Rather frequent use of bed tapas was made in wrapping for burial the bodies of the dead. For the winding sheets, a special black dye was sometimes made, which caused rapid disintegration of the cloth.

While most of the tapa was worn as clothing, such a convenient and abundant material naturally came to meet other ends. Very serviceable it was for bandaging wounds; tied to sticks or limbs of trees it stood for signals, kapu signs, and "for sale" signs. Pulled apart it answered as lint to staunch the flow of blood, or spun into thick cord it made an excellent slow match or fire cord, *weluahi,* as shown in the low case at the opposite end of the hall. Before binding the stone adz head to its handle, several small pieces of tapa were often placed between the stone and wood to give a firm grip. Excellent wicks for the stone lamps with their kukui-nut oil were twisted from bits of old tapa.

Partitions of tapa within the houses were not usually decorated on account of the darkness, but upon the open lanai pleasing color effects could be secured. Mats of thick-ribbed tapa lay on the floor.

In the heiaus, or places of worship, the oracle tower of light framework had its covering of a coarse sort of white tapa beaten from the bark of the oloa shrub. Another use was to finish off the bases of the cylindrical feathered heads of the stately kahilis. Temporary sandals occasionally were made of twisted tapa strands.

Especially in relation to its durability as clothing, the question often is asked: Could the tapa be washed? While its nature prevented its being scrubbed or beaten in washing as cloth may be treated, still it was possible to cleanse it. This was carefully done by either moistening the tapa in water or by exposing it to the gentle action of the dew and then bleaching it in sunlight. Repetition often was necessary. Sometimes sunlight without moistening was enough.

Skirts and bed tapas, if well cared for by hanging them up when not in use, lasted for months, or even for years. Doubtless many a night in a lowland thatched house was so warm that people slept without bed covers.

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Tapas made by other Polynesians—the Samoans, Tongans, Marquesans, Tahitians and others—are on exhibition in the cases showing the material culture of these people. Some of the implements used in their manufacture also appear. While the beaters are quite similar in all the islands, some of the other tools vary considerably.

A fuller account of Hawaiian tapa and that made elsewhere in Polynesia and in distant lands is given in Ka Hana Kapa, by Dr. W. T. Brigham, Bishop Museum Memoir, Volume III, 1911. It is on sale at the Museum.

HAWAIIAN CLOTHING OF FEATHERWORK

We have seen that the Hawaiians wore garments made chiefly from the tapa cloth, but like other peoples they had also articles of clothing

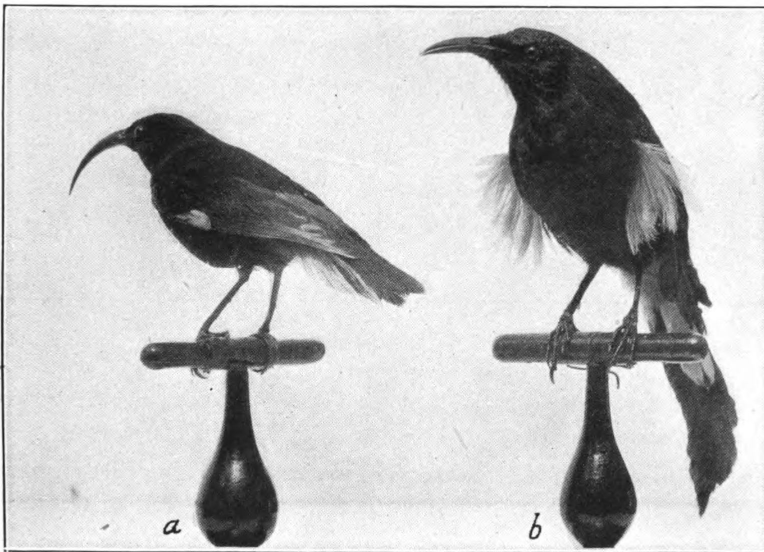

FIGURE 18.—Two birds which supplied yellow feathers: *a*, mamo; *b*, oo.

which were rather decorative than protective. These were the feather cloaks, capes and helmets worn only by persons of high rank, the kings and chiefs.

It is natural that feathers should have been used the world over for decorating objects intended to be showy and attractive. In India feathers adorn some of the punkas (fans) and images in the temples. Their decorative use extends through Siam into China. Feather scepters have long been symbols of chieftainship in Brazil and Venezuela. The peoples of Central America and Mexico had developed an especially high art of feather decoration at the time of the conquest by the Spanish. The

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wonderful birds of paradise furnished the chiefs of New Guinea with splendid plumes for their helmets and diadems. Practically all the islanders of the Pacific are known either to have tied or gummed feathers to various objects. But of all peoples the Hawaiians carried the art to the highest perfection.

Even though the Hawaiians found but few brilliantly colored birds in these islands they used those with such skill and taste that their feather cloaks, helmets, cordons, and war gods stand out above the work of other peoples as of the highest excellence. Like the beautiful rugs woven by the Persians and their neighbors, the featherwork of the Hawaiians required much time and patience in its production. A single large cloak

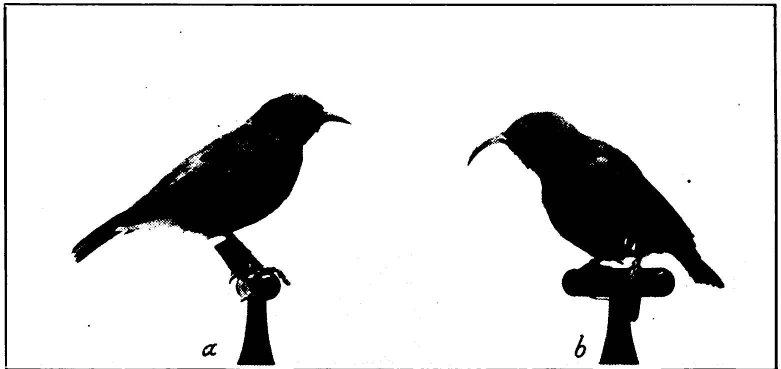

FIGURE 19.—Two birds which yielded red feathers: *a, apapane; b, iiwi.*

of the rarest feathers sometimes needed the labor of several generations for its completion.

Most of the feathers were obtained from the following birds: mamo, oo, *iiwi apapane* and *ou* among the land birds, *iwa* and koae of the sea birds.

The mamo (*Drepanis pacifica*) was a black honey-eater with orange-yellow feathers above and below the base of the tail, on the lower part of the back, and on the thighs (fig. 18, *a*). These beautiful yellow feathers could be worn only by the highest chiefs and kings. The mamo, confined to the island of Hawaii and never abundant, probably is extinct; not since 1870 has one been reported.

A commoner bird in the old days on several islands and still to be seen on Hawaii, the oo (*Acrulocercus nobilis*) feeds upon the nectar of such flowers as the tree lobelias. Both its glossy black body feathers and the yellow under tail coverts and long (axillary) tufts of about twenty feathers from beneath each wing (fig. 18, *b*) were used in Hawaiian feather work.

The *iiwi* (*Vestiaria coccinea*) is one of the most abundant and generally distributed of native birds, being found throughout the woods of all the

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forest-clad islands. On Oahu, however, it has become rare. Scarlet except for the black wings and tail, the *iiwi* (fig.19, *b*) furnished more feathers than any other bird. The brilliant red in most cloaks, capes and helmets came from this bird.

Occasionally the rich crimson feathers from the *apapane* (*Himatione sanguinea*) were used. This species (fig. 19, *a*) formerly was abundant on all wooded islands and still exists in some numbers. No doubt the Hawaiians preferred the equally abundant *iiwi* on account of its brighter plumage.

Green birds were plentiful but seem not to have held much attraction for the feather workers; only a few cloaks and capes have been found

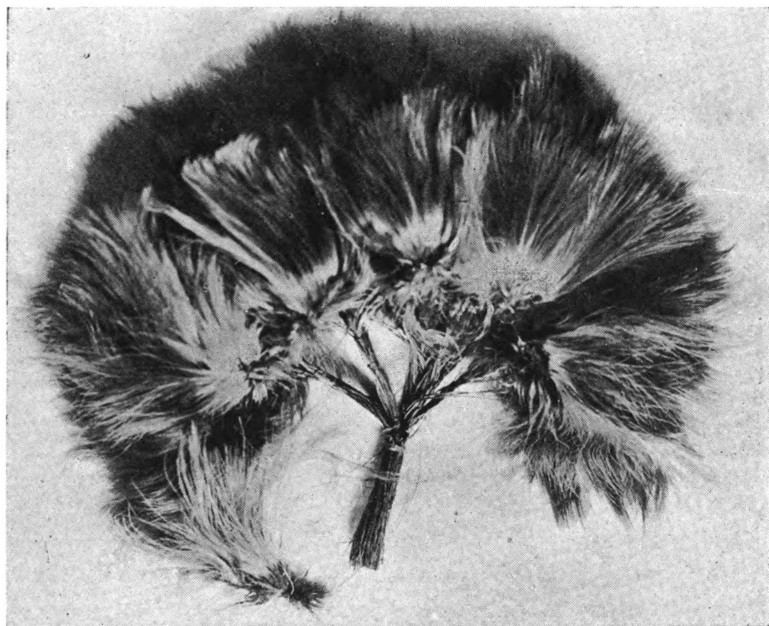

FIGURE 20.—Feathers as tied by the hunter.

which show green feathers. The *amakihi* (Chorodrepanis) and female *ou* (*Psittirostra psittacea*) furnished most of these.

A few capes are still preserved which are decorated with the iridescent dark green feathers from the back and tail of the *iwa* or man-o'-war bird (*Fregata aquila*). Others display the satiny white of the tropic bird or koae (Phaëthon). Even the domestic fowl yielded white feathers for capes to be worn by chiefs of low rank.

To secure the birds which were more abundant in the mountain forest certain men trained themselves especially as bird catchers. Since the birds were too small to be shot with bow and arrow and the Hawaiians

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had no guns, the hunters used other means. By placing on the favorite food trees and resting places sticks smeared with gum made from the juice of the papala tree (Pisonia), breadfruit and other trees, birds were held fast. Another method was to place a noose of fiber about a lobelia blossom and hide under the leaves until the bird, in search of honey or insects, thrust his bill and head into the flower. A quick pull on the fiber snared the brilliant victim. Simpler still it was to conceal oneself among the foliage and hold out in the fingers a single trumpet-shaped

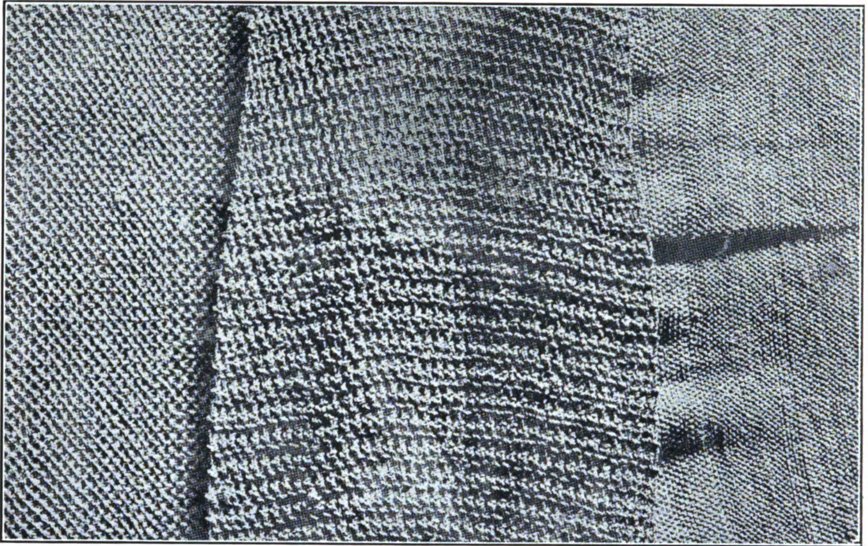

FIGURE 21.—Samples of olona netting on the backs of feather cloaks.

blossom. When the unsuspecting bird inserted his beak, he found it at once pinched tight. Tame decoy birds and nets also were used.

Although only a portion of each bird's feathers might have been removed, most victims probably died from the fright and injury. Not only the yellow tufts but also the black body feathers of the oo were used. Furthermore, the Hawaiian prized its flesh as food. Hence it is unlikely that many lived to grow new feathers. Nevertheless the birds appear not to have been much reduced in numbers by the feather hunters. It is the cutting off of the forests under the direction of white men, and the introduction of cats, rats, mongooses, and other enemies which have exterminated some species of birds and made others so rare that they are seldom seen. Cattle and goats also cause disturbance.

The bird hunters after removing the feathers, tied them with fiber in small bunches (fig. 20), and from time to time delivered them to the

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people in the villages below, no doubt receiving in exchange the food and clothing with which to visit the mountains again in search of more birds.

CLOAKS AND CAPES, AHUULA

In order to give form and strength to the cloaks, it was necessary to provide a strong network, *nae,* of fiber. This was always obtained from the olona shrub (*Touchardia latifolia*), which still grows in deep ravines and on moist mountain slopes of the wooded Hawaiian islands. In times past, so much was it in demand for making fish nets and lines, bird nets, feather cloaks and malos—in fact whenever a flexible, strong and durable fiber was desired—that the plants were cultivated.

The young Hawaiian in Case 25, cast and modelled from life, is shown scraping the moistened inner bark of the olona. *Laau kahi olona* was the name of the long, narrow board of hard wood which supports the bark; *Uhi kahi olona,* the turtle rib scraper in his hand.

When the fibers had been thus separated the spinner twisted them into thread by rolling them over his thigh with the palm of his hand. The net, *nae,* was then neatly made, usually with the aid of a netting needle, *kia aho ka upena,* (Case 8). The size of the mesh varied from one-tenth to one-fourth of an inch (fig. 21). It was customary to net strips about nine inches wide. These were then cut, fitted and fastened together with olona thread. In the cloak of Kiwalao more than thirty irregular pieces are thus joined.

To fasten the feathers to this net finer threads, often single fibers, of olona were used. This work was deftly performed by skilled men. So firmly were they tied that the feathers would break before they could be pulled out. Examination of the better cloaks shows that the feathers were fastened to the net in rows extending from side to side. Like shingles on a roof, the feathers of one row covered the bases of those in the next lower. It was a common practice to tie a red *iiwi* feather pa-u over the gray base of the oo and mamo in cloak making, thus giving to it a richer golden appearance. In the cloaks which have been much worn these red feathers show distinctly.

Although the weight of the feathers was slight, the olona netting was closely knit and gave to some of the larger cloaks a weight of more than six pounds. But the chiefs were powerful men and wore beneath these garments nothing more than a malo. In the stress of battle they are said even to have gone without the malo.

The illustrations and specimens on exhibition show clearly the shape of the cloaks and capes. The Hawaiian name for both is *ahuula.* In size they vary from the short tippets worn merely on the shoulders to the long cloaks which reached nearly to the ground. One of the smallest

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known measures nine and two-tenths inches in length behind, seven and five-tenth inches in the front where the two edges meet, and forty-one inches around the lower edge. The large Joy cloak (fig. 22) in the Bishop Museum is sixty-six inches long behind and one hundred and fifty-six inches along the lower edge. The curvature of the top was sufficient to allow the *ahuula* to be tied about the neck. Square-braided cords of olona were attached to the collar for this purpose. It is said that the cloaks were sometimes worn by passing these cords under one arm so as to leave the arm free for handling weapons. Some were

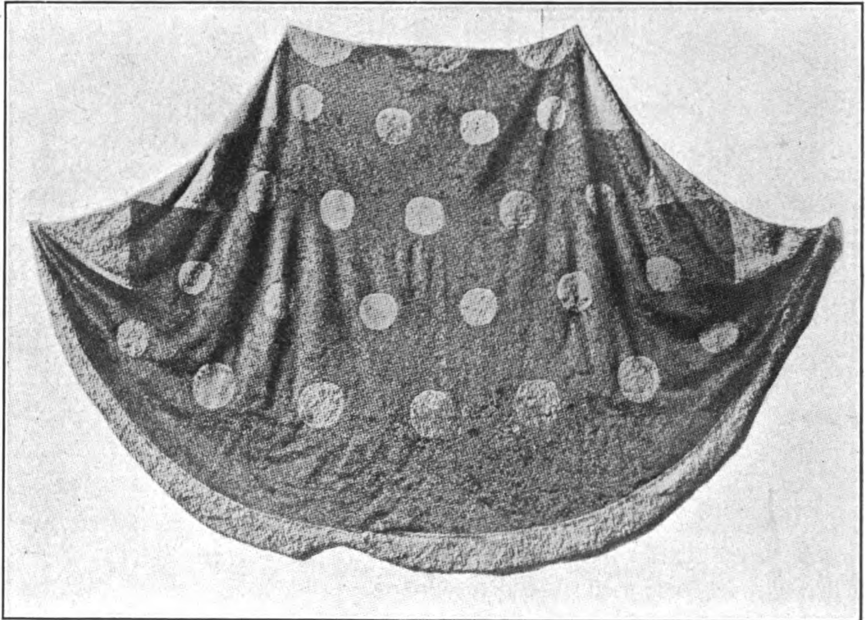

FIGURE 22.—Large cloak of red *iiwi* and yellow oo feathers.

provided with loops of olona along the front edges for fastening them together.

Simple but very striking are the designs upon many of the *ahuula* which have been preserved. Most common are triangles and crescents of red on a field of yellow, or the reverse combination. Some of the triangles are plain and others spherical. While considerable variation in the form of the crescents may be seen (fig. 23), it is noticeable that none resemble the Turkish crescent. Frequently the half crescent appears. Another rather common design element is the rhomb or diamond. Occasionally discs, circles and V's were used, and in rare instances rectangular patches resembling those of the Maori feather cloaks. On several capes median triangles or crescents of black oo feathers make a striking contrast with their yellow and red settings. At the margin of the collar and

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along the front edges it was customary to add small alternating squares or triangles of black, yellow and red. One of the few known capes decorated with green feathers shows them as crescents on a field of yellow; another has a red V on a field of green *ou*.

FIGURE 23.—Red and yellow capes in Windsor Castle.

While none of the pattern pieces have been preserved, it is said that the design was drawn on a piece of white tapa, using cords of olona or coconut fiber as radii in describing the arcs of curvature. It appears certain that the entire design was determined before the feather work was begun.

On first thought to one who is acquainted with the varied and delicate designs which appear on the tapas it may seem strange that the Hawaiians confined themselves to such plain elements in decorating their *ahuula*. But

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the use determined the type of design; the bold contrast of comparatively large areas of color created a splendor suited either to war-like or ceremonial display. It must be remembered, too, that the plainness of the figures was softened by folding as the cloaks hung from the shoulders.

To the Hawaiians no doubt the royal *ahuula* of Kamehameha the Great was no less gorgeous in lacking all design elements. Covered entirely with precious mamo feathers the rich yellow of this large cloak could hardly be surpassed.

The cloaks and capes were worn over the shoulders, secured by cords of olona continued from a collar of the same material. Since they were usually fastened in front it frequently followed that the half crescent or

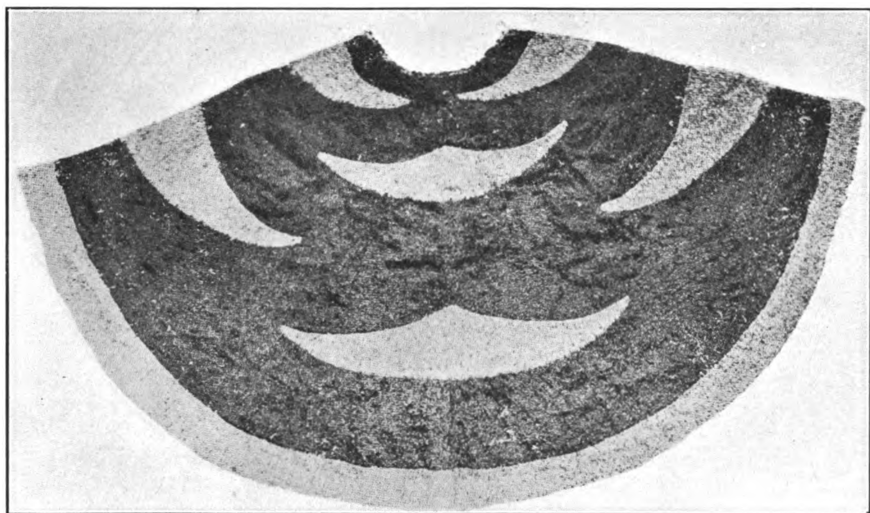

FIGURE 24.—*Iiwi* and oo feather cloak.

triangles meeting at the front edges gave the same appearance as the whole figure designed upon the back (fig. 24).

If one chief killed another it was his privilege to take the fallen hero's cape for his own. In this way Kamehameha the Great came into possession of the great cloak of Kiwalao, Prince of Western Hawaii.

In making presents to the leaders of exploring expeditions and to favored officers of ships which touched at Hawaii late in the eighteenth and early in the nineteenth centuries the chiefs naturally regarded their feather cloaks as especially suitable. No doubt the recipients of the gifts shared these sentiments. At any rate many cloaks and capes were taken from the islands before 1850. Many of these have been preserved in the museums of Europe, America, and Australia to which they have been given or loaned by the owners. Many of them, before their beauty was

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sufficiently appreciated, suffered from the ravages of insects and from the fading effects of light.

Only men of high rank were allowed to wear the *ahuula,* or cloaks. However, a robe made of the same material was especially prepared for Princess Nahienaena, sister of Kauikeaouli, Kamehameha III. This was a skirt (pa-u) measuring over twenty feet in length and two and a half feet in width. After the death of the Princess in 1856 it was cut across

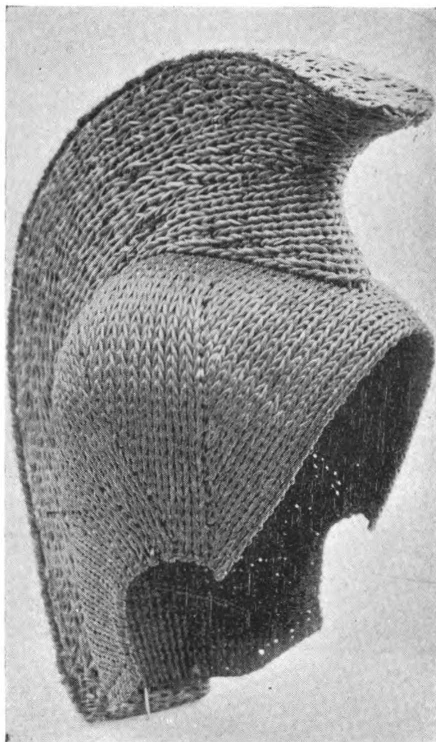

FIGURE 25.—Ieie root framework of a *mahiole,* or feather helmet.

the middle and sewed together lengthwise in this form was used as a pall over royal caskets. The olona network is entirely covered with yellow oo feathers except for a narrow border at each end, which bears small triangles alternately of black and red.

About one hundred and twenty feather cloaks and capes are known to be preserved in various museums and private collections.

HAWAIIAN HELMETS

It has been explained that the *ahuula* were worn rather as royal insignia than as protective clothing. This is true also of another article

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worn by the chiefs—the *mahiole,* or helmet. But in a measure this helmet was protective when worn in battle, for its ground work (fig. 25) was strongly woven of the aerial rootlets of the ieie vine (*Freycinetia arborea*) and would break the force of a considerable blow.

FIGURE 26.—Hawaiian warrior wearing feather cloak and helmet.

Over the basket-like body of some helmets, a network (*nae*) of olona fiber was stretched. Either to this network or directly to the ieie, the decorative covering of feathers was fastened in the same manner as on the cloaks. (The method was occasionally varied by attaching rods of feathers.) The splendid helmet was then a fitting headpiece to accompany the cloak.

In shape, the helmet consisted of a hood which closely fitted the head from forehead to neck, notches for the ears being left in the sides (fig. 26). On the top it was decorated with a crest of one form or

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another. Observers frequently remark that the Hawaiians must have patterned the helmet upon the Greek or Spanish model, but neither Spaniards nor other Europeans wore helmets when intercourse would have been possible.

Far more likely is it that, if influenced by any other race, it was from the western Pacific islands that the model came. In New Guinea (fig. 27) and New Ireland caps are found which resemble the Hawaiian *mahiole* more closely than did the Greek. But it is unnecessary to go outside of

FIGURE 27.—Feather helmet from New Guinea.

Hawaii to find where the old chiefs found their model. It was customary for the chiefs to cut their hair closely at the sides and to leave on the top of the scalp a mane-like ridge of stiff, erect hair. This ridge was called *mahiole* and was originally a mark of rank. It was only natural that when the royal helmet was fashioned an artificial crest should be added; and hence it was named *mahiole*.

The striking beauty of these helmets is well shown by one of those on exhibition. It belonged to Kaumualii and is one of the finest which has been preserved. Most of the surface is covered with red *iiwi* feathers, but the top of the crest is of yellow oo, and small patches of black oo adorn the front edge. The other helmet which belongs to the Bishop Museum has a lower crest and has lost much of its beauty. The

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variety of forms preserved in other museums is well set forth in Volume I, No. 1, of the Bishop Museum Memoirs. If the isolated *mahiole* appears so striking, what must have been the splendor of the stalwart Hawaiian chief as the sun shone on his brilliant *ahuula* and *mahiole!* Either in battle or on state occasion his insignia must have been conspicuous.

Another covering sometimes applied to the helmet was human hair. One of these wig-like structures may be seen in another case.

OTHER ARTICLES OF DRESS

The chiefs of the island of Niihau, having no brilliant birds to furnish feathers for decorating their royal garments, did their best with

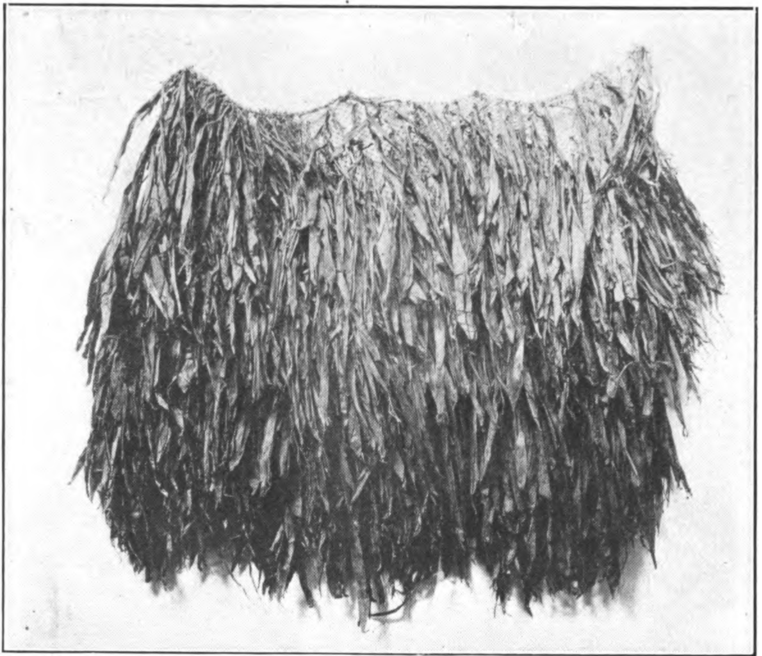

FIGURE 28.—Rain cloak of ti leaves.

the weaving of fine mat dresses or cloaks of the makaloa grass. Some of these are remarkably fine in texture and have woven into them attractive designs of reddish grass. As stated above, the ordinary man's loin cloth, or malo, was made of tapa. Sometimes, however, it was finely woven of this same grass. It is said that such mats were sometimes used as bed covers. Certain it is that smooth mats of pandanus leaf, laid in several thicknesses made up the beds of the well-to-do Hawaiians.

Another interesting garment was the rain-cloak of ti-leaves (fig. 28). Two of these are preserved in this Museum. While these cloaks must have shed much water, it is doubtful whether they were waterproof.

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Since he ordinarily wore nothing on them, the soles of the Hawaiian's feet became thickened with tough callouses, but there were places where even he hesitated to travel without some protection. The rough lava, aa, which stretches for miles in some regions quickly wears through the toughest leather. Small wonder that when the Hawaiian came to such an area he took time to make for himself a pair of *kamaa,* or sandals!

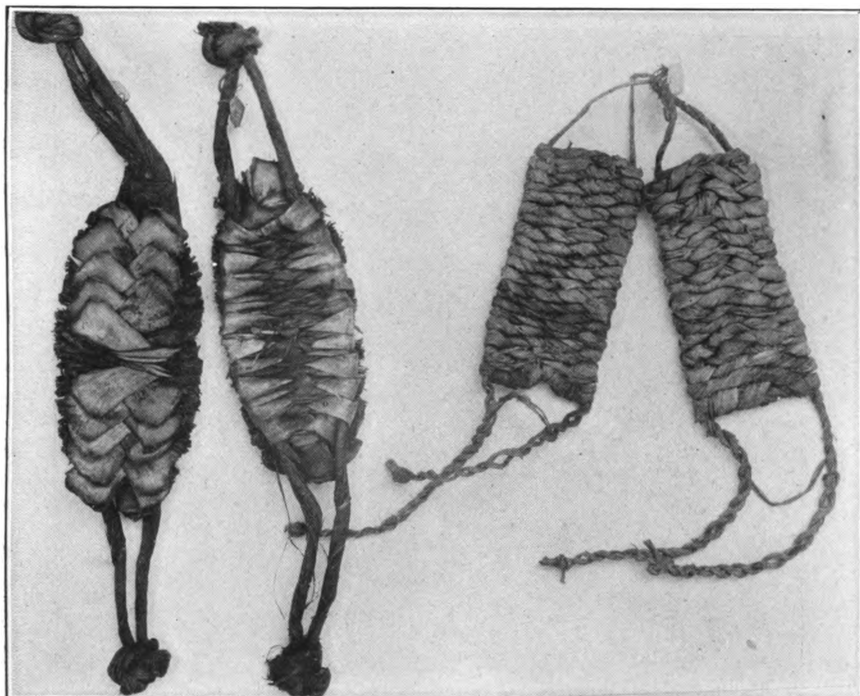

FIGURE 29.—Sandals of wauke (left) and ti leaves (right).

Any tough fiber served his purpose; leaves of the Pandanus (lauhala), ti, and banana could be twisted and woven into temporary pads.

The simplest type of sandal was hastily plaited by twisting or braiding a stout cord of any available material. A loop was formed for the toes and the ends drawn backward to make the parallel sides and heel of the sandal. Over and between these the leaves were braided or entwined, the tougher stems being left for the under surface. Loose ends of the cord served to bind the sandal to the foot. Other sandals were more complicated, having four instead of two cords about which the webbing was twined. The most comfortable and serviceable sandals (fig. 29) were made of wauke bark or banana leaves; even now Hawaiians and white men occasionally wear them when walking much on rough coral reefs.

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Even though the old Hawaiians had the pig it is not believed that they used pigskin for sandals.

EARLY CLOTHING IN OTHER POLYNESIAN ISLANDS

It is natural that the Maori of New Zealand, at the extreme southwest corner of Polynesia, should have prepared serviceable clothing, for the

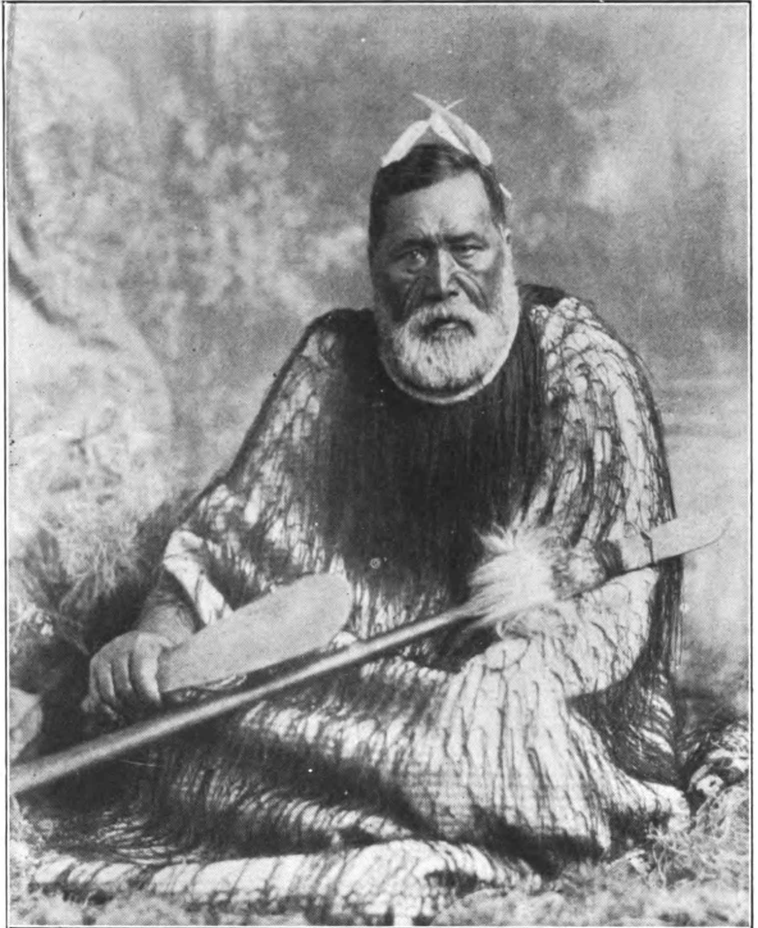

FIGURE 30.—Maori wearing woven flax cloak.

lower temperature and higher winds combined to make a climate much more severe than that which other natives of the Pacific were called upon to endure. The scanty records left by early European visitors to New Zealand indicate that tapa cloth was but little used as clothing by the Maori. Though it is a warm material, its flimsiness and poor wearing qualities confined it to ornaments and the tapa girdles of the chiefs. Even

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this use passed long ago. Another reason was, probably, that the paper mulberry would not thrive in that climate.

But the so-called native flax (*Phormium tenax*) yielded to the Maori a strong, flexible fiber admirably suited to weaving into durable fabric. His warmest cloaks were made of this material reinforced with feathers. While inferior to the best feather cloaks of the Hawaiians, these garments exhibit a high order of skill in the art of weaving, and on some of them

FIGURE 31.—Maori flax cloak with border of *taniko* work.

the arrangement of feathers is attractive. New Zealand had its own peculiar birds. The queer flightless apteryx, or kiwi, furnished coarse, brown feathers. Some cloaks were covered entirely with these. Others, preserved in the Museum, have alternate patches of feathers from the kiwi, red ones from the kaka parrot, dark green from a pigeon and white probably from a pigeon also.

The Maori made their most ornamental cloaks, however, of flax alone (fig. 30). Fibers which had been dyed black and brown, together with those which had been bleached, were skillfully woven by hand. They

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did not use a loom as did the natives of Melanesia and Micronesia; the growing fabric was supported only by two sticks set into the ground. Naturally a decorative people, the New Zealanders carried out in the weaving of this material, called *taniko,* a variety of clear-cut and beautiful designs (fig. 31). Some of these may be seen in the cloaks on exhibi-

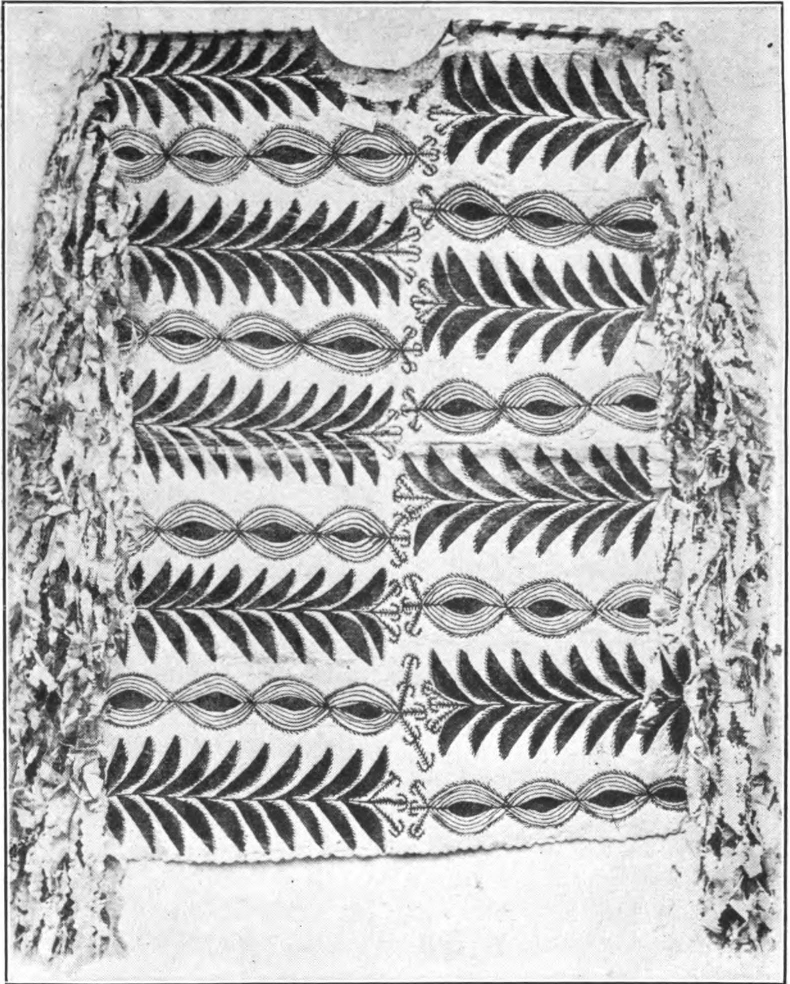

FIGURE 32.—Tahitian garment, *tiputa,* of tapa.

tion. The cloth was very strong and warm, although somewhat rough to the touch. All Maori cloaks were rectangular, contrasting with the bias cloaks of the Hawaiians.

The flax cape of a woman was called a *pake, koka,* or *piupiu;* her cloak, a *korowai.* To the choice cloak worn by chiefs the name *Kaitaka* was applied. Specimens of all these add to the attractiveness of the cases

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devoted to Maori work. The fiber could be prepared in several degrees of fineness ranging all the way from coarse strips half an inch in width to fluffy fibers. In some garments several strands were neatly bound together with slender fibers and stained black at frequent intervals. The tops of some capes and cloaks were braided or woven of large strands of soft fiber. From this fabric, strips and threads hung downward for two feet or more. In other capes a flaxen mat formed the groundwork and was covered with longer or shorter bunches of fiber laid on like roof thatch or shingles. Dog skin applied in strips also lent a high value.

Clothing woven in a manner similar to that of the Maori has been found in other Polynesian islands—in Rarotonga and Rapa (Austral Islands). It is believed also that the Tahitians once prepared such fabric, using as fiber a kind of grass. But nowhere did the art attain such high quality as in New Zealand. The natives of Rapa also used tapa and made skirts of ti leaves. Like the Hawaiians of Niihau, the Tuamotuans wove loin cloths of fine matting.

Throughout Polynesia, except New Zealand, Rapa, and the Tuamotu group, tapa was the stand-by for clothing. That of the Tahitians was of very high quality and of great variety as described in Bishop Museum Memoir III, Ka Hana Kapa. The characteristic outer garment of the men was the *tiputa* (fig. 32) which resembled the poncho worn by the natives of Peru and Chile in South America. This was prepared by cutting a hole in the center of an oblong piece of tapa, through which the head was thrust, the ends extending downward to the knees in front and behind. Over this another wide band, was wound about the body. Streamers of tapa were sometimes added as ornaments. The men also wore the tapa *maro,* or loin cloth.

Both sexes wore the *pareu,* a long piece of tapa wound several times around the waist like the pa-u of the Hawaiian women. The Tahitian women had their own outer garment in the form of a vest or loose scarf thrown over the shoulders. It was called an *ahupu* or *ahutiapono.*

Another generally worn article of clothing was the *ahufara,* shaped square like a shawl or elongated like a scarf. Some were of large size and all were brilliantly ornamented with red or yellow dyes. Often the most delicate fern leaves and hibiscus flowers were selected as patterns. Dipped in the dye and pressed upon the tapa these made bright and charming designs. Clad in *tiputa* and *ahufara* the stalwart Tahitian chieftain presented a splendid and imposing spectacle. On certain occasions this effect was heightened by a gorget of bird feathers and shark teeth.

In the Marquesas Islands the style of dress was less varied than in Tahiti; the *tiputa* seems to have been entirely lacking. The climate was so mild that clothing was unnecessary as a protection from cold. The

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primitive Marquesan dress was a scant costume of tapa, the men sometimes dispensing with even this.

The ordinary male garment was the loin cloth (*hami*), a strip of tapa about two feet wide and eight feet long passed between the legs and knotted about the waist. Some were simply ornamented by attaching

FIGURE 33.—Samoan work dress of ti leaves.

in the rear a tail which was knotted at intervals and reached to the ground. Old men wore a loin cloth which had three strips hanging from the front. Similar strips were sometimes attached at the sides. When not at work, the man also wore a cloak made by knotting together the upper corners of a large rectangular piece of tapa. The knot, large and considered ornamental, was worn on the breast. The cloak therefore covered only the back, hanging as far as the knees.

Unlike most of the other women in the Pacific, those in the Marquesas

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often wore a loin cloth like that of the men. But they also followed the fashion of their cousins in donning skirt or kilt, a piece of tapa wound several times around the waist and reaching to the knees or lower. The

FIGURE 34.—Samoan princesses wearing skirts of fine matting.

woman's upper garment was a cloak similar to that worn by the man, but often with the knot over the shoulder instead of upon the breast. When a woman desired really to "dress up" she would wind about her waist a strip of tapa as much as forty yards in length, creating an effect not unlike

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that of the old-fashioned hoop skirt once worn by white women. A similar custom was followed in Tahiti.

Curiously enough the Marquesans apparently did not decorate their tapa. The examples preserved are either plain white made from bark of the ute tree (Broussonetia), gray, from breadfruit bark, or reddish tapa, from the bark of the fig tree (Ficus). No doubt they considered their bodies sufficiently decorated by their wonderfully tattooed designs. Certain it is that patterns were plentiful enough; clubs, bowls, canoes and other wooden objects the Marquesans carved with remarkable skill.

FIGURE 35.—Men's woven loin cloths, *tol,* and woman's skirt (right) of hibiscus fiber, from Gilbert Islands.

Such with modifications in the various groups was the clothing of the Polynesians. At Rurutu in the Austral Islands some of the tapa was given an excellent glazing, similar to that on our modern oil cloth. Even the distant people of Rapanui or Easter Island, at the southeastern boundary of Polynesia, planted their paper mulberry in the scanty soil among the higher rocks. Although little is known of their culture, it is probable that their clothing resembled that in other islands.

In primitive times, according to Turner, the chief article worn by the Samoan was a girdle made of ti-leaves (Cordyline), shorter for the men than for women (fig. 33). The men were privileged to don girdles of tapa, but only the titled women might do so. The finest clothing consisted of the beautifully plaited mats which women made from pandanus leaves

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(fig. 34). It is said that the soft mats made of hibiscus fiber and ordinarily used as bed mats were sometimes worn as clothing by Samoan women.

When we come to those islands which lie on the western boundary of Polynesia we find tapa clothing uncommon and scanty mat "dresses" becoming more general.

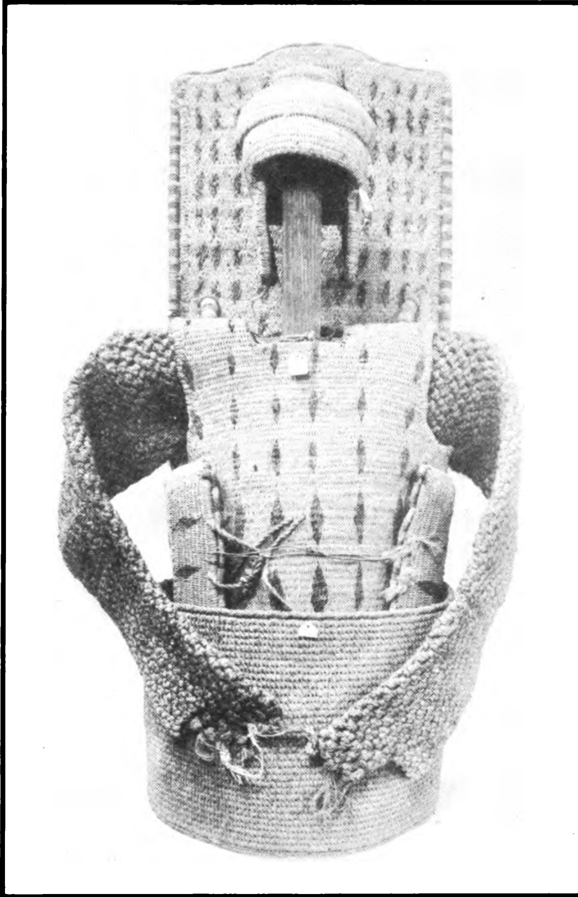

FIGURE 36.—Armor of coconut fiber. (Gilbert Islands)

Concerning the early customs of the natives of some islands very little is known. Wilkes found the men of the Tokelau or Union group wearing a malo of matting and it is probable that a similar garment satisfied the women. These islands, lying not far north of Samoa, undoubtedly received visits from the inhabitants of Samoa who may have influenced the dress fashions.

Three types of clothing, all of pandanus leaf, were worn in the Ellice

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Islands, the next archipelago to the west. The ordinary malo of the men was plainly woven; the second type consisted of a girdle with short fringe; the third could be worn only by people of high rank, and was in the nature of a wrapper of fine matting wound about the body and legs. Occasionally a narrow folded mat served as a scarf over one shoulder.

In the Gilbert islands both extremes in clothing prevailed in ancient times. Most of the men wore no clothing except a peculiar conical cap plaited of broad strips of pandanus leaf. The unmarried women wore nothing; after marriage their attire consisted of a girdle with an eight-inch fringe of scanty fibers of coconut leaf, called a *ridi*. Rarely, a woman donned a mat skirt of hibiscus fiber. When she did so she was very neatly dressed, for, as seen by several examples in the Museum, these mats were finely and beautifully woven (fig. 35, right). Black and brown fibers were used to make pleasing stripes and other designs.

Although the Gilbert Islanders wore scanty clothing, it was they who developed armor to its highest perfection in the Pacific. Elaborate but cumbersome suits for almost the entire body were woven of sennit (coconut fiber). Several of these are on exhibition (fig. 36). Some of them approach an inch in thickness, and are nearly as stiff as boards. They were admirably suited to protect the warrior from thrusts of the characteristic shark-tooth weapons. The body was covered by a heavy, rectangular piece with an opening through which the head was thrust; the ends hung down in front and behind to the hips. From the back of the neck an erect collar was sometimes added for protection to the head. The lower part of the suit, when not merely a fiber apron, took the form of a pair of trousers. One of these shown reaches to the ankles. They were held up by straps extending over the shoulders. The body might further be shielded by a wide belt of the same material or of the tough beaded skin of a sting-ray. Sleeves of the coconut fabric protected the arms. But the unique part of the armor often was the head covering made by drying the tough spiny skin of the porcupine fish in the form of a cap. The pectoral fins covered the ears and the tail extended upward. Other warriors wore skull caps thickly woven like the rest of their armor.

CLOTHING OF THE MICRONESIANS

Passing from northwestern Polynesia over into Micronesia it appears that in the Marshall Islands, just north of the Gilberts, some tapa was made, but there its use ended. In the Caroline, Pelew and Mariana groups leaves and fiber took its place.

Marshall Islanders, both men and women, wore girdles or short skirts of finely plaited pandanus leaf strips. The women showed a high degree of skill and artistic sense in the manufacture of these mats. Several in the Museum's collection display attractive stripes and figures of black

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and brown, woven into their wide borders. But like their neighbors, these people were commonly satisfied with skirts of fiber (fig. 37). One of those on exhibition is decorated with small pieces of colored tapa. Such skirts seldom reached below the middle of the thighs, while above the waist the Marshall natives went unclothed.

Another sort of fabric, not encountered in Polynesia, comes to our attention when we study the clothing of the Caroline Islanders. This is the true loom-woven fabric of which the Museum has several examples. Here again it was the women who performed the work. Two of their

FIGURE 37.—Woman's skirt of fiber. (Gilbert Islands)

primitive but effective looms appear in the cases (fig. 38). They consist of frames and rods of wood and bamboo for controlling the various sets of fibers. Some of the threads were carried back and forth on wooden shuttles. The woman's choicest dress was a skirt or girdle of this matting about four feet long and twenty inches wide, finely and beautifully woven of banana or hibiscus fiber with a delicate fringe at each end. In Ponape this extended even below the knees. That of the men, called *tol,* was much narrower but no less attractive (fig. 35, left). These fabrics compare very well with the best linen of the white man, not only in texture but in the form and color of their designs. Colored strands woven through the natural fibers enabled the skilful craftswoman to indulge her fancy in a variety of directions. Most pieces were striped longitudinally so that when wrapped about the hips the bands followed the same course. But

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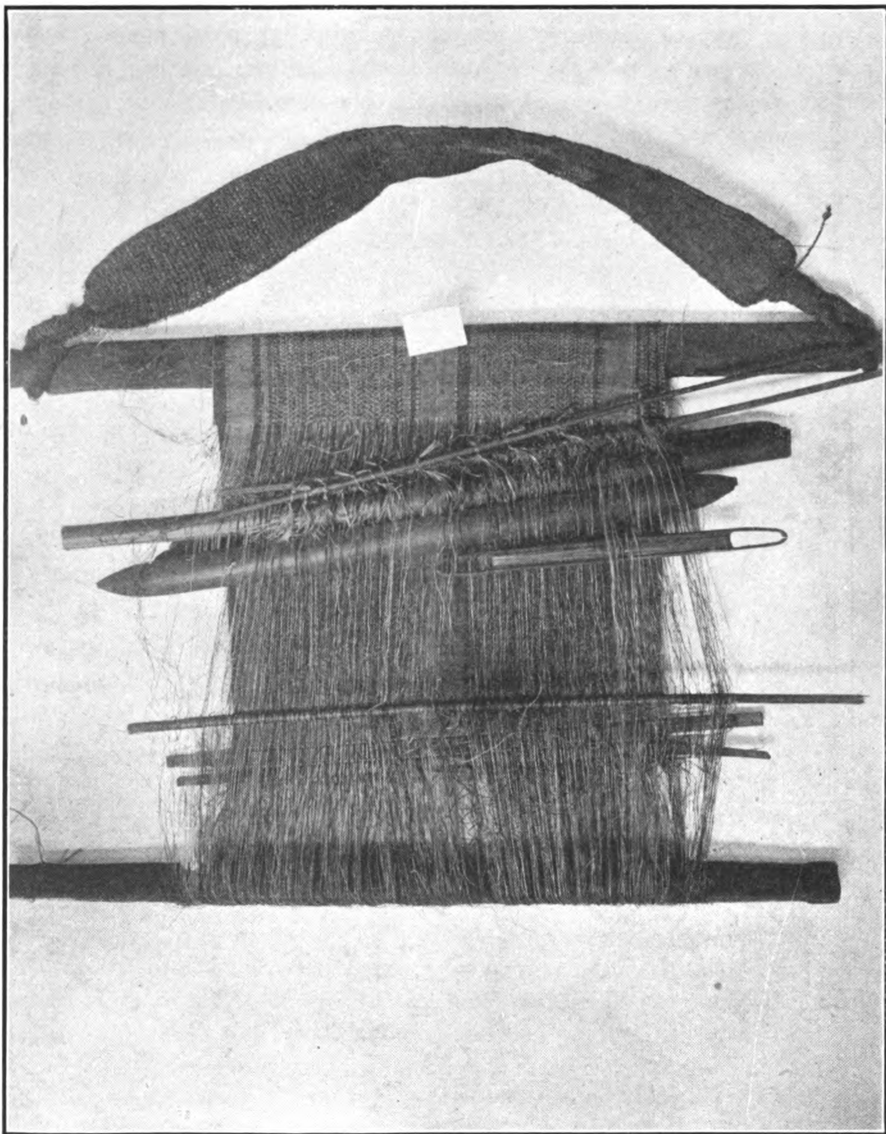

FIGURE 38—Loom from Caroline Islands.

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in others they were woven crosswise of the piece and appeared vertically on the body. Who knows but that these women, like their white sisters, distinguished between the designs becoming to slender and to portly individuals!

Of the dyes used in these woven dresses black was obtained, as in Polynesia, by burning candle-nuts; brown, from the juice of pounded mangrove roots; yellow, from turmeric roots; and a rich blue, from the sap of young banana suckers.

In some of the less progressive islands in the Caroline group the dress was considerably more primitive and less ornamental. The women of Yap, for instance, wore large, thick skirts or kilts of coconut leaves which hung in a fringe from the narrow braided belt. The men wore only a loin cloth. Similar in form, but more ornamental, were the kilts worn on festive occasions by the men of Ponape. Split filaments of pandanus or young coconut leaves furnished the materials. But these people, like those of Kusaie and Truk, showed the true Caroline skill in weaving fine girdles. They used beside banana and hibiscus the fiber from one of the banyan trees. The women of Truk delighted in ornamenting the tops of their skirts with belts strung with hundreds of tiny shells, while the men adopted girdles of coconut or sea-shell rings. In modern times bead-work has supplemented these.

The ancestors of the present day inhabitants of Saipan in the Marianas came from the Carolines, and their dress shows great similarity to that which we have been describing. Several woven skirts as well as fiber kilts may be seen in the cases.

CLOTHING IN MELANESIA

West of Polynesia and south of Micronesia several groups of islands are given the general name Melanesia on account of their dark-skinned inhabitants. The Melanesians seem more closely related to the people of New Guinea to the westward than to other Pacific races. Their clothing shows considerable variety. Not only was loom-woven fabric used, as in Micronesia, but a rather rough tapa was made from several kinds of bark.

The culture of the Fijians had evidently been strongly influenced by that of the Tongans. It was probably for this reason that of all Melanesians, the tapa of the Fijians was the finest and most extensively made. The ordinary dress of a man was the *masi* of white, brown or figured tapa. Its measure was from six to ten yards, sufficient to allow of its being passed between the legs and wound two or three times about the loins, leaving the front end to fall as a curtain to the knees, while the other was gathered into a bunch behind or permitted to trail on the ground. When a chief was dressed in style, several folds were taken

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higher up about his body and the ends allowed to form long trains. One of these kingly sashes is known to have measured one hundred and eighty yards in length.

Fijian men also wore a massive turban of fine white *masi* or tapa of gauzelike thinness.

Women's dresses, *liku,* were made of hibiscus or root fibers and grass. While braiding these the women held one end of the material by the great toe of the right foot. When completed the dress was a broad belt of beautiful variegated braid-work with a fringe from three to ten inches deep. It was tied on the right side with loops of fiber which on festive days were long enough to trail on the ground. Women were not allowed to wear tapa in primitive times.

Scanty as it was, the Fijians took great pride in their dress. It should be borne in mind that the character of the climate rendered clothing for protection unnecessary. Full credit, therefore, must be given for modesty in the slight clothing which they did wear. About this they were particular. Several Fijian women's girdles and a man's dress of stamped tapa appear in the exhibition cases.

Before the advent of missionaries the inhabitants of most of the Solomon Islands wore nothing. On Guadalcanar, however, the men adopted the loin cloth of tapa and the women, a fringed skirt. The dress of the Shortland section was intermediate; the men usually went naked, while the women wore a string with a few leaves about the waist. On special occasions the chiefs put on a little mantle, *boki,* suspended on the back by a string about the neck. It was decorated with strings of shell money. The chief's women and relatives were allowed to wear his *boki.* Originally the natives of the New Hebrides wore no clothing. At most, the women were content with a handwoven mat dress. Their cousins in the Santa Cruz Islands were more advanced; they employed the loom to prepare for themselves attractive girdles of fiber. Some are plain and others decorated with black and red strands. In the Museum's collection several appear, two of them on the looms partially finished.

Concerning wearing apparel in New Britain, George Brown, pioneer missionary, writes[1]:

"It is impossible to describe the clothing of the New Britain natives, because, with a few slight exceptions, men, women and children went about entirely naked. On the mainland of New Britain there were, as far as I know, no exceptions whatever to this rule, except that some leaves were used in dancing, and the same applied to Duke of York Island, with one exception, and that was in the case of the people of Mioko, where the women wore a few strips of dried banana leaf. In New Ire-

[1] Brown, George, Melanesians and Polynesians, p. 310, London, 1910.

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land men and children were all naked, but the women wore a tuft of dyed flax in front and a similar one behind. In some of the dances . . . when a few leaves were worn, they were worn at the back of the person and not in front. It would be considered very improper if a New Ireland woman appeared without the tuft of fiber, which did duty for a dress, however slight it might be."

Armlets, anklets, waistbands and necklaces of plaited fiber, shells and teeth commonly ornamented the persons of New Britain natives. They

FIGURE 39.—Girl of Southeastern New Guinea wearing skirt of fiber.

used in their ceremonies and dances a variety of masks, some of them made of human skulls. Many masks represented animal faces and forms.

The mats of New Britain were rough, plaited from coconut leaves; consequently no looms were known. As stated on page 47, a coarse kind of tapa was made by the inhabitants of Melanesia including New Britain and New Guinea.

In New Guinea the tapa loin cloth is the only article of dress common to all men, women and older children of the mountain people. That of the two sexes is practically the same. The cloth ordinarily worn was unstained, but on special occasions a "dress" dyed with red and black was

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put on. In New Guinea bark cloth is known as *po.* Abdominal belts are also commonly worn by men and women. Some of these, about three inches in width, are made of unbeaten bark. A piece of bark long enough for from one to four belts is stripped from the tree and coiled up. It is placed thus coiled in water for a few days, after which the outer bark is stripped off. The bast, or inner bark, is then dried and cut into lengths sufficient to coil at least twice about the body. Strings of fiber are added

FIGURE 40.—Chief's cloak from Jabin, New Guinea.

for attachment and dyed figures often stamped upon them. It is to be noted that, while such belts are made from bast they cannot be called tapa, for they have undergone no beating. The New Guinea people also make belts of split cane and native fiber.

After an illness both men and women wear capes of bark cloth—long strips of tapa, the corners of one end bunched together, forming an opening through which the head is thrust, while the mantle hangs down behind. Apparently this cape serves more as a symbol than as a protection.

Mourning garments are worn by the widows of chiefs—"vests" simply made and uncolored, with a hole at the top for the neck and one at each

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side for the arms, reaching only to the waist. The material is the string meshwork similar to that so much used for bags.

Dancing aprons of coarse tapa ornamented with colored designs and headdresses of feathers add to the wardrobe of these mountain people of British New Guinea.

The women of the coastal districts have adopted a more extensive dress than their inland sisters. Rather neat looking skirts of thickly fringed fibers or strips of leaves reach from waist to knees (fig. 39). Several of these appear in the Museum's collections. The chiefs wear poncho-like cloaks of tapa decorated with red and black dyes. One of these on exhibition is called a *nakwin* (fig. 40). A tapa loin cloth, or *gbola,* worn by men is also shown.

Many are the ornaments worn by the different peoples of the Pacific, some of whom, as we have seen, show a considerable degree of artistic taste. But such articles, although worn, cannot strictly be regarded as clothing. It will be wiser to devote to them another part of the Museum handbook. The same is true of mats.

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