

ETHNOLOGY OF PUKAPUKA

by

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The new functioning left edge of the fan is now plaited and the top edge finished off with the customary mat finishing technique (*ihikinga*), the projecting sinistrals being cut off flush with the top. The dextrals are pushed underneath crossing wefts and cut off close to the right edge of the fan. The free ends of the *lito* strip are tied round the handle with a double overhand knot to prevent the fan from coming off the handle when in use.

Coconut-leaf fans of characteristic Polynesian shape, base of triangle at the top, apex at the bottom, are made either with midribs to which the leaflets are attached or else with leaflets stripped from the midrib.

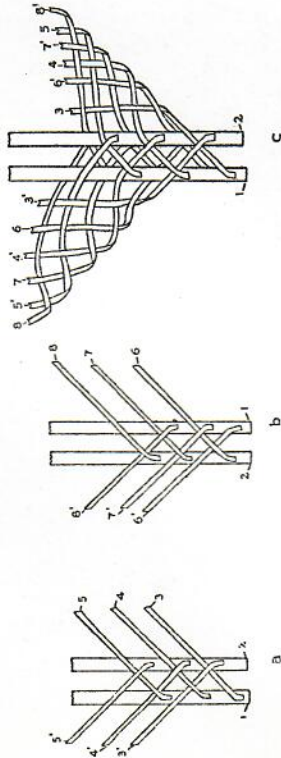


FIGURE 17.—Commencement of coconut-leaf fan (*ili yukuyuku*). *a*, midrib strips (1, 2) shown with only three upper leaflets on each to avoid confusion: leaflet 3 carried across to opposite side, opposing leaflet 3' being carried across to its opposite side on top of leaflet 3; leaflet 4 carried across, and right leaflet 4' similarly carried across, passing on top of leaflet 4; similarly with leaflets 5, 5'; each leaflet crosses alternately until all are crossed. *b*, under leaflets of midrib cross as in *a*: midribs turned over so that left midrib (1) is to right and right midrib (2) is to left; each leaflet crosses alternately from either side as in *a*; leaflet 6, which is under leaflet corresponding to 3, crosses over leaflet 6', corresponding to leaflet 3'. *c*, establishment of plaiting stroke: leaflet 3 from midrib 1 carried across and given forward half turn to engage with leaflet 6' which has come across from underneath and is itself given a forward half turn to engage with leaflet 4 from midrib 1; similarly with leaflets 7, 8' and leaflet 5; on other side, leaflet 3' engages with leaflet 6, leaflets 4', 5' with leaflets 7, 8 from opposite side; plaiting continued by carrying across all leaflets on either midrib to opposite side and plaiting in closed leaf check; when body of plaiting is large enough, top edge finishes with ordinary pandanus-mat finishing technique.

Fan C8174 (*ili yukuyuku*) is made from two pieces of midrib cut from the tip end of the coconut leaf (pl. 3, A.3). Each midrib is 13 inches long. The left midrib has 9 leaflets on one side, 8 on the other; the right midrib has 9 leaflets on one side, 7 on the other. In the finished fan, the butt ends of the midribs form the handle. Commencement and establishment of plaiting stroke are shown in figure 17. The fan is plaited in closed leaf check. At the top, each closed leaf is split into two and the finishing edge is plaited with five rows of check. Commencing with the top left corner, the edge is finished with the common mat technique (*ihikinga*), the projecting sinistrals cut off; the free ends of the dextrals are cut off on the line where each weft was previously split into two. The fan is neat and compact, the *ihikinga* finishing technique providing a strong, slightly curved finishing edge. This fan is 16½ inches long, 15½ inches wide across the top.

The same technique is employed with individual leaflets. The required number of leaflets, depending on the size of the fan, are stripped from the tip of the midrib and

divided into two bundles with the tips of the leaflets lying in the same direction. The butt ends of the two bundles are laid together and roughly fastened with a leaflet. Commencing about 4 inches from the proximal ends of the butt leaf bundles, leaflet 1 from the left bundle is passed to the right, leaflet 1 from the right bundle is passed to the left over leaflet 1 of the left bundle. This process is continued until all the leaflets have been crossed over. The leaflets are then plaited in closed leaf check and the finishing edge made with the *ihikinga* technique. The two bundles containing the butt ends of the leaves are bound together with transverse turns of sennit, the completed lashing having buried commencement and finishing ends (pl. 3, A.2). The technique is the same as that of the midrib-handle fan shown in figure 17 save that the handle is composed of the butt ends of the leaflets bound together.

Fan C8189 (*ili yae yae*) is a smaller fan made by the same technique. It commences with check plaiting, goes on to twilled twos, twilled threes, and finishes with rows of check. The fan is 13½ inches long, 6 inches wide at the top, which is straight instead of curved as with the other two fans. The handle is bound with nine turns of common string.

CORDAGE

Various materials are used as cords. Readily obtainable materials that serve a need of the moment are coconut leaflets and strips of fiber from the coconut midrib or from dried *pulaka* stalks. These are used without preparation and discarded when no longer necessary. More permanent cordage is made from the husks of the coconut and from bark of the *wao* tree. *Wao*^s fiber is used for fishlines where quality is more important than quantity; coconut fiber is used for every variety of cord where strength and quantity are desired. Human hair is occasionally used to make short cords by which valuable ornaments (*yana*) are hung from the neck.

Wao fiber is prepared for the finer fishlines as follows:

Bark is peeled (*wawole*) by a man from a small branch or sapling (*yui*) of the *wao* tree and rolled up into a bundle (*pokas*). A woman proceeds with the task. She puts the bark in a wooden bowl and covers it with fresh water. Then she places a strip of bark on a flat surface, a special board or the blade of a canoe paddle, with the inner surface of the bark lying downward on the board, and scrapes (*vaiu*) away the green outer bark with a shell until only the white inner bark is left. When all the strips of bark have been scraped, they are braided together at the ends by the man or woman to make a bundle of strips termed *fiu wao*. This *fiu* is hung in the sun for about two weeks to bleach. At the end of this time, each strip is rubbed with a half coconut shell until it is soft and pliable. Each strip is then shredded (*waiyayai*) into narrow widths (*yako*) which are ready to be made into fishline.

Appliances used in *wao* bark preparation are:

Scraping board C8047 (*papa vaiu wao*) is a board of *puapua* wood, 26 inches long, 4 inches wide, and 1½ inches thick. The scraping surface has a slight transverse convexity.

Shell scraper C8046 (*koti*) is a highly polished and smoothed black-lipped pearl shell; greatest length 3¾ inches, greatest width 3¼ inches, thickness at the hinge ¾ inch, thickness at the lip 1/16 inch.

Hank of fiber C8132 (*fiu wao*) is a semi-bleached hank of prepared *wao* bark from which line may be made. Thirty-one strips of bark ranging in length from 3 feet to 6

^s The tree is *wao*; fiber prepared from its bark, *wao*.

feet 6 inches are braided together at one end. Braiding commences with three strips of bark. After braiding for $2\frac{1}{2}$ inches, one strip (ply) is dropped and another added. After two more twists of the braiding, a second strip is dropped and another added to take its place. The braiding continues thus, dropping one and adding another strip until 28 plies are dropped. The braiding of the final three plies is stopped by tying the two outer plies together with the first part of a reef knot.

Sennit fiber (*laukarava*) is prepared by macerating either the green or mature husk of the coconut in salt water. The coconut named *niu pulu vemu* is preferred for fiber, but any nut may be used if this is not available.

The husk is either buried in the wet sand on the beach or else placed in a basket which is submerged in shallow water. The husk is left until the interfibrous material is decayed (*papala*). One to two months is a usual time, but burial up to six months or more does not harm the fibers. On removal from the salt water, the husk is pounded (*hiki*) on the beach to separate the decayed matter from the fibers. Any wood or stone serves as an anvil and a piece of wood as a mallet. After being thoroughly beaten, the fiber is washed in the sea and dried in the sun.

Before cordage is made, the bundle of fibers (*laukarava*) is sorted (*unu*) and the short, fluffy, thin fibers (*winiga*) are thrown away. The remaining fibers (*pulu karava*) are separated into two types: long single fibers are picked out to be made into cordage termed *unu* used for especially strong fishlines and canoe lashings; the remaining fibers are divided into hanks (*amo*) of 10 to 15 fibers each, twisted at one end to hold the fibers together.

TWISTING

Twisted cords are made of *wao* and coconut fibers. A fine two-ply twist of *wao* termed *ataala* is made for the lashings of composite pearl-shell fish-hooks. The operation is known as *wilo*:

The worker takes two single threads of *wao* and rolls them separately on the sole of the foot (*papa vae*) with the palm of the hand (*papa lima*). At the finish of each forward and backward rub a slight twist is given to the thread by a sideways motion of the hand. Two twisted threads are laid together and twisted into a single cord by a forward and backward movement of the hand. The plies are termed *taavenu*. Strands are added to the shortening ply by direct overlapping.

Thicker cords varying from 1 to 3 mm in diameter are made from *wao* fiber in two- or three-ply twist, and used as snoods, secondary snoods, and bonito lines.

Two-ply sennit (*uka yae*) or three-ply sennit (*uka tautolu*) is used exclusively in lashing together rafters and purlins in the house framework and for lashing roof sheets to the rafters. Separate strands (*amo*) are twisted separately on the sole of the foot and then twisted together. Strands are added by direct overlapping on the shortening ply. Two-ply *uka* is about 3 mm thick, three-ply about 5 mm.

BRAIDING

The material used for braided cords is invariably sennit fiber. This braiding is either three-ply for fishlines or lashing lines, or five-ply for

sennit malos. Four-ply braid is not used for cordage. Braided sennit is termed *karava*. Sennit made from the selected, long pieces of fiber is *karava unu*; from unselected strands (*amo*), *karava wili*. Ordinary three-ply braiding which produces a fairly long, loose braid is termed *karava wili yae yae* and is used for ordinary anchor line (*karavatanu*) or fishline. Careful three-ply braiding, in which each twist of the plies is pulled very tight to form a close, round braid, is termed *karava wili tuki*; when made of the long strands (*unu*), it produces especially strong braid used for strong fishlines and canoe lashings.

Braiding is always done toward the body. The commencement end of the plies is knotted and tied to a stake set in the ground before the worker or else coiled round the toe (*iko ki te mangamanga vae*). In three-ply braid, the outside plies are brought over the middle ply in succession, each ply taking in turn the middle position. A shortening or thinning ply is reinforced by direct overlapping on the specific ply affected or else by the addition of a new strand from below, the short end of which is folded back over the middle ply (fig. 18, b). When it is temporarily abandoned, the braiding is stopped by twisting plies together or by tying the two outer plies together with an overhand knot. Braiding is permanently finished by gradually reducing the size of the strands until they are very thin and then rolling the three plies together on the sole of the foot to produce about 3 inches of three-ply twist. Shreds of fiber (*vuivuvulu*) left on the cord after braiding is finished are carefully cut off with a knife (*taku*) to give a smooth, neat appearance to the cord.

Finished cord is measured by stretching it from tip to tip of outstretched arms across the chest. One such measurement is equal to a fathom (*igawa*). When the worker has made a sufficient number of *igawa* for his purposes, he winds the cord into a coil of fathom loops and stores it until needed. Lengths of cord for canoe lashings are made fairly short because the cord must be used uncoiled when lashing through holes in the canoe hull. Working coils for house lashings are made by winding the sennit over the back and palm of the hand. The sennit is taken from the hand, the free end is wound several times round the middle of the coil and fastened with half hitches. The commencement end is pulled from the center of the coil and the lashing started with this end. As the lashing proceeds the coil unwinds itself, but the coiling prevents the sennit from becoming tangled and hard to use.

Examples of three-ply braided cords for various purposes are:

Anchor line C8198 (*karava tau*): three-ply braid, 6 mm thick, 11 mm wide. The plies thin down to 4×2 mm at the finishing end and are twisted into two plies (two plies being twisted as a single element) for $2\frac{1}{2}$ inches and knotted.

Other lengths of braid used as deep-sea fishlines and anchor lines (C8197, C8199, C8198), have thicknesses of 4×7 , 4×8 , and 5×10 mm. They are all loosely braided pieces of sennit (*karava wili yae yae*).

Canoe lashing sennit C8103 (*karava unu fi vakae*) is a flat three-ply braid, in which each ply is composed of 13 long coconut fibers. Short plies are lengthened by direct overlapping, the slight backward projection of the short end of the added strand being trimmed off later. The finished braid is 3 mm thick, 6 mm wide; the flatness and strength of this braid make it ideal for lashing together hull parts.

Five-ply (*wili lima*) braiding is reserved exclusively for the making of sennit malos (*karava malo*). The braiding technique is similar to three-ply braiding save that the outer ply from either side crosses two plies instead

of one ply in passing over to the middle position. The under surface of the five-ply braid is termed *aloalo* and is marked by a pronounced transverse concavity. Shreds of coconut fiber left by the braiding are not cut off but are left, presumably to ease the rub of the malo against the skin. The outer surface (*tua*) of the malo is flat and smooth because the shreds are cut off. Braiding is very tight and strong. Informants mentioned that the utmost a good worker could braid each day was about 12 inches, and from this his hands became roughened and torn by tugging at the braiding to make it tight.

A sennit malo observed in the field was of five-ply braid, 33 feet long, $\frac{1}{2}$ inch wide, and $\frac{1}{4}$ inch thick. The commencement end (*keamatanga*) consisted of a two-ply twisted loop, $1\frac{1}{4}$ inches long. This loop was hitched over a bracing stick in braiding and the four ends braided as a four-ply braid for 1 inch. A fifth ply was then added and the rest of the malo braided five-ply. The finishing end (*wakaotinga*) was fastened with an overhand knot, and a length of two-ply twisted sennit, 4 feet long, $1\frac{1}{16}$ inch in diameter, was knotted to this end. This length of twisted sennit (*karava li malo*) is used to secure the malo to the waist when worn or to fasten it in a flat disc when stored.

Malo C8146 is made of two shorter lengths of five-ply sennit joined together by knotting. One section of the sennit is $\frac{1}{2}$ inch wide, $3\frac{1}{16}$ inch thick; the other section $\frac{3}{4}$ inch wide, $\frac{1}{2}$ inch thick. A malo is wound for storage in the shape of a disc (*iko*, pl.3.C). The malo is laid on the ground, the commencement end folded in and the rest of the sennit wound round this core to produce a flat disc 11 inches in diameter. The turns are held together by the *karava li malo* cord which passes from the circumference through the center hole of the disc and back to the circumference again where it is looped round the first turn. The free end is passed round the circumference for 3 inches, then passed down to the center hole, and back to the circumference again, these turns being repeated at every third inch round the circumference.

The ordinary, quickly made, climbing bandage (*koanga*) is made from strips of coconut midrib (*kalava*), chewed to soften the fibers, and then looped by fastening the ends with a reef knot. The coconut climbing bandage (C8057), *koanga kake niu* (climbing bandage to climb coconut tree), is 30 inches long, $5\frac{1}{16}$ inch thick. More permanent and stronger bandages, braided from pandanus roots, are used by a bird catcher who wishes to be sure that a bandage will not break and throw him to the ground during the several hours he remains in a coconut tree. Young aerial roots of the *yulu* species of pandanus are cut as long as possible and baked in the oven or heated over a fire. The roots are pounded with a piece of wood until the fibers are soft and flexible. Strands of this material are made into a three-ply braid, the ends knotted to form a loop. Climbing bandage C8159, (*koanga yulu*) is three-ply braid, 45 inches long, $\frac{5}{8}$ inch wide and $\frac{3}{8}$ inch thick.

Men today spend much of their time at braiding sennit and *wao* fiber for ropes and fishlines. When the price of copra was high, many European fishlines and ropes were in use, but low copra prices have sent the men back to native materials though they consider cordage making a laborious job.

CLOTHING

The Pukapukans today wear European dress termed *kakau* (coverings). Formerly the everyday dress of the man was the *malo launuu* of plaited coconut leaf; that of the woman, the coconut leaf kilt (*titi launuu*). These articles of clothing were called generically *wakakavuu*; any clothing or ornament attached to the waist was called *lulu taukupuu*. In general clothing was worn below the hips. Today men retain this pattern in the way they fasten trousers below the hips.

The technique of making the man's coconut-leaf malo has been given (p. 141). To wear the malo, the strings are tied round the waist, the body of plaited material is placed over the genitals, and the braided tail is passed between the legs and fastened to the strings at the back. The woman's kilt of coconut leaf reaches to the knees.

The kilt is made by splitting leaflet-carrying strips of appropriate length from the butt end of the coconut leaf. The strips are made thin and soft by tearing off superfluous fibers with the teeth and by chewing. Four of these strips are placed together in pairs, with the rough side of the strips in juxtaposition. The two pairs of strips are tied together at 3-inch intervals with strips of midrib fiber (*kalava*). Each leaflet is split longitudinally by removing the leaflet midrib (*tua*), and may be split again any number of times with the thumb nail. A length of two-ply twisted sennit is tied to each end of the midrib strip waistband by which the kilt is fastened round the waist. There is no record that the leaflets of the kilt were ever plaited or braided together. Kilt C8192 conforms in all particulars to the above description.

Back supports of twisted fiber are sometimes worn. Formerly these girdles were made of the bark of the *welo* tree.

The bark was removed from the trunk of the tree and soaked in salt water for about two weeks. Strips of bark were then cut to the appropriate length and width and soaked in fresh water until the bark was white and tough. Dyed red, the bark was used as streamers for ornamental headaddresses. Left white and twisted into a cord termed *matai welo*, it was used to make the champion's ring at a wrestling contest or was wound round the waist (*pepetu ki te matai welo*) to support the back against strains. Today mourners sitting round a corpse for 24 hours or longer tie a sennit cord round the waist to support the back against the strain of continuous sitting.

Sandals of elaborate type are unknown. But when, after prolonged reef fishing, the soles of the fisherman become very soft from long immersion in water, he may strip coconut leaf stipule (*kaka niu*) from a tree by the beach, fold these strips to a suitable thickness, and tie them on his feet with lengths of coconut midrib fiber (*kalava*). These foot coverings, termed descriptively *wakamalu vae* (foot soothers), were worn over the sharp and hot coral until the soles hardened again.

Uncovered heads are exposed to the sun only for short periods. Adults who are to be out in the sun for some time invariably wear hats or make a rough head covering out of coconut leaves. No eye shade was or is worn to protect the eyes from the glare of the sun.

CLOTHING FOR SPECIAL OCCASIONS

Both men and women wore special clothes for festivals. The dress of the man for sports contests consisted of the malo of pandanus or the malo of sennit, or both. A non-contestant might also wear a poncho-like garment called *la kupenga*, and a sennit malo with attached feathers. The sennit malo (*malo kawā*) and the pandanus malo (*malo kie*) are described elsewhere (pp. 133, 146). Both are worn for wrestling contests, formerly also in warfare. The sennit malo alone is worn for other contests like spear throwing. The method of donning the two malos (*pelu te malo*) is as follows:

First each fringed edge of the pandanus malo is turned in to make a longitudinal fold about $\frac{3}{4}$ inch deep. The malo is then folded longitudinally a second time along the mesial line so that the final width of the malo is about $3\frac{1}{2}$ inches. An assistant takes the malo at the middle section and passes it round the waist from back to front crossing the two free ends above the navel. The malo is pulled tight; one free end is passed down over the genitals, through the legs, and brought up the back to hang over the shoulder. The other free end is brought up over the chest and also hung over the shoulder. The assistant takes the commencement end of the sennit malo, places this loop over the pandanus malo at the navel, and winds the sennit malo round the waist on top of the free end (thus burying it) and over the pandanus malo. Five or six transverse turns are made down, then a similar number of turns made up and over the first turns. The assistant continues to wind the malo round the waist until the twisted sennit end is reached. This end is passed down on the outside of the transverse turns, pushed under, and brought up underneath the transverse turns and over to the front again. The free end is pushed through and caught over the downward turn of the sennit cord, pulled tight, and the free end passed along the malo for about 8 inches, and bound round it again. This binding is continued until the transverse turns of the sennit malo are secure, the free end of the binding cord being fastened with a knot to the last transverse binding. One free end of the pandanus malo is now brought down from the front shoulder, passed over the sennit malo, pushed up and underneath the sennit, then obliquely down and under again, continuing to bind the pandanus malo round the sennit malo until the middle of the back is reached, when the free end of the pandanus malo is tucked under the sennit. At the back, the second free end of the pandanus malo that has passed through the legs is similarly bound round the sennit malo and worked round to the front where the free end is tucked under the sennit malo. Depending on the length of the pandanus malo, the binding turns will be spaced or contiguous. For composite dart throwing contests, the sennit malo alone is girt on as described. One man always helps another to gird on either malo. An alternative method of donning the two malos is given by Macgregor (20, p. 48 and pl.4).

There is a reference in a chant to a malo termed *malo kula*. Informants could give little information about this garment, though they suggested it was not necessarily worn by the chief alone but might be worn by any man who was fortunate enough to own one. It consisted of the ordinary five-ply sennit braiding, but at each twist of the braiding, the quills of small red feathers were inserted and caught by this twist. The name of the bird from which the feathers were obtained had been forgotten.

Some braided five-ply malos were formerly made from human hair, possibly the hair of a beloved child who had died. Presumably these malos

were shorter than those made of sennit and were therefore worn more as ornaments than as protective clothing.

Both the malo of sennit and the malo of pandanus are greatly valued today in terms of sentiment and scarcity. No longer being made, they are the greatest heirloom that a man can hand on to his son. Sennit malo C8.146 was procured from a childless man who felt he had no further use for it. During the confessional held as a last desperate attempt to save the life of an only male child, the sennit malo that the child would inherit was hung from the house tiebeams as if its highly charged sentimental value might help the child to hold onto life (p. 338).

Informants suggested that the hands of contemporary Pukapukans are different from those of ancient Pukapukans and that therefore the art of making the very tight five-ply braid of the sennit malo has been lost. But, as both malos might be classed by missionaries as heathen garments, there is no longer sufficient incentive in the culture to take the trouble to make them.

The art of making the poncho-like garment (*la kupenga*) worn by men above the pandanus malo has been lost, but from informant's description it seems that it is plaited of fine strips of *kie* pandanus material. Three or four elements were plaited as a single element (*langa tolu* or *langa wa*). The garment was rectangular, falling to the waist at front and back. The neck hole was either square or roughly V-shaped. Hanging ends were fringed with strips of *kie*, and the garment was fastened with strings of *welo* cord (*matai welo*) on either side, one pair of strings under the arms, another pair at the waist. Informants felt that there was no status associated with the wearing of this garment, but it was worn on festive or ceremonial occasions by anyone whose wife or relative had acquired the technique of plaiting it from a dream in which familiars came from the Underworld to teach it. The following lines of an old chant were quoted to prove the antiquity of the garment:

Wakawaua ki te la kupenga
Tuputupu a Yiva angaoti
Yongia ona wakaeevenga.

Clothed in the *la kupenga*
Made as in Yiva (legendary land)
certainly,
Smelled its fringe.

Informants said that a Pukapukan man returned from the land of Yiva where the art of making *la kupenga* was also known. He was wearing a foreign-made *la kupenga* when he landed. The people went to greet him and some pressed the fringe of the garment to their noses. This fringe had the smell of a foreign land or of a foreign people. It may be inferred perhaps that the garment was introduced into Pukapuka from the land of Yiva and never became a common article of wear, its use dying out rapidly when the Pukapukans acquired European garments.

Corresponding to the *la kupenga* worn by men was a sort of short cape (*yeu*) worn by women. The art of making the *yeu* has been lost today.

Informants disagreed as to whether it was rectangular or round, but it was finely plaited of *kie* pandanus material. It was slipped over the head and fell to about eight inches below the neck. No fringe is mentioned. Ties from the bottom front were carried round to the back and fastened. Ties from the bottom back were fastened to the front ties at the middle of the back. The garment was thus a cape covering shoulders and breasts. It was probably worn by some women on festive occasions, not from modesty perhaps, but as a type of decoration (*wakamanea* or *mea wakalelei*) or as a sketchy protection against the sun.

Decorative kilts (*takove*) were sometimes worn by the women. They were made by dipping strips of *lito* pandanus material into red dye and fastening these strips either to the ordinary coconut-leaf kilt, thus making a kilt of green and red strips, or else to a separate girdle worn over the coconut-leaf kilt.

CEREMONIAL DRESS

Special varieties of the poncho garment, the ceremonial priestly head-dress, and the pandanus malo, constituted the attire of the chief when he went to the religious structure of his lineage for his induction or later for consultations. Special garments were worn according to the god consulted. The garment (*epa*) of the chief of Muiwutu for consulting the gods Malokitelang, Te Matakiate, or Tumailangi, was made of netted two-ply twisted sennit and called *epa kupenga*; that of the chief of Matanga for consulting the god Tumulivaka was made of plaited *welo* fiber (*epa welo*); that of Tuu for the gods Mataliki and Tamayei was made of fine plaited *kie* material (*epa lauliki*).

No informant had seen an example of these *epa* garments, but it was suggested that they were made in the shape of the *la kupenga* garment with fringes of the same material as the body. It was believed that the gods concerned wore the type of *epa* garment ascribed to them during their stays in the Underworld and that they came in dreams to the men or women to whom they taught the technique for the appropriate garment. The *epa* of the chief was a very tapu costume, protected both by the sacredness of the chief and the vaguely conceived power of the gods. If any unauthorized person handled the *epa* garment, the god would punish him by striking him dead with a flash of lightning.

A special type of headdress (*taumata kawa* or *taumata aliki*) was worn by the supreme chief and sub-chiefs on festive occasions. Geoffrey Henry reports that he saw the late chief Pilato wearing a hat of this type during the visit of the missionary boat *John Williams* to Pukapuika in 1912. No old hat of sennit exists on the island today, but informants made one which may be considered fairly authentic. Gill (10, pl. p. 18) shows a native wearing a

padded conical hat obviously not made of netting. There is no information available as to the material from which this hat is supposed to have been made nor of the method of manufacture. Gill's hat may represent an artist's conception of the sennit netted hat of the chief.

Hat C8094 (*taumata kawa*) is made of two-ply twisted sennit netted into a conical shape (pl. 4A). The technique of the netting is the same as that for ordinary fishnets (p. 207). The meshes are $\frac{3}{4}$ inch wide. The rim of the hat is made of a thin strip of coconut midrib $\frac{3}{4}$ inch wide which is bent into a circle of $7\frac{3}{4}$ inch diameter and the two ends bound together with sennit. Six vertical strips of midrib, each $8\frac{1}{2}$ inches long, are bound at equal intervals to the rim. The distal ends of these strips are notched, gathered together to form the apex of the cone and fastened together with figure-of-eight turns of sennit. The rim strip and two bracing circular strips of midrib, one strip $2\frac{1}{2}$ inches from the rim, the other $4\frac{1}{2}$ inches from the rim, are passed through the meshes of the hat material and bound to the vertical bracing strips by transverse turns of sennit. A 6-inch fringe is attached to the hat. Fringe material is made by fastening coconut fiber (*laukawa*) to a base strip of pandanus (fig. 18, e-g). Two strips of fringe each

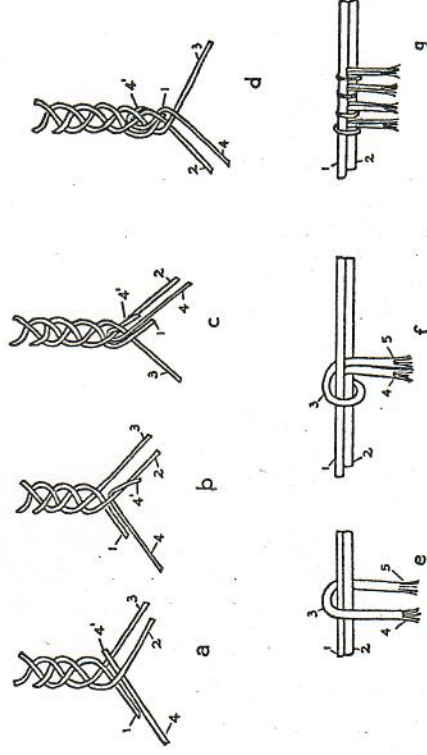


FIGURE 18.—Braiding and fringing technique: a-d, braiding; e-g, fringing technique (*watu wakalatalaka*, made to bend over) for sennit hat. a, three-ply sennit braid, end of ply (1) either short or thin, making it necessary to join to it another strand; ply 1 brought to left and renewal strand (4, 4') laid alongside 1, under ply 2; short end 4' placed over ply 3. b, short end 4' folded down and along ply 2. c, ply 3 brought across ply 2 and short end of ply 4', locking this short end in position; ply 1 and ply 4, working together as single ply, brought across from outside to pass over ply 3. d, short end (4') of added ply securely locked; ply 2 passes over plies 1, 4; ply 3 passes over 2 and ply 4 passes again across 3; continuation of braiding makes join in plies barely perceptible save under closest scrutiny. e, strand (*amo*) of coconut-husk fibers about 12 inches long, doubled (3) over two strips of pandanus material (*lauwata fakapaka*) (1, 2) which are knotted together at one end and looped over toe, forming near limb (4) and far limb (5). f, both limbs (4, 5) brought up between two strips (1, 2), passed over lower strip (2), and pulled tight. g, strands of fiber added successively to right; pulled tight and kept close together; pandanus strips (1, 2) hidden by turns; fibers of strands indicated by light shading of strand ends (4, 5). Pukapuikan technique inverts Manihikian technique noted by Buck (29, p. 135, fig. 47).

19 inches long are fastened to the netting of the hat. One end of one fringe is laid on the outside rim of the hat, passing up and over the outside apex, and down to the rim again at a point opposite the starting point. The fringe is fastened to rim, netting meshes, and apex by a continuous semit cord which makes transverse turns round fringe and points of attachment about 1 inch apart. The second fringe is applied to the hat in a similar manner, passing from rim over apex to opposite rim at right angles to the first fringe. A third length of fringe 24 inches long is fastened round the rim in a horizontal plane with a continuous semit cord. To the inside of the rim a piece of pandanus ½ inch wide is bound with continuous turns of semit to form a hat band. Informants suggested that the more correct hat band material is *welo* bark. Two lengths of semit are tied to the apex of the hat and their ends knotted together to form a suspension loop 11½ inches long by which the hat may be hung up when not in use. The fringe is combed out at regular intervals to prevent snarling of the fibers.

The priests of each lineage (*po*) wore headdresses when consulting the gods in the god houses or on the religious structures. Headdresses not in use were hung up in the god houses. The relation of the headdresses to the gods is obscure. Some thought that the headdress was worn in the Underworld by the god in question, others that a priest wore a special headdress because a certain god gave him inspiration when he was an initiate, still others that the headdress was worn only for consulting special gods. Probably all three opinions are equally correct. Some headdresses were described by informants who had seen them in their extreme youth. Gaps of memory were filled in by reference to chants. None today can make any of the headdresses of which there are no survivals on the island.

The headdress of priests of Muliwutu was called *aumanga*. It was also associated with the god Te Laupapa. Two strips of red-dyed *welo* bark (*zewiti welo*), each about 2 inches wide and long enough to pass round the head, were fastened together to form a headband. At front and back between the double headband strip were fastened two pieces of turtle shell, each about 2 inches wide and from 12 to 16 inches long. The two pieces were about 5 inches apart at the base and crossed like a St. Andrews Cross.

The headdress of Matanga, Yangalipule, and Yamanain sub-lineage, was called *puloi*, and was associated with the god Te Awuawu. The head was oiled and the hair laid straight back flat on the head, overhanging the neck and back. A double headband of *zewiti welo* bark was wound round the head. To the front of the band was fastened a single strip of turtle shell, to the tip of which was tied a large bunch of *zewiti welo* streamers which fell back over the hair and onto shoulders and back.

The headband of Tua and of Matanga sub-lineage was called *aumanga pakayen kolava* (headdress of crossed frigate bird feathers). It was associated with the god Ngaliyeyeu. It consisted of the usual *zewiti welo* headband, to the front of which were fastened two frigate-bird wings crossing each other to give a fish-tail effect. An alternate headdress for priests of Tua was associated with the goddess Tanaa. It was made of fine mesh semit netting and was termed *kupenga ya*. The headdress probably resembled the semit hat of the chief without the coconut fiber fringe. The net of the goddess Tanaa had the virtue of rendering invisible anything over which it was cast, and also of blinding the thing hidden under it. Hence when a foreign vessel was reported off the island, the priests of Tanaa donned their net headdresses, thus symbolizing that Tanaa had placed her net over the whole island and that it was now invisible to the crews of the foreign canoes.

The headdress of Yalongo and Yayi lineages was called *puliki kekeo*. It was associated with Te Atua Vaelua and Te Alongaao. The long hair was oiled and braided

in the shape of a cone on top of the head. *Welo* bark was wrapped round the forehead, and the wrapping continued round the cone of hair to the apex. A single piece of turtle shell fastened to the headband stood up in front of the wrapped turbanlike cone. Long *zewiti welo* streamers were fastened to the tip of the turtle shell, falling back over the top of the cone to blow out in the wind.

The headdress of Yamaunga was also called *aumanga*, but was associated with Te Maungatu and Talitonganuku. It consisted of the *welo* headband base to the front of which was fastened a piece of turtle shell cut in a conventional representation of a fish-tail (like a Tau cross with an inverted cross member). To the cross member of this turtle-shell cross were tied *welo* streamers at four equidistant intervals. At equal spaces round the headband were fastened four strips of turtle shell, each 6 inches high. To the tip of each piece of turtle shell was fastened one *welo* streamer.

ORNAMENT AND DECORATION

Ornaments and body decorations of shell, leaves, and flowers are worn round the waist, over the shoulders, suspended from the ears and hair, on occasions when the Pukapukan man or woman feels the call to beautify the body—for formal festive occasions, or informally whenever flowers and leaves are at hand. Tattooing and body painting were unknown in Pukapuka. There are no discoverable references to them in chants or stories.

Almost every leaf or flower on the atoll may be worn at one time or another by man, woman, or child as a chaplet (*taumata*), necklace (*yei*), or waist decoration (*titi*). Women seldom return from the talo gardens without a few leaves or flowers stuck in their hair or fastened about the waist as a rough girdle. Men serving as guards or working in the bush always find time to make for themselves a chaplet or necklace of leaves. Children stop in their play to make themselves little foliage decorations. Young people, bound for lovers' meetings on moonlight nights, oil their bodies and hair with sweet-scented coconut oil and make themselves necklaces of *tiale* flowers.

VILLAGE DECORATIONS

For public festivals, such as those celebrating the winning of a sports contest, each of the three villages has its own characteristic foliage for decorative kilts, chaplets, and shoulder bandoliers. The people of Ngake make their decoration of *muko wala* (the white heart leaves of the pandanus), *lakau yili*, *taumakomako*, or *pola puka*; the people of Loto make decorations of banana leaves (*lau zewiti*); the people of Yato, of coconut leaves or the *maile* fern. Decorations of these leaves are distinctive signs (*mailongo*) of the respective villages. Waist decorations (*titi*) are worn over the customary basis garment.

The *titi muko wala* (kilt of white leaves of pandanus) is made by stripping young leaves from the pandanus tree. Spikes are trimmed from each leaf and the leaf is split in two longitudinally. Each leaf is white for most of its length shading to a pale green at one end. A plain strip of prepared pandanus (*hio*) is used as a basis girdle. The worker lays the girdle on the ground, takes one leaf and fastens the green end to the

girdle with a single overhand knot so that an inch or more of the green end projects above the knot. The projecting end is laid along the girdle. The second leaf is similarly fastened over both green end of first leaf and girdle, the third leaf over the green end of second leaf and girdle. The process is repeated until a girdle of sufficient length is obtained. A plain headband of *miko wala* leaf is worn with this girdle.

Girdles of *tamaakomako*, *lakau yili*, *pota puka*, and *maile* are made by placing twigs of the plant into bundles, each with the butts in the same direction. Each bundle is overlapped with the next bundle, the butts of the first bundle with the leaves of the second, and the girdle is bound together with continuous transverse turns of fiber stripped from the coconut midrib.

Girdles of banana leaves are made by stringing the stalks of a number of banana leaves on a coconut midrib fiber.

The girdle of coconut leaves is made by tying the ends of a strip of midrib-carrying leaflets round the waist.

Any of these girdles may be worn as a bandolier by slipping it over the head and allowing it to fall across chest and shoulder. A bandolier of the *nau* plant is a favorite decoration of Ngake villagers. A thin strip of coconut midrib is bent into a circle and the ends fastened together. *Nau* twigs are laid round the rim of midrib and bound to it with transverse turns of green coconut leaflet.

Waist girdles made of pieces of pearl shell shaped like the shanks of small composite pearl-shell fishhooks and strung on a length of *wao* fiber were termed *mua titi ui*. They were worn as a fringe across the front of the waist on top of the basis garment. This ornament was a prized one and was worn only by persons of status. It was also an appropriate gift to give to the corpse of a beloved relative. One was seen by the grave diggers who opened an old grave by mistake (p. 164), but there is none on the island today.

Edge-Partington (8, 2d ser., pl. 38, 5) sketches a "girdle worn by men consisting of a long string of cowrie shells. The string passes along the mouth of the shell and plugged (*sic*)."

This girdle, which is in the British Museum, is 120 inches long. Such a girdle would be intolerably heavy when worn round the waist, and it is possible that what was originally a sinker line for a seine net has been mislabeled as a waist girdle. My informants did not mention a girdle of this nature.

BREAST ORNAMENTS

Breast ornaments were made of flowers or more permanently of pearl shell or other shells. Leis (*yei*) are made of *tiale* flowers strung together on a strip of pandanus. More elaborately, *tiale* flowers are alternated with transverse slices of the ripe pandanus key. These are made and worn by young men and women, often as lovers' gifts.

Permanent leis of pearl or small sea shells are termed generically *yei*. One type of breast ornament (*yei liki ui*) is shown in figure 19, a. Another

type, termed *taumanea*, consisted of small fishhook shanks of pearl shell alternating with pieces of pearl shell cut into other shapes, strung on a cord of *wao*. There is no example of the *taumanea* on the atoll today, but Talainga reported that he saw in the mistakenly opened grave pieces of pearl shell cut into the shape of five-pointed stars which he suggested belonged to an old *taumanea*.

The pearl-shell breast ornament (*yana*) shown in figure 19, b, is the most valued type of permanent ornament. It was formerly worn by the chief for ceremonial occasions. The formal placing of the *yana* round the neck of an aspirant to a vacant title signified that he was the chosen man. Skinner (24, p. 187), in discussing pearl-shell pendants in the Cook Islands, suggests that these pendants may have been attached to the head by plaiting the uncut hair of the wearer. In support of this theory he reproduces from Gill (10, p. 18) a section of the plate entitled, "A Village in Pukapuka under Heathenism." Whatever the validity of the scene purported to be shown in this plate, informants knew of no custom of attaching ornaments to uncut hair, nor is there any record of crescentic pearl-shell ornaments being attached to arms, torso, or sides of the head.

EAR ORNAMENTS

Ear ornaments are termed *wakaevavevenga*. The ear lobes of an infant are pierced with a bone of the sword fish or a spine of the pandanus leaf. A piece of *pukama* wood is pushed through the hole and left until it heals, to prevent closing. There is no record of lobe distension by pushing bulky or heavy articles through the lobe holes. Earrings consist of small rings of coconut shell (*wakaevavevenga ngai-pu talinga*) or else more elaborate earrings of coconut shell, turtle shell, and pearl shell. The earring illustrated (fig. 19, e) is beautiful when polished. Informants stated that the design was an old one and could be executed with old time Pukapukan implements. Simple ear ornaments are made by pushing the stem of a *tiale* flower through the lobe hole. Another ornament called *kakalivi* is made by levering off with the thumb nail the floral bract (*kakalivi*) of the immature coconut, pinching the bract together to make a short slit. The slit is then placed against the lobe of the ear, and when the fingers are released the lobe is pinched by the natural spring of the bract.

HEAD ORNAMENTS

Simple head ornaments are made by pushing flowers into the hair or binding the hair with strips of pandanus or coconut leaflet. A flower so worn is a *piki*; a headband is a *putiki*. More elaborate headbands are made by splitting the flower and seed containers (*kaupua*) of the pandanus tree

into thin strips which are then braided into a three-ply braid long enough to go round the head, the two free ends knotted together. The chaplet is sweet-smelling and is a favorite with both children and adults.

The coconut fiber fringes used to decorate the net hat of the chief are also worn separately as part of the decorative costume of Yato village. The fringe is fastened to a strip of pandanus leaf which is tied round the forehead. Fringes are fastened round the brim of the modern hat. The decoration is sometimes completed by more fringes worn round the neck and across the breast.

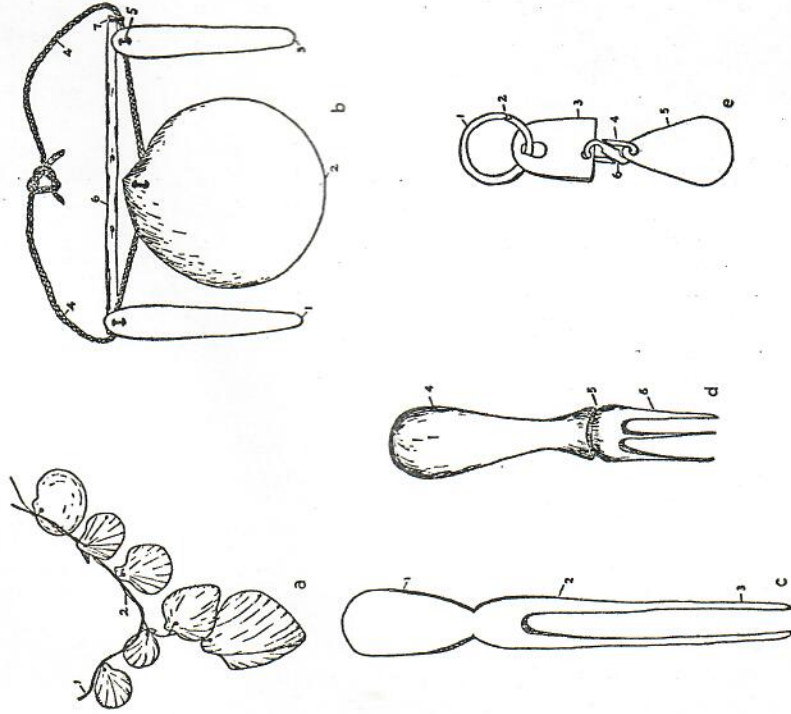


FIGURE 19.—Ornaments. a, section of shell neck ornament (yei lili ū); original (C8158) consists of 32 small shells (*Pinctada*; *Chlamys*; *Caridium fragum*; and *Codakia, Jagonia bella*); *Chlamys* are mainly yellow (some pink), *Pinctada* mottled blue and green, and other shells white; necklet cord (1), 34 inches long, made of two-ply twisted wao cord 1 mm in diameter; holes bored in hinges of shells attached to necklet cord by single-ply strand of twisted wao fiber (2), passing through hinge holes and making transverse turns around necklet cord. b, pearl-shell breast ornament (yama) (C8033): two side pendants (1, 3) of polished gold-lipped shell are shaped like a composite hook pearl-shell shank; shank (1) 4 inches long, 1/8 inch thick at distal end, 1/4 inch thick at

proximal end; shank (3) 3/4 inches long, 1/4 inch thick at proximal end, 1/8 inch thick at distal end; each shank 3/4 inch wide at proximal end, 1/2 inch wide at distal end; center shell (2) also of gold-lipped shell, polished smooth; greatest length 4 1/4 inches, greatest width 3 3/4 inches, thickness at hinge 1/4 inch, at lip 1/8 inch; at proximal end of each piece of shell two holes drilled with old-time drill, showing crater effect; necklet cord (4) of three-ply braided human hair 2 feet 1 1/2 inches long and averages 3/16 inch in thickness; pendants fastened to necklet cord by length of braid (5) 1/8 inch thick, which passes through holes and is knotted to necklet cord; pendants held apart by stretcher (6) of ngangie wood 6 5/8 inches long, 1/4 inch wide, 1/8 inch thick; ends of stretcher notched (7) and fastened to necklet cord by four transverse turns of fine two-ply twisted wao cord; turns finished off with circumferential turns between cord and stretcher. c, wooden comb (yelu) (C8034) with two teeth (matatua) made of ngangie wood; 9 1/4 inches long; handle (1) averages 1/2 inch thick; teeth 5 1/2 inches long, 3/8 inch thick at 2, 1/4 inch thick at 3. d, comb with three teeth (matatolu) (C8035) made of ngangie wood; handle round and 1 1/2 inches thick at 4; a pronounced shoulder (5) separates handle from short teeth (6) which are 2 7/8 inches long and average 3/4 inch thick. e, earring (wakaerevenga) of pearl, turtle, and coconut shell (C8140): coconut-shell ring (1) 3/8 inch in inner diameter and 1/16 inch thick, cut through obliquely at 2 so that ends can be opened and slipped through hole in ear lobe; thin plate of golden pearl shell (3), attached to ring, 7/16 inch high, less than 1/16 inch thick; attached to lower plate of pearl shell (5) by figure-of-eight connective of black turtle shell (4) which is 5/16 inch high, 1/4 inch wide, and 1/32 inch thick; each half of connective slit (6) so that it may be slipped onto two plates of pearl shell; lower plate of pearl shell (5) 1 inch high and less than 1/16 inch thick.

Formerly when both sexes wore long hair, the hair was dressed with wooden combs (fig. 19, c, d). The two-pronged comb (yelu mata lua) was used to beat water from the hair after it had been washed; the three-pronged comb (yelu mata tolu) was used to arrange the hair and sweep it back before tying it together at the back of the head with a strip of pandanus. For ornamentation, the combs were often left in the hair. Though the wooden comb has gone out of use today, most women wear a trade comb as an everyday ornament.

STONEWORK

Because of the absence of basaltic stone, Pukapukan stonework is limited to the use of coral (*punga*), coral conglomerate (*kaupapa*), and coral pebbles (*kilikili*). Stone is used for paths, seats, walls, house foundations, well facings, fishweirs, graves, religious structures, and tools.

PATHS

Paths and trails cut through the bush lead from the lagoon side to the outer beach side of the island. When they reach the outer beach, some paths are continued down to the sea and across sharp coral rubble by stepping stones of flat slabs of coral conglomerate placed over the rubble. They enable the fisherman or other visitor to the outer beach to walk to the sea without cutting his feet on the sharp stones.

STONE SEATS

Formerly a man might make on the outer beach a stone seat (*tokewelaugi*) on which to rest in the cool of the evening, eat the evening meal, and sleep. Informants stated that the two Pukapukan voyagers, Tonu and Taea, saw stone seats on the island of Wakalava and introduced the idea on their return to Pukapuka.

There was apparently much latitude in the way these stone seats were built. Some were built with a stone seat, stone back rest, and a slab at either side for an arm rest; others were made by hollowing out a shallow depression in the sand and facing the bottom and sides of the depression with coral slabs. The sides were inclined at an angle of about 10 to 15 degrees to the bottom; the bottom was at least 6 feet long, and 3 feet wide, wider if a man planned to take wife or sweetheart to sit with him. Other seats were made according to fancy. Each seat was named after its owner and served as a symbol of his prestige. No seats are used today, most of the stones having been used for oven stones: missionary teaching does not countenance the use of stone seats on lonely outer beaches. Macgregor's statement (20, p. 25) that the idea of these seats was brought to Pukapuka by the people of Yayake and that they were used by priests as religious structures for the offering of turtle and fish to the gods received no support from informants who were strongly of the opinion that the seats were places of rest and recreation only.

The stone seat on the southeastern outer beach of Motu Ko, which tradition states was used by the bird man Watu-manava-nui, is now in ruins. The remains of other seats lie close by. The outer beach has been elevated at this place by the piling up of coral gravel through wave action and the ruins of the seats are situated well under the lee of the raised beach. To have been useful as cool resting sites, the seats must have been built before this beach was elevated. The ruins consist of fragments of stone 1 to 2 feet square. The original stone seat, suggested informants, has been gone for many generations, washed away by high seas. A later generation built on the same site, but these seats were mostly destroyed by the seas; those that remained were pulled down under missionary influence.

WALLS

Stone walls marking the boundaries of the reserves (p. 35) have now almost disappeared, but remnants of the wall round Uta are to be seen at the place Matala. The wall consists of large slabs of coral conglomerate set on edge. The old gate (*pu*) through this wall still remains. It consists of a gap about 2 feet wide marked on either side by a stone reputed to have been carried there by the warrior Kupolu. One stone is 7 feet wide, 8 inches thick, and 4 feet 8 inches above ground; the other is 7 feet 8 inches wide, 22 inches thick and 4 feet 4 inches above ground. Each stone is set about 3 feet in the ground. The size of the stones, if typical of all the stones forming the wall, indicates the great labor of building the wall.

HOUSE FOUNDATIONS

The use of small coral slabs set on edge to form the boundary of the house platform and the use of coral pebbles to form the house floor is described on page 116.

WELLS

Deep wells dug close to the beach were always faced with coral slabs. Shallow wells, 1 or 2 feet deep, were not faced unless they were in constant use. Slabs at the bottom of the well were stood on edge and forced into the sand; the sand was dug out inside these upright slabs and the bottom of the well paved with coral gravel. Above water level, the sides of the well were faced with horizontal slabs set one above the other. The edge of the well at ground level was faced with especially large blocks of stone to give a firm foothold to the drawer of water and to ensure that the top of the well would not cave in.

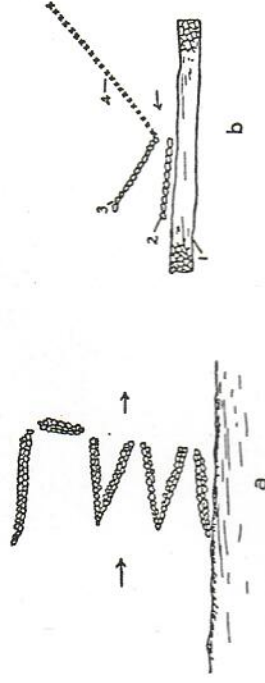


FIGURE 20.—Plan of fishweirs. *a*, stone-walled fishweir off western beach of Yato village: walls about 20 feet long, width of three weirs about 60 feet; fish swept into weirs by ebbing tide moving in direction of arrow. *b*, composite weir in lagoon indentation: 1, causeway forms one wall of weir; 2, row of stones set against causeway to block possible channels; 3, row of stones forming second wall of exit (*ala ika*); 4, coconut-leaf weirs forms second wall of weir; net placed at convergence of leaf and stone walls to catch fish moving with ebbing tide in direction of arrow.

FISHWEIRS

Stone fishweirs are found in the reef shallows opposite the northwest beach of Wale, between the beach and the reef passage. One weir is about 100 yards from the beach and consists of stones piled in line to make an enlarged W-shape; the second weir is close to the beach and consists of stones forming a W-shaped trap contiguous with a second trap in the shape of a large square-bottomed U (fig. 20, *a*). The weirs face north and south; the exits are at the northern end, that is, at the points of the W and at the two sides of the bottom of the U. The ebbing tide sweeps through the weirs on its way out over the reef and carries the fish along into the weirs blocked with hand scoop nets.

A combination stone and coconut-sweep weir (fig. 20, *b*) is built in the small lagoon indentation cut off from the main lagoon by the causeway that joins the two sections of Yato village. The fisherman seated on the causeway is able to block the exit of the weir with a scoop net.

STONE IMPLEMENTS

Owing to the scarcity of hard stone, adzes were generally made of *Tridacna* shell; a few were made of imported stone (p. 164). Mallets (*tukituki*) of small, unshaped pieces of coral conglomerate were used to pound caulking material between the seams of the plank canoe. Stones were used for grating talo and for cutting pearl shell (p. 169).

RELIGIOUS ENCLOSURES

Religious enclosures (*raevanga*) on which priests communicated with the gods were round or oval, the form demarcated by a circle of stones placed on edge. Two gaps (*pu*) were left in this circle as entrances to the worshipping place. In the center was the sacred stone (*umu*) of the god. The ground inside the circle was covered with fine white coral gravel.

Today, only traces of several of these religious structures survive. No complete stone representation of a god remains, but informants suggested that this was any large block of unshaped *pinga* coral (p. 319). A section of the stone that once represented the goddess Taau, now functioning as a foundation stone for the old copra shed on Loto beach, bears out this information.

Several sites of old religious structures were visited at the place Utupoa on Wale where were formerly situated the enclosures of old Ngake village. Two of these sites were cleared.

At the religious structure of the god Te Alongaea there remain nine stones of undressed coral, each stone approximately 32 inches wide, 16 inches high, and 4 inches thick. The tops of the stones are about 3 inches above ground level. By continuing the outline traced by the stones, it appears that the religious structure was about 12 paces in diameter. Of the stones standing, one is on the eastern rim, three on the northern rim, five on the southeastern rim. A young coconut tree is now growing on the western rim of the structure. A circle of coconut trees is planted round the outside of the rim of this structure as well as round that of the god Tulikalo. I do not know whether this was formerly the case. To test the levels of the structure, a trench 4 feet deep was sunk across it. The first level was sand and leaf mould. Twelve inches below the surface was the fine gravel that formerly marked the ground level. Below this again was the characteristic sandy gravel of the atoll. Nothing of further interest was turned up by the excavation.

The former religious structure of the god Tulikalo was also cleared to reveal five stones of about the same size as those on the structure of Te Alongaea. The enclosure was about 10 paces in diameter.

The two contiguous structures of the gods Tumuliwaka and Te Matakiate are so overgrown that it was impossible to clear them. Examination of the ground showed that no stones are left on the structure of Tumuliwaka. One stone was left on that of Te Matakiate. This stone of undressed *pinga* coral is rectangular, 24 inches long, 8 inches above the ground, and 6 inches in diameter. Informants traced the outline of the structure. It apparently was oval with a diameter of about 15 paces one way, 13 paces the other.

No other sites visited revealed stones. Informants stated that during early missionary days, the stones were removed to build a causeway across the talo swamp, to make walls for stone houses, and to burn for lime, which, mixed with sand, provided the mortar for the new stone houses.

The pattern of low-walled, oval or circular religious enclosures with a central stone representation of a god is an unusual development in Polynesia and recalls the structures that Gill described for Niutao in the Ellice Islands which he visited in 1872. Gill mentions that the stone representative of the god Tangalao was a plain upright slab. The religious structure adjoined the burial ground (a common Pukapukan pattern) and consisted of "an oval low enclosure, composed of flat stones, some higher than others, each representing a distinct divinity, so that the sacred men standing inside the enclosure—the people of course outside—could worship all the gods at once" (12,p.14). It is unfortunate for comparative study that Gill did not particularize these religious enclosures in more detail.

Commemorative stones, marking the shrine of an ancestor god on a sacred clearing (*vianga*), consisted of a single upright stone set in the ground, or else several stones set on edge to form a rectangular structure two or more feet square, the enclosure being filled in with coral gravel. This type of commemorative shrine was similar to the seats (*potu*) of the priests in the god house (*wale atua*) and also to the low seat that was set before the stone representative of the god on the religious structure.

GRAVES

Formerly each cemetery was surrounded by a low, rectangular wall (*paepae*) of coral stones which demarcated the area set aside by the people of a lineage as their burial place. The area varied in size according to the numerical size of the lineage. Most of these walls have fallen into decay, but are observable on some cemeteries removed from the village. The stones are about 3 inches above ground and are undressed coral of different lengths and thicknesses.

Outside these walls are observable the stone *paepae* that marked the foundations of old houses of mourning (*wale matenga*). On one foundation are still seen the holes into which the wall posts of the house fitted; on another, rotting wooden posts from the dismantled house are lying on the foundation.

Within each cemetery, the graves are of three types: the modern Christian, enclosed, boxlike grave; the rectangular, open grave accorded formerly to people of rank; and the two-stone grave accorded formerly to commoners (pl.2.B).

Former custom was to bury with head to the east, feet to the west. Graves of chiefs (*aliki walo* and *wai aliki*) were marked by eight stones—two at the head, two at

the feet, and two at each side; the grave of an executive peace officer (*yula*) was marked by eight stones—two at the head, three at the right (north) side, two at the left (south) side, and one at the foot; the grave of the executive officer or "prime minister" (*vo/a*) was marked by seven stones—two at the head, two at each side, and one at the foot; the grave of a close relative of the chief was marked by five stones—two at the head, and one at the sides and feet. Graves of commoners (distant relatives in the chief's lineage) were marked by a simple headstone and a footstone. Burials of these undistinguished people were side by side, a few inches separating each headstone and footstone in a long grave. Thus over a grave 24 feet long, 8 feet wide, is a row of stones indicating that at least 16 people were buried side by side.

The gravestones of commoners are undressed coral, laid on the side, 6 inches to 2 feet wide and about 6 inches above ground. Gravestones of chiefs vary in size; an average stone is about 30 inches high, 15 inches wide, and 5 inches thick. The surfaces of all graves are covered with fine white coral gravel.

Much confusion exists among informants as to whether gravestones of particular shape or material were chosen to serve as signs of personal skills or peculiarities of the deceased:

Veti, for instance, feels that formerly it was common to use hard *kaukapa* coral conglomerate for a man's gravestone, softer *pauga* coral for a woman's, symbolizing a cultural attitude that skulls of men are hard, those of women soft. He knew of no custom of symbolizing individual peculiarities. Another informant, Te Apa, suggested that formerly it was not unusual to mark the grave of a particularly expert fisherman with a stone whose top was bifurcated like a fish tail (pl. 2, B). If no naturally shaped stone was found, a stone might be roughly cut to serve the purpose; the grave of a champion (*toa*) at sports might be marked by a very large triangular stone. Pau made the most consistent, though at times confused, attempt to suggest a more elaborate symbolism for curiously shaped stones. According to him, the grave of an adult man was marked by coral stones laid on their sides about 9 inches above ground; that of a woman by stones on their sides, about 5 inches above ground; that of a child by smaller stones. If a man had two wives, he had two headstones, the children of his first marriage being buried to the left of one headstone, those of his second marriage to the right of the other headstone. The grave of a champion was marked by a tall stone, that of an expert fisherman by a stone with a naturally indented top, that of a priest by a naturally shaped stone that resembled a priest's headdress.

Contrary to these rationalizations, ordinary folk belief has no knowledge that gravestones are anything but rough, unpolished stones (*vaetu kaukinokino*), chosen for the deceased according to the fancy of the survivors. This attitude suggests that the practice of selecting stones to symbolize personal qualities of the deceased was a matter of personal whim rather than an accepted pattern of Pukapukan culture. It is unlikely that acceptance of Christianity would militate against the memory or observance of such a custom if it was formerly in vogue, because death customs are tenacious even in a society subject to rapid change and because it is common Christian practice to engrave on gravestones particulars of a deceased person's abilities and character. In spite, therefore, of individual beliefs about the symbolism of gravestones, it is probably correct to assume that few people bothered to select stones to which symbolisms might be attached.

A number of separate graves on the atoll provide variation on the common type of burial stonework:

The grave of the Tongan warrior Taupeoa, on the boundary between Yato and Loto villages, is a separate grave apart from the nearest lineage cemetery. It consists of 10 stones (originally 11), forming a rectangle 6 feet by 5 feet. Two stones form the east end of the grave, three the west end, three the south side, and two the north side. All

the stones are of undressed coral and of varying shapes, 7 to 30 inches long, 8 to 30 inches high, and 1 to 4 inches thick. The grave of the second Tongan warrior, Tokai-pole, on the boundary between Loto and Ngake, consists of a double enclosure. The grave proper is now marked by five stones tracing a rectangle 8 feet long, 3 feet wide. This grave is enclosed by a low curbing 17 feet long, 7 feet 6 inches wide, of which there remain today 14 stones, each approximately 18 inches long, 6 inches thick, and 7 inches above ground. This grave is falling into ruins and many stones from the curbing have been removed.

The grave of a child in the cemetery of Walangkakula is a small rectangular enclosure 2 feet long, 1 foot 6 inches wide, made with small coral stones set on edge about 5 inches above ground. Pau noted that this was the grave of a dearly loved infant whose parents took this way of commemorating their love, instead of burying with a simple headstone and footstone.

The grave of the chief, Te Kula, is situated to the east of and separate from the cemetery of Matanga. It is 10 feet long, 3 feet 7 inches wide, and is marked by eight stones, each about 6 to 12 inches high. Next to this grave is that of his children who were all buried in a canoe. Their grave is 32 feet long, 5 feet wide and marked by 26 small stones, each about 8 inches long, 8 inches high, and 1 inch above the ground. The stones are both rectangular and triangular.

On Motu Ko is a separate grave, on the outer beach, of Tuanua who was killed as a thief, and another more elaborate grave, at the point Matautu, of a man named Walakula and his two companions who broke the tapu of the reserve and were killed for their sacrilege. Their relatives erected gravestones in the shape of a double shield to commemorate their death. The inner shield has the base to the east, the apex to the west; the base is 6 feet long, the apex 6 feet from the base line. The outer shield follows the outline of the inner shield, being from 7 to 12 inches from it, narrower where stones have fallen in toward the inner shield. The inner shield consists of 14 stones, the outer of 20, ranging from 1 foot to 3 feet 4 inches wide, 3 inches to 18 inches high, and 1 inch to 7 inches thick. The stones are undressed, mixed conglomerate and coral. No reason can be given for the peculiar shape of this grave save that relatives wished to build a personal memorial to the deceased man.

Of the many graves examined, two only were found lying off the customary east-west direction. One is the grave, lying northeast by southwest, of a man in the Loto cemetery of Walangkakula. Pau stated that this grave was oriented to face the principal cemeteries of Yato village because during life the deceased gained a great reputation for his ability to compose chants which upheld the glory of Loto and ridiculed the other two villages, especially Yato. When he died, relatives oriented the grave as if the deceased were still "guarding" the honor of his village against the verbal assaults of Yato. The second grave also lies northeast by southwest, close to the grave of Te Kula and his children. The reason suggested for this orientation was that the deceased, a man named Manglea, was a close friend of Te Kula and wished to be buried next to the chief, but as his lineage gods differed from those of Te Kula, he requested that his relatives bury him facing the direction of the main religious structure of his god, Te Alongaia.

Commemorative gravestones (*mauli ola*) marking the place where a person was accidentally killed (though not buried) are of the usual undressed coral and mark out a rectangular area.

ARCHEOLOGY

Beyond the sinking of a trench across the site of an old religious structure, no opportunities presented themselves for the purposeful excavation of likely

sites. The only sites worth excavating on the atoll were old graves, but the fear of ghosts is so intense that none would allow such excavation for fear of punishment—possible death—by outraged spirits of the dead.

That such excavation, however, might be extremely fruitful is shown by an involuntary excavation that occurred during our stay on the atoll. Yepina, assisted by relatives and friends, was digging the grave for his grandson in a Ngake cemetery. A near-by grave which contained the skeletons of two young girls buried before white contact was unintentionally struck. Talainga, who was assisting, asked one of the men present to go to Yato to call me to see the objects contained in the grave. But Yepina, being in a hurry and feeling that he had committed an act of desecration in so clumsily opening the grave, refused to allow the messenger to leave the place. All the men present concurred, saying they had no wish to be plagued to death by the spirits of the two girls. Before Yepina covered the grave, Talainga was able to make rough sketches of a few of the objects in it and to note down others that he saw.

Among the objects close to the skeletons were one large basaltic adz; several *Tridacna*-shell adzes; many fishhooks including three pearl-shell hooks, two with barbs, the other a plain hook of the *tope* type; several shanks from composite pearl-shell bonito hooks, one with two projections on either side of the distal end of the shank; several pearl-shell points, evidently original parts of the same hooks; many pieces of pearl shell of different shapes which were probably at one time strung together to make the pearl-shell ornament called *nuaa titi ui*.

Talainga suggested when he told me of the incident that there were many more objects in the grave than he could note, so determined was Yepina to repair his error. General opinion was that the two girls must have been favorite children of a sorrowful father, who buried a wealth of objects with the two corpses to show the depth of his sorrows.

WORKING IN WOOD

Implements used by the Pukapukan craftsman for working in wood include the *Tridacna*-shell adz, the drill, a shell awl, a whale tooth or coral rock mallet, shark or ray skin and coral scrapers.

ADZES

Adzes (*toki*) were made of *Tridacna* shell (*ngalipayua*), as shown by Macgregor (20, fig. 13). They were attached directly to the haft (fig. 21). No rotary or movable adz was known.

Basaltic material from which adzes might be made was not available on the atoll. Legends of early canoe voyages relate that returning Pukapukan navigators brought back to the atoll stone from which adzes were made. At any time, the number of these on Pukapuka must have been small, and they gained in value both from their more durable quality as working implements

and from their scarcity. The quadrangular basaltic adz figured by Macgregor (20, fig. 14) was picked up on the outer beach of Wale. It is similar to Samoan type I adzes (27, p. 334) and was perhaps imported from Samoa. A second basaltic adz was seen by Talainga in the old grave unintentionally opened. From Talainga's description and rough sketch this adz appears to be a triangular one, perhaps corresponding in shape to the Samoan type VII or VIII (27, p. 351). It was 10 inches long, the back ground smooth, the front roughly chipped, and the poll rounded. The depth of the bevel was about 2 inches.

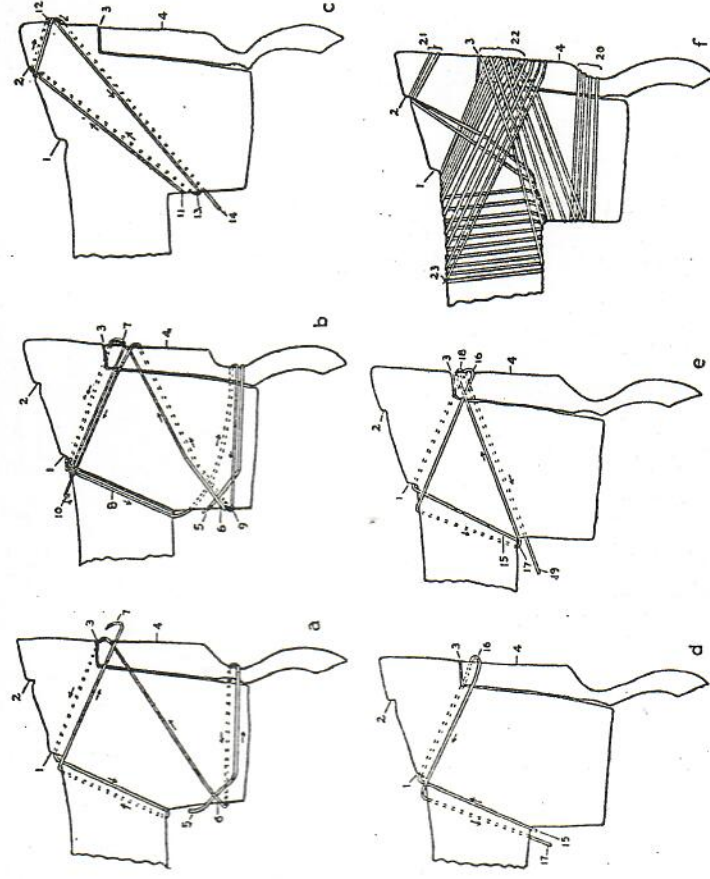


FIGURE 21.—*Tridacna* shell adz (CS105) with haft of *wakanara* wood; length of haft from toe angle to slightly flared butt, 19 inches; haft round in cross section, average diameter being $1\frac{1}{2}$ inches; at heel angle a prominent longitudinal ridge runs up to point of heel; above heel angle (see *a*) is cut a notch (1) to prevent lashing from slipping; $\frac{3}{4}$ inch below point of heel a second notch (2) is cut, also to prevent slipping; $\frac{1}{4}$ inch below point of heel a deep shoulder (3), against which adz (4) fits to avert slipping when in use; because of irregular shape of poll of adz, shoulder is cut transversely on foot, so that distance from heel point on one side is $1\frac{3}{4}$ inches, other side, $2\frac{1}{4}$ inches; lashing material three-ply semit braid $\frac{1}{8}$ inch thick. *a*, lashing commencement; commencement end of semit (5) laid under toe angle, free end passing transversely around near side of toe and back across far side of toe and brought across toe angle to near side; grips commence-

SCRAPERS AND RASPS

Scrapers for smoothing wood were formerly selected pieces of coral (*punga*) with rough surfaces (*talatala*). The smoothing (*ololo*) was done with the wooden object submerged in sea water in order to soften the wood. The first scraping was with the *punga* coral, the finishing scraping with a piece of *kana* coral which has a surface covered with tiny, sharp "teeth".

The use of wood scrapers to which shark or ray skin is lashed is modern in Pukapuka. Informants stated that although shark skin was used formerly for fashioning pearl-shell hooks, the idea of using it for smoothing wood was introduced from Samoa.

WORKING OF SHELL

Mother-of-pearl shell is termed *ui*. Other bivalve shells of about the same size and shape as pearl shell are also termed *ui* with an added adjective, as in *ui pakayau alango*, to distinguish them from true pearl shell. Pearl shell is procured by grasping the shell with the hand and twisting it to break the tentacles. Thick shells were used for composite pearl-shell hooks, thin shell for ornaments and for single-piece shell hooks.



FIGURE 23.—Division of pearl shell; shell file, *a*, shell regionally divided into nine sections by cutting radially from hinge (10) to lip (11); preferred shanks for composite hooks cut from sections 4 to 7, other shanks from sections 1 to 3, 8 and 9; shanks for small composite hooks, single-piece hooks, and shell points for composite hooks cut from lip half of shell; named sections: 1, *tavaa*; 2, *pataava*; 3, *pa ki te vava*; 4, *uyoloto*; 5, 6, 7, *uyoloto*; 8, *iyumoiu*; 9, *okawa*. *b*, shell file (*kawana*) of shark skin (CB037); 1, frame, small branch of *wakanawa* wood with limbs 11 and 9 inches long; 2, 3, ends of limbs pointed and notched; 4, curled shark skin, 9½ inches long, ¼ inch diameter; 5, 6, suspension cords of two-ply twisted sennit, knotted to ends of shark skin, passed transversely around ends of limbs three times and knotted.

The whole pearl shell (*iu ui*) is regionally divided by the Pukapukans into nine named parts (fig. 23, *a*). Radial sections cut through the hinge of the shell along these regional divisions are used for the shanks of bonito trolling hooks; the lip ends of these radial sections are used for small composite hooks and for bonito points.

The shell is cut along the section lines with the turtle-shell cutting implement (*tabu*) or with a similarly shaped implement made from *punga* coral (*taku punga*). The edge of the blade is rubbed back and forward along the division line judged with the eye. A scratch is soon made on the nacreous surface of the shell. By further rubbing along this scratched line and by the addition at frequent intervals of water and sand, if the cutting implement is turtle bone, a narrow groove is formed which is finally deepened until the shell is cut through. A cut section of shell is shaped by rubbing and grinding with coral stone and water. Later the shape of a hook is filed out by the use of the shark skin rasp (*kawana*).

To smooth the outer convex surface of pearl shell, the shell is rubbed on a large piece of *punga* coral placed on the ground in front of the worker. Water is used copiously on the rubbing surface. At intervals the shell is dipped into a bowl of clear water or the surface of the shell is rubbed with the fibrous end of a ripe pandanus leaf to test the sheen and the stage of polishing reached. When the worker is satisfied that he has procured the desired color, he gives the surface of the shell a final polish by rubbing it vigorously with a dry pandanus leaf.

Lashing or suspension holes are made in shell pieces by the use of the pump drill. Informants could suggest no ceremonial used in the manufacture of pearl-shell ornaments or composite hooks.

The shark-skin rasp is prepared as follows:

The skin of a freshly killed fish is submerged in fresh water for about eight days. The skin is pegged out in the sun with wooden pegs until thoroughly dry. It is cut into pieces of suitable length and attached to a forked branch. A piece of skin that is flat longitudinally and transversely is attached to a branch to make the *kawana olo* used for smoothing and polishing fishhook shanks. For the *kawana wanga* which is used to cut out the curves of composite hook points and the bend of a single-piece hook, a piece of shark skin is scraped on the fleshy surface to remove the stiff membranes. This allows the skin to curl transversely and produces a file, round in cross section (fig. 23, *b*).

Shark skin is used for all purposes where a coarse abrasive is needed. The tail of the black ray (*wai kave*), also used as a file in the manufacture of pearl shell, is preferred by some because it lasts longer than shark skin.

CANOE CONSTRUCTION

Two types of canoe are used in Pukapuka today. One, the simple, one-piece, dugout canoe, is used for fishing inside or outside the reef. The other, a plank canoe with washstrakes and bow and stern covers, is used for fishing and for making expeditions to the islets of Ko and Kotawa. Canoe making is a craft still very much alive in Pukapuka and most households possess two or more canoes, one a dugout, the others larger plank canoes.

The single-piece dugout (*poti pukama*) does not seem to be an old style canoe. The only name for it is *poti*, a word probably derived from the English word boat; if this derivation is correct, it is evidence in support of informants' contention that the canoe style is new. Informants suggested that formerly there were not sufficient big trees on the atoll to enable craftsmen to make single-piece canoes. The *poti* in use today is a simple hull balanced by outrigger and two cross booms.

Canoes built on old style models are the small plank canoe (*tatai*) with washstrakes, bow and stern covers; the large plank canoe (*vaka tui tuta*; pl. 5, A) with through and through lashing of the hull and washstrake sections; another large plank canoe (*vaka tui autali*; pl. 5, B) with inside flange lashing of the hull sections; the large double canoe (*taulua*) in which two canoe hulls are lashed together by cross booms. The number of outrigger booms in all types of canoes ranges from two to six, two being common. Multiple booms are used for some large canoes.

There is no origin legend for any of these types of canoe save the bare statement that the first canoes were modeled on the shapes of the whale and a species of shark. A fragment is told, however, which indicates an early consciousness in Pukapuka of the superior workmanship of Samoan canoe builders. Two Samoan craftsmen, Kaviki and Vailaki, came to Pukapuka during a voyage of exploration. During their stay in Pukapuka, they engaged in a competition to see who could build the better canoe after the Pukapukan models. Kaviki made a *tui tuta* canoe, Vailaki a *tui autali* canoe. In both, the hull sections were so closely joined that none could see the seams on the outside of the hull. There is no tradition that the two Samoans affected in any way Pukapukan canoe-building technique.

Preferred woods for canoe building are: *wakanava* and *welau* for hull sections; *puapua* for washstrakes and outrigger cross booms; *pukama* for the outrigger float; *ngangie* for outrigger connecting pegs, diagonal braces, and lifting bars. Most single-piece dugout canoes are built of *pukama* (hence its name, *poi pukama*), with outrigger float of the same wood and connecting pegs of *ngangie* wood.

FIGURE 24.—Medium-sized Pukapukan canoe in Bernice P. Bishop Museum: outrigger detached for storage; lashing together of canoe hull by through-and-through method; metal plates have been added to outside of hull joins to protect sennit lashings from being severed by sharp coral. (Reproduced from Macgregor, 20, fig. 8.)

FIGURE 25.—Six-boom canoe. a, view of starboard side: 1, bow section of hull; 2, middle sections; 3, stern section; 4, washstrake; 5, fore section of bow cover; 6, after section of bow cover; 7, forward wave guard; 8, stern cover; 9, after wave guard and bait deck; 10, stern cover decorative cleat; 11, bar rest for trolling pole, used also as seat; 12, spar below which lifting poles are inserted to carry canoe; 13, stern outrigger boom; 14, bow outrigger boom; 15, secondary outrigger boom made necessary by heavy weight of large outrigger; 16, middle outrigger boom. b, top view: 1, bow cover sections; 2, stern cover; 3, gunwale; 4, wider upper edge of hull; 5, outrigger boom, extending in this large canoe well beyond starboard side; 6, outrigger float; 7, secondary boom running to (8) longitudinal spar; 9, seat with hole for supporting mast, a modern method of support found on only a few canoes; 10, connecting pegs between boom and float; 11, diagonal brace between boom (5) and outrigger connecting pegs (10). Canoe lashed by through-and-through method, used mainly for transporting supplies between Yato, the village of its owner, and Motu Kotawa. (Reproduced from Macgregor, 20, fig. 9.)

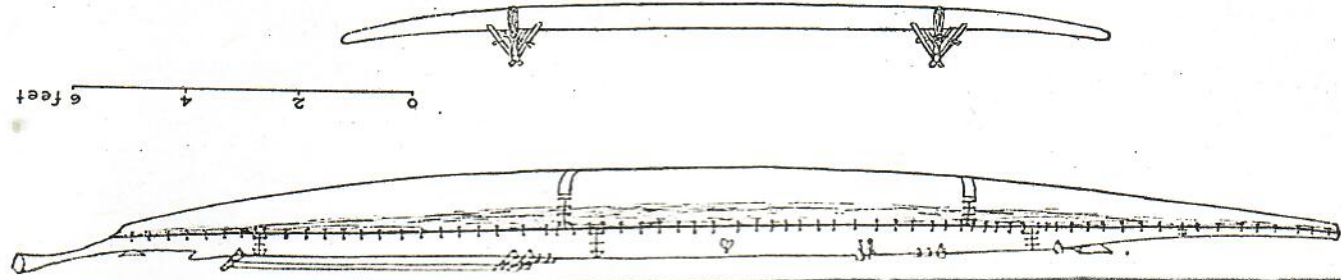


FIGURE 24

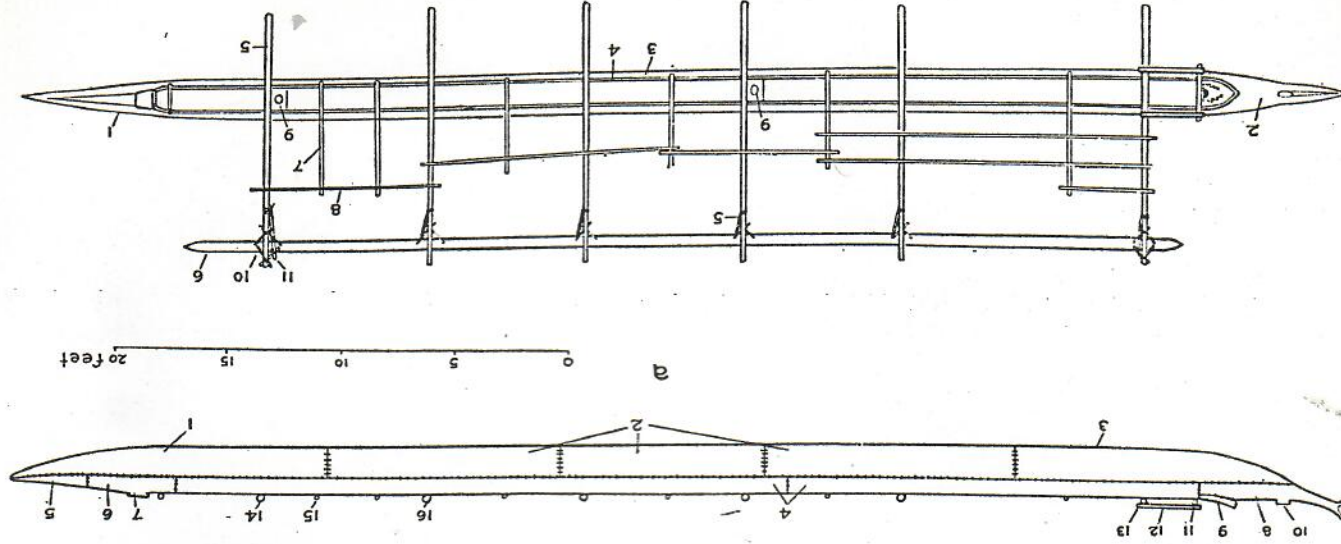


FIGURE 25

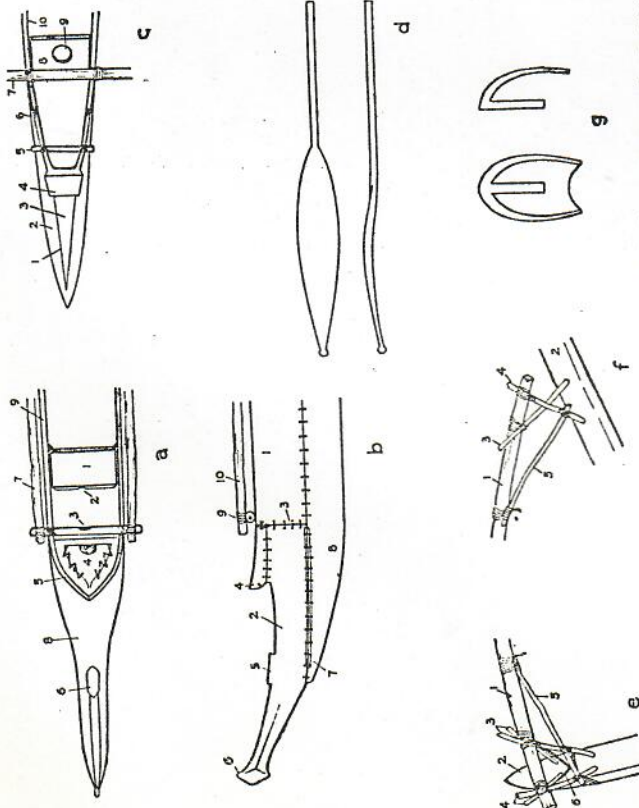


FIGURE 26.—Details of six-boom canoe. *a*, stern, top view: 1, stern seat; 2, groove under after edge of stern seat for holding bonito rod in place, semit grommet in which handle of pole rests not shown; 3, groove cut in aft crossbar against which rod rests; 4, bait deck; 5, stern wave guard; 6, cleat on stern cover; 7, short longitudinal spar; 8, stern cover; 9, gunwale. *b*, view of starboard side: 1, washstrake; 2, stern cover; 3, through-and-through lashed joint of washstrake and stern cover; 4, raised side piece of wave guard lashed to stern cover; 5, cleat; 6, fishtail-shaped stern cover; 7, outer rod caulking over joint between stern cover and (8) after section of hull; 9, bar rest for trolling rod; 10, short longitudinal spar between which and top of washstrake (1) lifting poles are inserted. *c*, bow: 1, fore section of bow cover; 2, aft section of bow cover; 3, lashed joint between fore and after sections not shown; 4, deck of bow cover; 5, wave guard; 6, forward cross lifting bar; 7, bow outrigger boom, lashed across washstrake; 8, bow seat with end of washstrake; 9, bow outrigger boom, lashed across washstrake; 10, washstrake. *d*, canoe paddle (*ava*) of *pukama* wood, face and side view: handle 2 feet 4 inches long, about 1½ inches in diameter; blade 2 feet 7 inches long, greatest width 5½ inches; terminal knob 1¾ inches long, 1 inch thick; weight of paddle 3 pounds; one side of paddle blade convex transversely, slightly concave longitudinally; other side slightly convex longitudinally, flat or faintly concave transversely; distal end of blade with faint mesial transverse ridge which meets two edges (*kaukau*) of blade to produce terminal knob with four sides and blunt point; paddles range in length from 4 feet 8 inches to 5 feet 8 inches, blades 5 to 6 inches wide; size and weight depend on choice and strength of maker. *e*, outrigger boom, end attachment: 1, bow boom; 2, outrigger float; 3, inner pair of connecting pegs, crossed above boom and running obliquely outward to float; 4, outer pair of pegs; 5, diagonal brace between boom and after connecting pegs of inner and outer pairs; 6, suspensory lashing holding float to boom. *f*, middle boom attachments found only on larger canoes such as this six-boom canoe: 1, outrigger boom; 2, outrigger float; 3, inner connecting peg; 4, outer connecting peg; 5, diagonal brace between boom and outer connecting peg. *g*, canoe bailer (*tata*) of *wakanara* wood top view and longitudinal section; handle projects from mesial line of top of back; sides view and longitudinal section; handle meets at back in slight mesial longitudinal ridge which continues along outside bottom of bailer to meet customarily beveled lip (not shown); bailer 14 inches long, 6¾ inches wide, 3 inches deep; lip bevel ¾ inch wide; weight of bailer 2 pounds. (Reproduced from Macgregor, 20, fig. 10.)

The Pukapukan *tui tuta* canoe is shown in figures 24, 25, 26 and plate 5A. The native names for parts of the plank canoe are given in the following list:

Mua vaka: fore section of hull.
 Wuuloto: central section of hull.
 Muli vaka: aft section of hull.
 Oa: washstrakes.
 Yelo: stern cover, shaped like fishtail.
 Lauiau velo: after projection of stern cover.
 Talamoko: raised cleat on stern cover.
 Wakakaavae womu: raised bait deck on stern cover, fashioned from cover or built up with extra wood.
 Tuku: place inside wakakaavae womu where bait and line are laid.
 Kalemū: extreme after point of after section of hull.
 Tala tuki: point of bow.
 Tuki: forward part of bow cover.
 Puka: second section of bow cover.
 Tala puka: wave guard on bow cover.
 Malaē puka: top of wave guard.
 Pu oyo: place covered by bow cover where provisions and fishing gear are stored.
 Kaukau: outrigger cross booms.
 Kaukau mua vaka: forward outrigger boom.
 Kaukau muli vaka: aft outrigger boom.
 Kiato: longitudinal spar supporting cross booms.
 Manu poto: additional short cross booms, supporting kiato and running from strakes to spar.

Ama: outrigger float.
 Mata ama: bow and stern points of outrigger float.
 Tutuki: connecting pegs between outrigger float and cross booms.
 Tutuki tokai: diagonal bracing strut running from inner pair of pegs to boom.
 Oanga: suspensory lashing supporting outrigger float.
 Manu ki mua: forward lifting bar.
 Manu ki muli: stern lifting bar.
 Manu a lua: crossbar aft of after cross boom.
 Palepale langayu: short longitudinal spars lashed on either side of washstrake to lifting bar and cross boom.
 Lakau iki: lifting pole.
 Tuunga iki: semit lifting loops fastened to starboard washstrake just aft of cross booms.
 Yeke: seats formed by cross booms and lifting bars.
 Tau muli: rear seat just forward of rear lifting bar.
 Kaukau katea: starboard side.
 Kaukau ama: port side.

The hull is in three sections lashed together (*tuta*) with three-ply braid which passes through holes (*pu*) bored (*yuki*) through the hull with the shell implement termed *yuki vaka*. A shell borer might be lashed to a wooden holder about 6 inches long, to make the implement called *avaoa*. The point of the shell was held against the wood with the left hand and the wooden holder tapped smartly (*paopao* or *tukituki*) with a mallet of *kaupapa* coral or a whale's tooth (*tukituki paopao vaka*). The point was then worked gently from side to side (*iuēue* or *waikraiki*) to enlarge the hole. Tapping and working from side to side continued until a hole was made through the wood. The *avaoa* was then twisted (*yuki*) and worked back and forth until the hole was of the required size. The lashing forms a crisscross pattern (*lu kava lua*, fig. 27*d*). Washstrakes (*oa*) are added to the hull sections with a single diagonal lashing (*lu kava tai*, fig. 27*a*). Where the *oa* are in several sections, the edges of contiguous

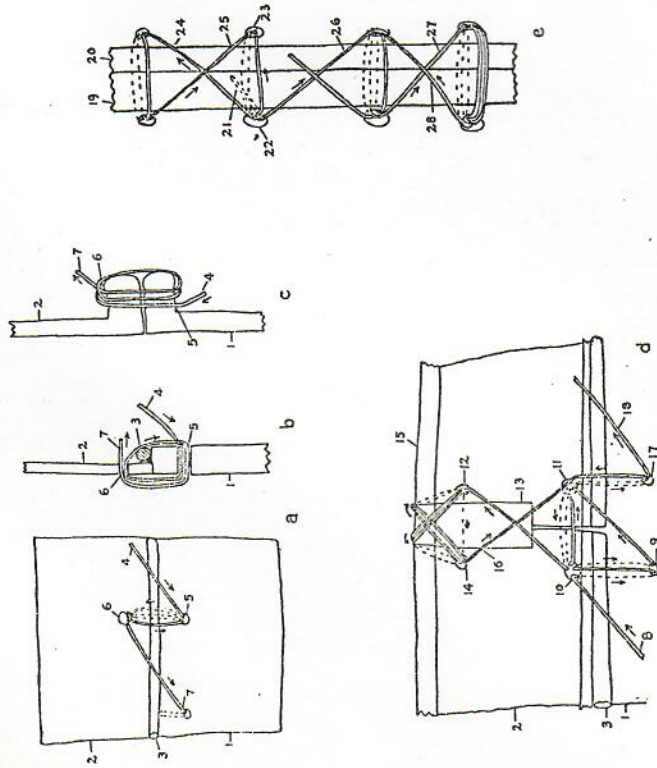


FIGURE 27.—Lashing of washstrake to hull: *a-c*, single diagonal lashing (*tui kavva* *tai*); *d*, double diagonal lashing (*tui kavva* *lua*); *e*, inside flange lashing. *a*, view of single diagonal lashing from hull interior: 1, hull section; 2, washstrake; 3, caulking stick (*taka*) placed against caulking husk material; 4, commencement end of sennit passes from preceding hole down to inferior hole (5), through to hull exterior, and up to superior hole (6), then back through 6 to hull interior, down to inferior hole; makes one more turn and when brought back through superior hole a second time, passes down to inferior hole (7) ready for next turns. *b*, cross section of same lashing on *tui tui* canoe (through-and-through lashing): sennit (4) makes two transverse turns through inferior and superior holes (5, 6), securely binding washstrake (2), hull (1), and caulking material (3); 7, free end ready to pass to next inferior hole. *c*, cross section of same lashing on inside flange canoe (*tui au* *tai*): lashing (4) makes two transverse turns through holes (5) in hull and (6) in washstrake, and free end (7) passes to next pair of holes. *d*, lashing of contiguous sections of washstrakes by double diagonal lashing: commencement end of sennit (8) makes two transverse turns through holes 10 and 9 of washstrake and hull; free end passes to inferior hole (11) in contiguous washstrake section; one transverse turn made between holes 11 and 10, and on second turn sennit passes on outside of canoe, through to inside at hole 10 and diagonally up to superior right hole (12), securely gripping pandanus material (13) which is laid over join of washstrake sections as caulking; sennit passes through hole 12 and along on outside of washstrake to hole 14, back through 14 and diagonally up and over edge of washstrake (15); sennit continues down on outside of washstrake to hole 12, through to inside and diagonally up, over washstrake edge, down to and through hole 14; two more diagonal cross turns made over washstrake edge and free end of sennit brought back and through hole 14 to inside of washstrake; sennit (16) continues diagonally down and across to hole 11, passes through 11 and makes two transverse turns around hull and washstrake between holes 11 and 17; free end (18) passes up to next pair of holes

sections are lashed by the *tui kavva lua* lashing (fig. 27*d*). Caulking material of dried coconut husk (*pulu pae*) is hammered into the joins of hull sections with a cone-shaped wooden caulker (*monomono*). The lower edge of the washstrake is set on the upper edge of the hull, flush with its outer surface. Sennit (*kavva malo titi*) or coconut husk fiber is laid on the inner edge of the hull; on top of this caulking material is laid a filler stick (*taka*). The lashing of strake to hull holds the caulking securely in place (fig. 27*b*). The holes through which the lashing passes are caulked with coconut husk or wooden plugs hammered in from the outside with a rectangular-shaped wooden caulker (*miti*). These plugs keep the lashing tight and prevent leakage and rotting of the lashing. The raised bait deck, which is fashioned from the stern cover or else built up with extra wood is shown in figure 28*a*. The stern cover is lashed to the hull by through and through lashings (*tui kavva tai*) and caulked on the outside by filler sticks (*yukiyuki*). The two-piece bow cover is lashed to the forward section of the hull by through and through lashings.

The outrigger is attached to the canoe by cross booms lashed to washstrakes with the common alternating curves lashing which passes over the booms and through holes bored in the strakes. The longitudinal spar is also lashed to cross booms with the alternating curves lashing. The outrigger is fastened to cross booms by connecting pegs (*tutuki*). Bow and stern cross booms are connected by four pegs; additional cross booms by two pegs. The points of the pegs are driven into the outrigger, but not lashed to it. The lashing of pegs to cross booms is shown in figures 26*e,f*, and 28*b*. A diagonal bracing strut (*tutuki tokai*) runs from the inner pair of pegs to the boom. The attachment of this strut to pegs and boom is shown in figure 28*c*. A suspensory lashing (*oanga*) supports the outrigger and prevents it from separating from the pegs when the canoe is lifted. This lashing is shown in figure 29. The forward cross boom is shorter than the after cross boom. This enables the outrigger float to be fixed so that the fore end of the float is nearer the canoe hull than the after end (see measurements, p. 184), an arrangement which makes the canoe easier to steer.

The fore lifting bar is lashed across the washstrakes forward of the forward cross boom. A stern lifting attachment is made by fastening a lifting bar across the strakes just forward of the rear bait deck. Short longitudinal spars are lashed on either side of the washstrake to the second cross bar and cross boom (fig. 30*a*). To lift the canoe, lifting poles are thrust between these spars and the washstrakes from the starboard side and the canoe is lifted by upward pressure on the lifting pole. In large canoes, a lifting pole is also thrust through the lifting loop (fig. 30*b*) and when the weight is taken, the distal end of the lifting pole rests on the port side of the washstrake. All Pukapukan canoes have an extension fore and aft of the *kiato* spar beyond the fore and aft cross booms, which is a certain nuisance in paddling on the port side of the canoe because the paddle, in being raised from the water, often strikes against this extension. However, to take a canoe through shallow water over the reef, the crew wades and drags or

to continue single diagonal lashing of washstrake to hull as shown in *a*, *e*, inside flange lashing of hull sections in *tui au tali* canoe: 19 and 20 represent contiguous raised flanges of contiguous hull sections; 21, buried commencement end of sennit on outside of hull; sennit makes one transverse turn through holes 22 and 23, then passes diagonally up (24) to superior pair of holes; makes transverse turns through holes and passes diagonally down (25) to hole 23, makes one turn through holes 23 and 22, again binding commencement end (21); sennit passes diagonally down (26) to next pair of flange holes in hull, makes one turn through holes, passes (27) to next pair; two transverse turns made through lowest pair of holes and sennit brought back to pass diagonally upward (28) to next pair of holes, makes turn through holes, passes diagonally up to next pair; free end passes into hole 23, where it fastens by hammering of caulking wood into flange hole on top of free end.

pushes the canoe, using the washstrakes and spar extension as shafts. The man in front stands between the side of the canoe and the spar extension, grasping the washstrake with his right hand and the *kiato* extension with his left. Similarly the man in the rear stands and pushes the canoe before him.

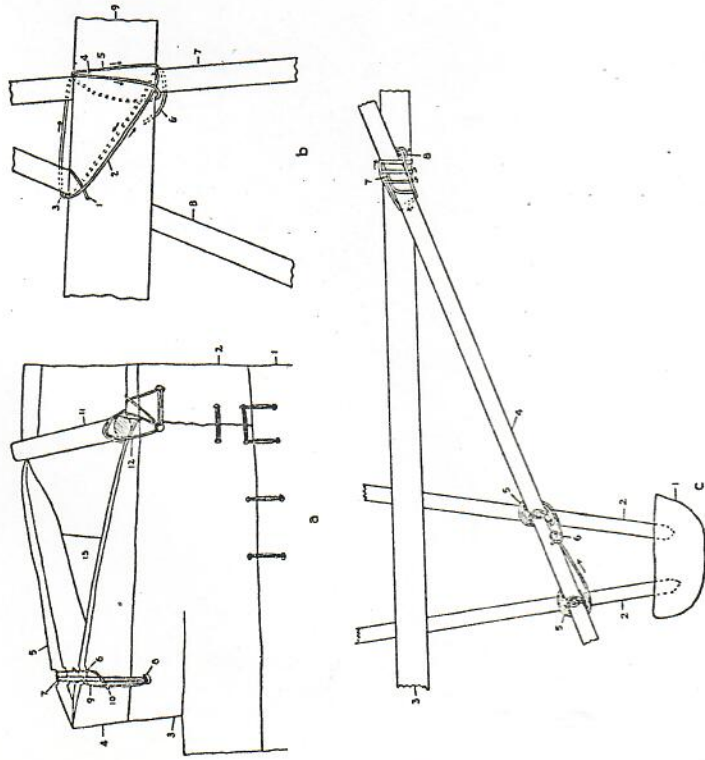


FIGURE 28.—Canoe construction. *a*, two-piece stern bait deck; 1, stern hull section; 2, washstrake; 3, section of stern cover (*velo*); 4, 5, fitted sections of wood placed on top of forward end of stern cover and lashed to cover by sennit which passes over notches 6 and 7 cut on edge of extra sections, and through hole 8, bored through head of stern cover; lashing consists of buried commencement (9), several transverse turns over notches and through hole, and buried finishing end (10); forward ends of added sections continued under first crossbar (11) lashed to washstrake; 13, platform of bait deck (12) securely binds in place added sections of connecting pegs to outrigger boom; diagram shows inner pair of pegs (7, 8) and outrigger boom (9); 1, buried lashing commencement; sennit passes around far side of inner peg (8), then diagonally down (2) and across boom to near side of outer peg; continues around far side of peg, then diagonally up and across far side of boom and around far side (3) of inner peg; continues across far side of boom, around far side of outer peg and down (4) near side of outer peg, passing over earlier turn; continues underneath and up far side of boom, down (5) again on near side of boom, underneath outer boom, then ready to pass diagonally up on far side of boom across to top of inner peg (8); lashing continues with 6 figure-of-eight turns around connecting pegs and boom, then two circumferential turns around connecting pegs superior to boom; actual connecting pegs brought close together above boom so that thick sennit must be forced between pegs for two circumferential turns, and closeness of pegs holds turns tight; free end of sennit passes along boom to outer pair

of connecting pegs and repeats lashing; free end passes down outer connecting peg to commence suspensory lashing around float shown in figure 29. *c*, lashing of diagonal brace (*tutuki tokat*) to connecting pegs and cross boom of outrigger: 1, cross section of outrigger float into which connecting pegs (2) are driven; 3, outrigger boom; 4, diagonal brace lashed to connecting pegs by alternating curves pattern lashing (5); lashing has buried commencement on outer peg; after completing lashing of outer peg, free end of sennit continues to inner peg, completes similar lashing; free end (6) fastened by double overhand knot to sennit that came from outer peg; lashing of diagonal brace to outrigger boom has buried commencement (7); free end of cord makes three or more transverse turns around boom, then one or more circumferential turns around lashing turns between boom and float and finishes with overhand knot on last circumferential turn (8).

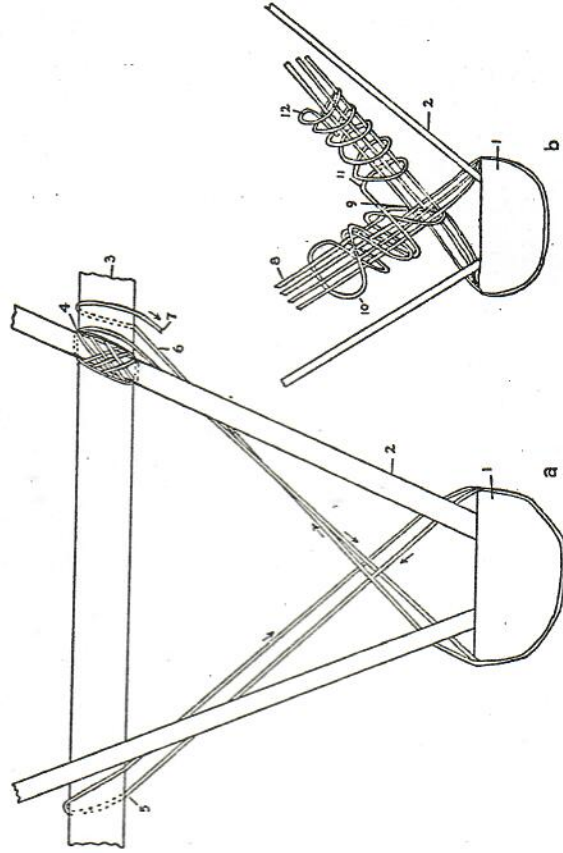


FIGURE 29.—Suspensory canoe lashing. *a*, commencement of lashing between outrigger boom and outrigger float: 1, outrigger float in cross section; 2, connecting peg between float and cross boom (3); when lashing (4) of outer connecting peg to cross boom is finished free end of sennit brought down between double pair of pegs (only outer pair shown in diagram) to inner side of float, passes around under float, up on outside of float and across to boom at 5, on hull side of inner peg; turn made over boom, and sennit brought down to outer side of float, around float, and up on inner side (6) to boom, making turn around boom on outer side of outer peg; sennit (7) continues down to float as before, making altogether five turns around boom and float (two turns only shown in diagram). *b*, continuation of suspensory lashing: after fifth turn (fourth in diagram), free end of sennit (8) brought down from hull side of inner connecting peg to pass around and under crossing of suspensory lashing (9) and continues up left hand suspension with two transverse turns; a complete final turn made around suspension, and sennit (10) brought back down suspension with two more transverse turns, continuing across to right hand suspension (11); five transverse turns made around right hand suspension with buried end finish (12).

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Flaws in the wood from which hull or strakes are made are cut out and in their place small sections of wood (*tapiki*) or larger sections (*wakakaukau*) are fitted in by hammering and lashed if necessary to the surrounding hull or washstrake wood. Where the washstrake wood is not sufficiently deep, additional sections (*wakapahi tai*) are lashed with through and through lashing to the washstrake base until the required depth is attained. Small cylindrical plugs of wood (*tapiki* or *mono*) are hammered into small knot or flaw holes in the outrigger float to keep the salt water from lodging in them and rotting the wood.

When surfaces are being fitted together, whether hull sections, or washstrakes to hull, or small patch sections to hull or strakes, the parts to be joined are smeared with a marking material of coconut-shell charcoal mixed with water and applied with a brush made of the chewed fibrous material of the pandanus key. Irregularities in the fitting of the parts are brought out by black marks. These irregularities are then adzed down until a perfect fit (*are* or *tomoemoe*) is secured.

In canoes used in bonito trolling, the rear seat is made of a block of wood which is lashed on either side with through and through lashings to each washstrake. A flange is cut on the under aft side of this seat and a semit grommet (*matapili*) is lashed to the seat in the middle of this flange. The butt holder (*tukau*) of the bonito pole (*matila atu*) rests in this grommet and the pole rests in a groove cut in the after lifting bar.

The size of a canoe is indicated by the number of seats (*yeke*) it contains. But a *vaka yeke wa* (four-seater canoe) holds only three men comfortably; a *vaka yeke lima* (five-seater canoe) holds four men comfortably or five men if the hull is especially wide; a *vaka yeke ono* (six-seater canoe) holds six men. From this number of seats upward, the number of crew becomes greater than the formal seating capacity, so that a 60-foot canoe, officially rated as a *vaka yeke tangauu ma tolu* (thirteen seater), easily holds 30 or more men. Those that cannot be accommodated with formal seats rest on the edges of the strakes. The size in feet of the various canoes is given below (p. 185).

The hull of the *tatai* plank canoe is of one piece in very small one-man canoes or of three pieces in larger canoes. The hull sections are as before, *nua vaka*, *venaloto*, *nuli vaka*. Washstrakes are added and a simple bow cover (*pupuni ki nua*) and a stern cover (*pupuni ki nuli*). These covers are shaped pieces of wood lashed to hull and to washstrakes (fig. 30, c). Very rarely, a small canoe of this type is fitted with the shaped stern piece (*ewlo*) and the type bow covers (*tuki* and *puka*). Outrigger support consists of two cross booms, connecting pegs, and suspensory lashing. The *tatai* canoe differs from the simple one-piece dugout in the addition to the hull of washstrakes and stern and bow covers. The size of typical *tatai* canoes is given below.

The plank canoe termed *vaka tui autali* (pl. 5, B) is distinguished from the through and through lashed canoe (*vaka tui tuta*) by the lashing of hull sections to each other, and of washstrakes to hull, and washstrake sections to each other by means of raised inside flanges (*konga wakaitike* or *konga tui autali*). These flanges are about 2 inches high and the lashing is through

holes drilled through each flange (fig. 27, c, e). No lashing shows on the outside of the hull. This lashing method may be applied to plank canoes of all sizes from the simple *tatai* canoe to the largest canoe.

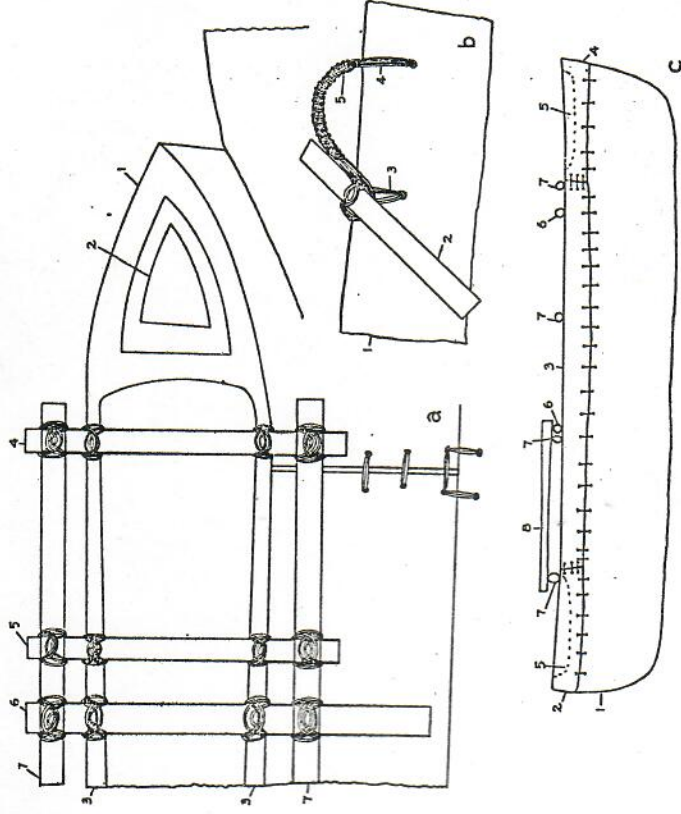


FIGURE 30.—Plank canoe. a, arrangement of lifting bars at stern of canoe: 1, raised bait deck (*wakakauwae womu*); 2, bait receptacle (*tiku pakupaku*); 3, washstrakes of canoe; 4, cross lifting bar (*nani ki nuli*); 5, second cross bar (*nani a lua*); 6, cross boom supporting outrigger float; 7, longitudinal members (*palepale tangayu*) lashed to cross members; lashings all of alternating curves pattern. b, lifting loops of semit (*tuinga iki*): 1, section of washstrake; 2, cross boom; 3, lashing of boom to strake; 4, four turns of semit made through hole in strake and around lashing of boom to strake; 5, seizing of these four turns, buried commencement and finish. c, *tatai* canoe: 1, one-piece hull; 2, stern cover (*pupuni ki nuli*); 3, washstrake; 4, bow cover (*pupuni ki nua*); 5, dotted lines show lowered bait decks in covers; 6, cross booms to outrigger float; 7, short lifting bars; 8, short longitudinal spars (*palepale tangayu*) forming lifting supports for stern of canoe.

The *tui autali* canoe has definite advantages for reef work over the through and through lashed canoe because of the absence on the outside of the hull of lashings to be cut by sharp coral heads. It has this disadvantage, however, that the water seeps in through the hull joins and rots the wood about the joins of the hull sections. This seepage cannot be prevented by caulking as with the *vaka tui tuta* lashing. If a canoe is used much, the wood

about the hull joints is seldom dry, and after about 10 years the wood becomes so rotten that the flanges break apart. The only remedy is to take the canoe apart, adz off the rotten sections of wood, and rejoin the canoe as a *vaka tui tuta*. The sennit lashing of the *vaka tui tuta* lasts about seven years before it rots. It is easily replaced if care has been taken of the canoe and the wood round the joints has not become rotten through unsuspected water seepage.

The customary Pukapukan canoe for deep-sea fishing or voyaging was the single outrigger canoe. At various times, however, the double canoe (*tau'ua*) was made and used, particularly for regular fishing trips to Tima Reef. A time is remembered when three double canoes were in commission on the atoll. Tradition seems to indicate that the art of making double canoes was introduced by returning Pukapukan navigators. The chief Wue (who lived about 14 generations ago) is reputed by some to have been the first man to build a double canoe in Pukapuka; he modeled it after one he had seen in his travels abroad. Lack of sufficiently large timber is given as the reason why few double canoes were built. No informant had seen a Pukapukan double canoe. The following brief description is based on traditional information only:

The larger of the two canoes was to leeward and carried the two masts. The smaller canoe acted as an outrigger and was to windward. Cross booms (*kaukau*) joining the two canoes were probably logs of pandanus, three booms being necessary to provide a stable support. Both canoes were completely decked with logs of *puapua* wood, save for holes or hatchways that served as bailing cockpits and gave entrance to stores and fishing gear loaded inside the hull of the windward canoe. Diagonal cross braces from the stern and bow of each canoe to the fore and aft cross booms were termed *tokai*. A platform (*papanga tau'ua*) laid across the booms was occupied by the crew and passengers who also used the leeward canoe for shelter. On one part of the platform was placed a small house which functioned as a god house (*vale a'ua*). No details are preserved of lashings or sizes of these double canoes. But it is likely that the reason the single outrigger was the preferred canoe is that it could be made more seaworthy because the outrigger could be more strongly lashed to the hull than on the big and unwieldy double canoe. The double canoe was steered by two or three steering paddles, one man steering from one canoe and the second man from the platform between the canoes. Should a sudden turn be desired, the two steersmen were reinforced by a third who assisted from the stern of the second canoe.

To change the direction of any canoe is *wuli* or *wuwuli*. The change of direction is to starboard (*ki katea*) or to port (*ki ama*). The bowman calls out the direction of change thus: *La ama!* or *La katea!* When the required direction is defined, he calls out: *Tarwi ai!* (Hold it now!)

Variations on the fundamental construction pattern of the Pukapukan canoe are few:

In one single-piece dugout canoe, rather large for its type, greater stability was given to the two outrigger cross booms by projecting the ends of these booms about 18 inches beyond the starboard side of the hull and lashing to these ends a longitudinal

spar parallel to the customary longitudinal spar (*hiato*) lashed to the cross booms on the port side of the canoe. Informants also mentioned that formerly a big canoe made for fishing off the grounds by Tima Reef was fitted with two stern pieces (*velo*). The *velo* was cut from a single wide block of wood and two fish-tail ends were adzed out instead of one. This variation was characterized as a type of decoration (*wakamane*) without utilitarian function.

One canoe in active use had attached to the hull only half of the customary two-piece bow cover. The fore part of the bow, usually covered by the *tuki*, was open, but the after part of the cover, the *puka*, complete with wave guard (*malae puka*), was securely lashed to the hull. Informants remarked that this was an idiosyncrasy of the builder of the canoe. He had been faced by a shortage of wood during construction some years previously and had not since bothered to complete his canoe, but was on the contrary rather proud of its odd appearance.

SAILS

Two types of sail, both said to be old, are in use today when canoes sail to the islets. The first is a triangular sail, *la mata keokeo* (*keokeo*, pointed); the second, a gaff sail, *la hiaki a Te Palo*, named after the Yayake navigator who visited Pukapuka. Both types of sail were formerly made of pandanus (*lau wiu*) plaited in single element check (*langa tai*). The sail was made large enough to allow for an overlap which is basted over the sennit becket rope (*wuwui ki loto o te la*) by which the sail is supported on the mast. (See figs. 31, 32.) The basting was done (*tui*) with pandanus material (*tua kie*) through holes made with a bone of the *akula* fish or a piece of *ngangie* wood. Sheets (*tupotupu*) of two-ply twisted sennit are fastened to the becket ropes by overhand knots.

Formerly the mast (*tila tu*) was made in two parts: a crotch (*vae manga*) was lashed to the mast pole (fig. 31, b). The mast was raised by resting the crotch end on the forward cross boom (*kaukau ki mua*). Several turns of sennit were made around the boom to prevent the crotch from slipping sideways. Stays (*tuki*) supporting the mast are shown in figure 31, c.

The sail is supported by the top of the mast in one of three ways: the guy (*wuwui*) by which the sail is hauled aloft may be passed through a hole (*pu*) bored through the top of the mast; the guy may be passed over a natural branch cleft (*vae manga* or *kekeo*) at the top of the mast and passed down to the canoe; the becket (*pu*) in the peak of the sail may be passed over the top of the mast before the mast is raised—the mast is thick enough at this end to prevent the becket from slipping down. The last method is used only in small canoes. In all three methods when the sail is aloft the guy is fastened to the port side of the forward outrigger boom.

Today, the mast is usually long enough to rest against the bottom of the canoe. It is lashed to the forward cross boom with figure-of-eight turns of heavy sennit, or else the stay passing from masthead to forward lifting bar is continued back to the cross boom to make several turns around both mast and cross boom. Ultra-modern Pukapukan sailors step the mast in cup-shaped blocks cut out from the floor of the hull, or else lash to the washstrakes planks with holes in them through which the mast is stepped.

The sail is further supported by a horizontal boom (*tila lalo*) with a crotch at one end, resting against the bottom of the mast just above the lashing of mast to cross boom. The other end of the boom (*ulu tila lalo*) is fastened to the sail by a becket. A main sheet (*vareva*) of sennit is fastened by a clove hitch to the boom from which it runs to

the hand of the sailor. When the canoe is sailing before a steady wind, the main sheet is fastened to a cross boom or lifting bar, or else it is gripped underneath the foot of the sailer.

At the inner, lower end of the sail the becket rope passes from the sail and is now termed *muli la*. It is fastened to the forward cross boom, or else its two ends are tied into a loop which is slipped over the crotch of the boom. Either method keeps the inner, lower end of the sail from belying loose in a high wind.

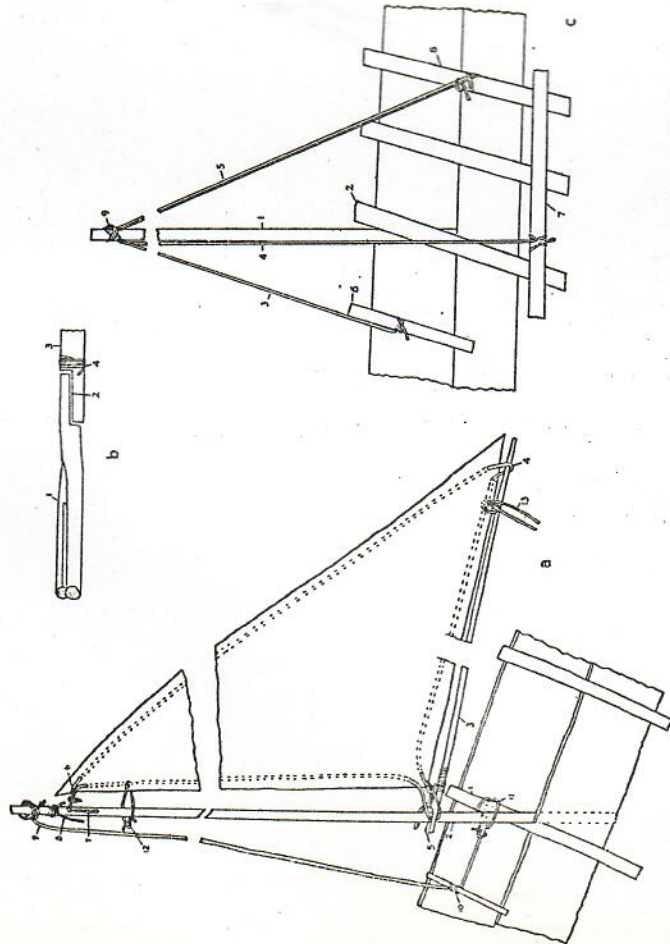


FIGURE 31.—Construction of mast and sail. *a*, mast and triangular sail (*la mata keokea*): 1, cross boom; 2, mast; 3, boom with crotch end resting against mast; 4, outer becket, hooked over end of boom; 5, inner becket semmit ends, fastened with overhand knot in loop which passes over end of crotch to keep sail taut; 6, peak becket, fastened to guy by overhand knot; 7, guy passes through hole in mast and down to cross boom where it fastens; 8, mast stays passing to after booms as shown in *c* below; third mast stay (9) passes down to forward lifting bar, makes two turns (10) around bar and passes again to cross boom to make two turns (11) around boom and mast, holding mast in place against boom; overhand knot finishes turns; 12, sheet, fastened to becket semmit and to mast by overhand knot; 13, main sheet, fastened to becket semmit by overhand knot and passes to canoe aft. *b*, attachment of crotch (*vae mang'a*) to mast spar: crotch (1) scarfed and fits against scarf (2) cut in mast spar (3); commencement of transverse lashing turns (4) which bind crotch and mast at scarf joint. *c*, staying of canoe mast: 1, mast stands inside of canoe, lashed to cross boom (2) (lashing not figured); 3, 4, 5, stays fastened to top of mast by clove hitch (9); 3, forward stay fastened to forward cross lifting bar (6); 4, stay fastened to longitudinal spar (7) aft of cross boom; 5, stay fastened to middle cross boom (8) at washstrake; stays fastened to booms by clove hitches; weight of sail, filled by wind, provides counter-balance on starboard side of canoe to port side pull of stays.

In a heavy wind, the mast of a triangular sail is kept vertical. To catch the greatest amount of moderate or light wind, it is heeled over to an angle of about 30 degrees with the vertical. The boom runs from the mast at an angle of about 60 degrees, and the sail functions thus with its base upward and the apex down. This is the usual way of mounting the triangular sail.

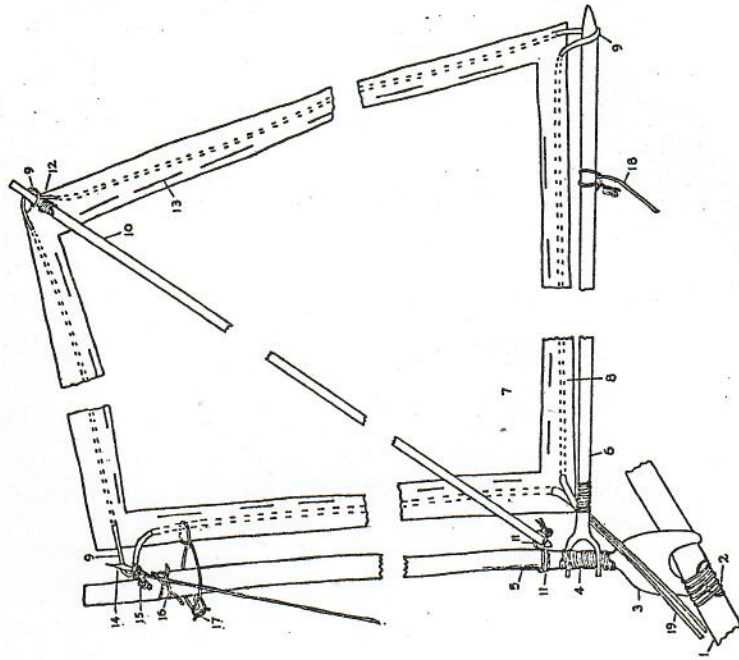


FIGURE 32.—Mast and gaff sail (*la itaki a Te Palo*): 1, cross boom to outrigger, on which crotch (*vae mang'a*) (3) of mast (5) rests; 2, lashing on crossbar to prevent mast from slipping; 4, lashing binding crotch to mast spar (5); 6, boom with crotch resting against mast; 7, gaff sail; 8, becket semmit basted into overlap of sail; 9, becket which pass over end of supporting spars and keep sail taut; 10, sprit or gaff which extends outer peak of sail, resting at lower end in snooter (11) of semmit made by taking clove hitch around mast and tying free ends of semmit in overhand knot; at upper end of sprit, becket prevented from sliding down spar by lashing turns (12) taken around end of sprit; 13, heavy lines indicate sewing of overlap to hold becket semmit; 14, natural branch cleft (*vae mang'a*), over which becket loops when sail is hauled up by means of guy (15) fastened to becket by clove hitch; 16, stays run to booms to support mast (see fig. 31, *c*); 17, sheet fastened to becket semmit with overhand knot and looped around mast with double overhand knot; only one sheet shown, but average sail has about six sheets for mast and for boom; 18, main sheet, fastened to boom by clove hitch, runs to sailor seated aft in canoe; 19, two ends of becket semmit (*muli la*) pass to, and are fastened around, cross boom (1).

An extra sail support is needed with the gaff sail (fig. 32). This sprit is termed *toko*. At the lower end it rests in a snotter (*wakomanaga no te toko*) fastened to the mast. In a strong wind blowing directly aft, the gaff sail is supported by a further stay that runs from the head of the sprit to the stern cross lifting bar, occasionally to the curve of the stern piece around which it is fastened.

For a one-man canoe for sailing to the islets, a rough-and-ready sail is made from a coconut-leaf mat (*takapanu*). A pole is stepped in the canoe and lashed to the forward cross boom. The midrib side of the mat is fastened to the pole with sheets of coconut fiber (*kalawa*) and the outer edges of the mat stayed by guys passing to the hand of the sailor who sits in the stern of the canoe and steers. A *takapanu* mat catches ample wind to speed along a small canoe.

The mast of any Pukapukan canoe is mounted at either end of the canoe, the outrigger being invariably kept to windward. The canoe can not tack without unshipping the mast and setting it up at the other end of the canoe. Sailing fast (*kalali* or *yolo*) in a heavy wind, some members of the crew rest their weight on the outrigger cross booms in order to counterbalance any tendency of the outrigger to lift out of the water. Under sail a Pukapukan canoe lies close to the wind, but tends to make rapid leeway for want of a keel.

PADDLE AND BAILER

The Pukapukan paddle (*woe*, fig. 26*d*) has a projecting knob (*mata*) at the distal end of the blade. This knob has a dual function. It protects the blade (*laukau woe*) when the canoe is being poled over lagoon shallows, and, when the paddle is brought from the water with a sharp wrench after a short jab stroke, the knob makes, in contact with the water, a short, sharp, ringing sound (*hoā tangi te woe*), used to attract fish to the fishing canoes. It is a very characteristic sound in Pukapukan paddling, and whenever it is necessary to imitate a canoe in May Day play festivals, a file of men walk about making this sound with their lips, at the same time raising and lowering their arms.

The paddle is used on both port and starboard sides of the canoe. The outrigger does not offer great impediment to the typical short, jabbing strokes of the Pukapukan paddler. Any paddle is used indifferently for steering and paddling. Formerly the paddle was always held with the back (*tua*) turned toward the rear of the canoe. This usage (*alo tua*) is reserved today for short spurts and for making the paddle resound, the front (*aloalo* or *vaherabe*) of the paddle being now customarily directed toward the rear.

Each canoe has as part of its equipment a long pole (*toko*) used for poling the canoe over reef shallows. Some canoes returning to Wale from Motu Ko lug the reel circuit and make good speed with two people poling, one in the bow and one in the stern. The bailer (*tata*, fig. 26*g*) is of common Polynesian type. It is not decorated with carving. In use, the bailer is not filled, lifted, and emptied over the side of the canoe, but water is gathered from the bottom of the hull and shot out with one vigorous and continuous scoop. In small canoes, an empty coconut shell serves as a bailer.

MEASUREMENTS

The principal measurements of seven Pukapukan canoes are given in Table 3. These measurements may be compared with those of the 13-seater canoe shown in figure 25.

The amount by which the forward end of the outrigger float is set to starboard to assist the steering qualities of the canoe ranges in the canoes measured from 2 to 6 inches, with an average of about 3½ inches. Pukapukan canoe builders gave no rule

for judging this amount, but said that they judged by the eye. Kennedy discovered from a study of canoes of Vaitupu that the "limiting amount by which the forward end of the float is set to starboard is about one hand's breadth from a line through the after end of the float parallel with the hull" (19, p. 94); this amount agrees closely with the Pukapukan average for this starboard set, though there seems to be little correlation between the size of the canoe and the amount of starboard set considered necessary. The required balance weight of the float seems to be obtained almost entirely by lengthening the float, for the width and depth of the float do not vary greatly save for the larger canoes. The length of the float in relation to the overall length of the canoe indicates that the Pukapukan builders unconsciously judged the float length by some such rule as Kennedy (19, p. 79) gives for Vaitupu where the outrigger is given a length such that the forward end will be laterally opposite the feet of the bow paddler and the after end opposite the feet of the rear-most paddler. Again, Pukapukan builders could give no rule for judging the proper length of the outrigger float save an eye judgment.

Table 3. Canoe Measurements

Type	1 Overall Length	2 Beam (Gunnwales)	3 Beam (Hull)	4 Depth (Center Canoe)	5 Length, Forward Cross Hook	6 Forward Cross Room, Hull to Outrigger	7 Rear Cross Room, Hull to Outrigger	8 Length, Longitudinal Gear	9 Length, Outrigger Float	10 Width, Depth, Outrigger Section	11 Length, Stern Piece (Tip to Gunnwale Join)	12 Length, Bow Piece (Tip to Gunnwale Join)
Single dugout (large)	16'	14"	14"	16"	7'5"	6'3"	6'7"	9'10"	12'	5½"×4½"	---	---
Tatai tokatai two-man canoe	10'	10"	8"	17"	5'5"	4'7"	4'9"	6'4"	7'8"	5"×3"	---	---
Tatai tokalia two-man canoe	19'	11"	9"	16"	6'6"	5'7"	5'10"	9'	13'3"	6"×4"	4'3"	3'9"
Yeke tolu 3-seater	16'6"	11"	7"	15½"	5'6"	4'10"	5'	9'6"	12'	5"×3½"	3'6"	3'7"
Yeke wa 4-seater	21'11"	14"	11"	18"	6'6"	4'8"	5'1"	10'4"	16'4"	5½"×4"	3'11"	3'4"
Yeke ono 3-seater	35'6"	15"	11"	20"	8'1"	5'10"	5'10"	18'	22'6"	7"×6"	5'2"	6'7"
Yeke iva 3-seater	51'	22"	14"	27"	8'8"	7'8"	8'2"	27'6"	32'8"	7"×7"	---	---

FISHING EQUIPMENT

Besides fishnets (p. 208) and hooks (p. 191), fishing equipment includes lines, fishing rods, composite fishing apparatus, clubs, fish spears, and hook containers.

FISHLINES

Lines of *wao* fiber are used on composite pearl-shell fishhooks where quality rather than length of line is important. Three-ply braided sennit

lines are used for deep-sea fishing where both length and strength are desirable. These are made in three lengths, each from 50 to 75 fathoms long. The three lengths, called respectively *karava lalo*, *karava loto*, *karava lunga* (sen- nit bottom, middle, top), are tied together with prominent knots. In paying out his line the fisherman feels the knots as the line runs through his hands to gauge the depth at which he is fishing, and is then able to fish at the depth at which he believes the particular fish bite best. Anchor lines of thick three-ply sennit braid are in continual use for deep-sea fishing. For tiny fish such as *Iurpo* a line of single pieces of coconut fiber is used with a gorge of pandanus spine.

One such line (C8043) wound round a wooden holder consists of 34 lengths of coconut fiber, each about 10 inches long, knotted together; the line is finished with one length of very fine two-ply twisted *wao* and a snood of the finest single ply twisted *wao*, total length being 32 feet.

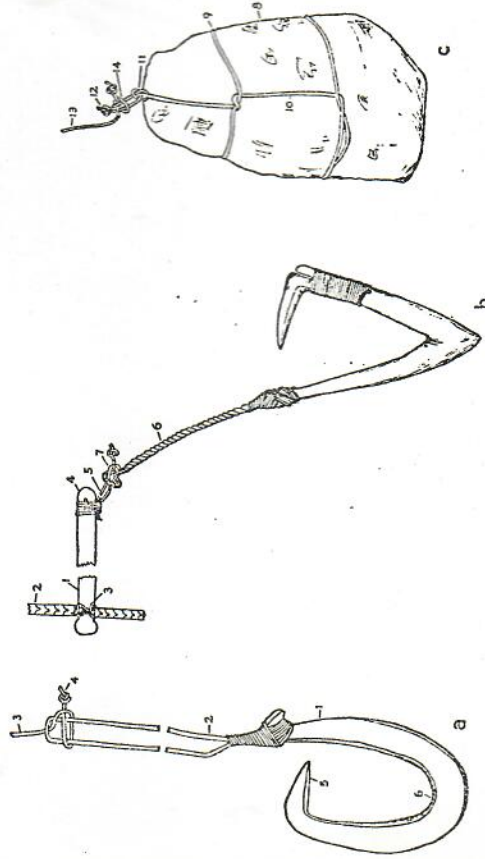


FIGURE 33.—Fishing equipment. *a*, attachment of double snood to fishline (shown diagrammatically); looped double snood (2) lashed to shank of coconut-shell fishhook (1) with descending figure-of-eight turns; end of fishline (3) knotted (4); free end passes around loop and back on far side of loop, then over near side, through top of loop and pulls tight. Coconut-shell hook (*tope nigaihu*) (C8186) 3 3/4 inches high, 1 5/8 inches in greatest width with point-shank clearance of 3/4 inch; bend 3/8 inch wide, 3/16 inch thick; inner edges of point (5), bend (6), and shank (1) beveled slightly. *b*, composite fishing apparatus (*taunakomaho*) (C8190); spreader stick (1) attached to secondary snood (2); snood lashed with diagonal turns (3) of fine *wao*; at distal end of stick (4), short piece of *wao* (5) doubled and lashed to stick with transverse turns; snood (6) of hook is knotted to doubled *wao* (7); wooden hook (*kau*) small with scarf joint accentuated. *c*, sinker for apparatus: sinker (8) block of coral (*huuga*); one end of anchor line (9) makes two transverse turns around sinker, other end (10) caught by turns; at top, two free ends fasten with double overhand knot (11), then looped, and ends fastened again with overhand knot (12); sinker line proper (13) from fishing apparatus knotted in loop (14).

Secondary snoods (*matai*) are made of twisted *wao*. They are either single or double. Single snoods are fastened to fishline by knotting. Double snoods seem to be a feature of coconut-shell fishhooks. The attachment of these snoods to the fishline is shown in figure 33*a*.

Many lines used in fishing from the beach (*wakamoe* system) are wound on a wooden holder (*muli pokai*), their hooks supported by floats.

Rods

For *kaloma* fishing, reef and lagoon angling, and trolling with a composite pearl-shell hook, the fishing line is attached to a rod (*matila*). The total length of fishline attached to the rod is several feet longer than the amount of line necessary for a cast.

The fisherman judges the length necessary for a cast and makes at this point a clove hitch round the distal end of the rod. The free end of the attachment line he carries down the rod, making a single transverse turn with a single overhand knot round the rod at equal intervals. Toward the proximal end of the rod, he makes several transverse turns round the rod and fastens the free end of the line to the standing line with an overhand knot. For carrying to and from the fishing ground, the casting line with hook attached is laid along the rod, a transverse turn fixed with a single overhand knot is made round the rod toward the proximal end, and the free end of the casting line carried up the rod again; the hook is caught in one of the transverse turns made round the rod by the attachment line.

The *kaloma* rod, *matila kaloma* (C8137), is made of *puapua* wood, 4 feet 6 inches long, 3/4 inch in diameter at the proximal end, 7/8 inch diameter at distal end. The line is very fine two-ply twisted *wao* (about the thickness of no. 50 cotton thread). The casting line is about 4 feet 6 inches long, the attachment line 14 inches long.

A larger fish rod for needle fish (*matila yi akuaiku*) and reef fish is also made of *puapua* wood (C8098); it is 8 feet 9 1/2 inches long, 3/4 inch in diameter at the proximal end, 7/8 inch in diameter at the distal end. The line is fine two-ply twisted *wao* (about the thickness of coarse thread). The casting line is 12 feet long, the attachment line 5 feet long.

The attachment of bonito hook line to the bonito trolling rod (*matila atui*) is by a clove hitch to the distal end of the rod. Where more than one hook is attached to the same rod, the several clove hitches are fastened round the rod below each other (fig. 34*a*). The bonito line, of thick three-ply twisted *wao*, is about 20 feet long and is attached to the rod at a point about 10 to 12 feet from the hook, depending on the length of casting line that the fisherman desires. The free end of the line is wound round the rod with oblique downward spiral transverse turns and tied about the middle of the rod with an overhand knot. The free ends of several attached hooks wound thus round the rod produce a pleasing pattern lashing on the rod.

The bonito rod is fitted into a wooden handle (*tukau*) which has an upper groove part into which the proximal end of the rod fits, a raised flat projection (*maiae tukau*) covered with netting, and a handgrip (*muli tukau*) at the end. The shape of the handle and the method of lashing the rod are shown in figure 34*b*. The completed lashing resembles the completed Samoan lashing of bonito rod to handle (27, p. 503) though the technique of lashing differs slightly.

The netting covering the flat projection above the handgrip is made by the ordinary netting technique and is fastened round the handle by transverse cords that pass through the marginal meshes above and below the projection. When lines and hooks are attached to the rod, the casting line is carried down the rod and the hooks caught through the

netting meshes. For use, an appropriate hook is selected, disengaged from the netting meshes and allowed to hang free from the distal end of the rod. If fish do not bite this hook, it is replaced in the net and another hook disengaged. With six or more hooks attached to the rod at one time, the fisherman is able with maximum speed and minimum trouble to select the hook which the fish prefer to bite.

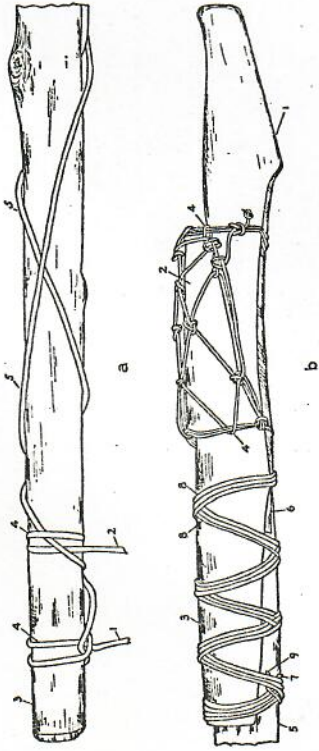


FIGURE 34.—Bonito rod. *a*, attachment of casting line: 1, 2, casting lines attach two hooks to distal end of rod (3); 4, clove hitch made around end of rod; casting lines hang free; attachment lines (5) wound spirally around rod and fastened halfway down rod. *b*, attachment to handle (*tukau*), side view: 1, handle of *wakanawa* wood with handgrip (*muti tukau*); 2, raised flat projection (*maiae tukau*); 3, hollowed out upper part; raised projection covered with netting (*epa*) fastened to handle by cords passing through marginal meshes (4); rod (5) pushed into hollowed upper part, chocked if necessary with small wedges of wood (6); lashing of three-ply braided sennit commences with buried end (7) at upper end of handle, then wound around handle and rod descending spirally, then up handle and rod ascending spirally; continues alternate spirals, descending and ascending, for three turns each way (8), and finishes with buried end (9).

NOOSES

Noosing apparatus consists of a line of three-ply twisted *wao* about 18 feet long and a stick (*kau*) by which the noose is brought near the fish.

The stick (C8152) is of *puapua* wood, 6 feet long, $\frac{3}{4}$ inch in diameter at the proximal end, $\frac{3}{8}$ inch in diameter at the distal end (fig. 4*c*). The distal end is notched to provide a running groove for the line on which a running noose (*matapili*) is made with a slip noose (*mavi*). Line and handle together are termed *kanyele*.

COMPOSITE FISHING APPARATUS

For deep-sea hand line fishing from a stationary canoe outside the reef (*tukunooana* system), a composite fishing apparatus (*taiumakomako*) consisting of a number of hooks attached to one line is used.

Of two types of *taiumakomako* in use, one (C8190) has a secondary snood (*matat*) of three-ply sennit 6 feet 8 inches long. At a point 2 feet from the proximal end of this snood a *ngangie* spreader stick, 5 $\frac{3}{4}$ inches long, $\frac{3}{8}$ inch in diameter, is lashed. The proximal end of the stick is grooved circumferentially and the snood fastened to the stick by four oblique transverse turns of fine two-ply twisted *wao*, followed by three circumferential turns between stick and snood, the finishing end being buried

in three transverse turns round the snood (fig. 33*b*). Five spreader sticks 9 inches apart are attached to the snood in this way, being lashed so that the distal ends of the sticks project alternately to the left and to the right of the snood. The distal end of each spreader stick is also grooved circumferentially, and a length of twisted *wao*, 1 $\frac{3}{4}$ inches long, is doubled and the free ends fastened to the spreader stick groove by transverse turns of fine *wao*. To this double spreader stick snood, the fishhook snood proper is fastened by the method of knotting illustrated in figure 33*b*. Five fishhooks are attached to the five spreader sticks. By making these sticks project alternately to left and to right, the danger of tangling the hooks in use is avoided.

Informants mentioned another type of *taiumakomako* formerly in use. It consisted of two crossed spreader sticks of *ngangie* wood, each stick about 18 inches long, with a cross section diameter of about 1 $\frac{1}{2}$ inches. To the ends of each spreader a snood was seized. The four snoods ranged in length from 2 $\frac{1}{2}$ to 6 feet so that four fish caught on wooden hooks knotted to each snood would not tangle the snood lines. At the intersection of the spreaders, a sinker line (*kawatani tukui maene*), 12 inches long, was fastened to suspend the sinker (*maene*) of *punga* coral. Also at the intersection of the spreaders was knotted a secondary snood (*matat*) 12 feet long. To the *matat* was fastened sennit fishline about 200 fathoms long.

SINKERS

For fishing at moderate depths of 50 or 75 fathoms, sinkers (*maene*) consist of any coral stones of suitable weight picked up on the beach. Because these sinkers are disengaged from the line and fall to the bottom when the hook has reached the required depth it is pointless to use any but rough stones. In *tukunooana* fishing, one sinker weighing about 9 pounds is used repeatedly. Even for this the Pukapukan fisherman has apparently felt no incentive to make well-shaped or bored sinkers. He chooses as a sinker stone a block of coral that is roughly rectangular or cone-shaped. If the surface is not rough enough to hold the sinker line without slipping, it is chipped slightly to form two transverse grooves into which the sinker line fits. This line is attached to the sinker by transverse turns and knotted to the secondary snood (see figure 33*c*).

FISH CLUB

Fish clubs (*patu ika*) are made of *ngangie* wood; their size and weight depend on the fish which it is proposed to kill with them. A small club is used for *patuki* and other reef fish caught in reef angling or canoe fishing.

This club (C8163) is shaped like a small talo pounder with a blunt proximal end. It is 16 inches long, 2 inches in diameter at the distal end, 1 inch in diameter at the proximal end. The distal end is slightly convex. The club weighs 1 $\frac{1}{4}$ pounds. Larger clubs weighing up to 5 pounds are used for larger deep-sea fish. Today a section of iron bar is often used as a fish club.

HOOK CONTAINERS

When not in use, small, valuable single and composite pearl-shell hooks are kept in the house stored in the double satchel (*tutuma pa*) described elsewhere (p. 134). Hooks and small fishing gear when taken into a canoe are kept for safety in a coconut-shell container (*pupu*).

An example of this type of container (C8093) is a smoothly polished coconut shell, the eye end of which has been cut off to make a container 4 inches high, $2\frac{1}{4}$ inches in diameter at the mouth. The mouth is covered with another half coconut shell (*pu'puni*), which fits tightly over the container.

Fishbone gorges used in fishing needle fish are kept when not in use by sticking them into a gorge cushion (*pu'pu au*) which consists of a small cylindrical section of shaped coconut husk. The gorge cushion may itself be kept in the coconut container by the fisherman out in his canoe.

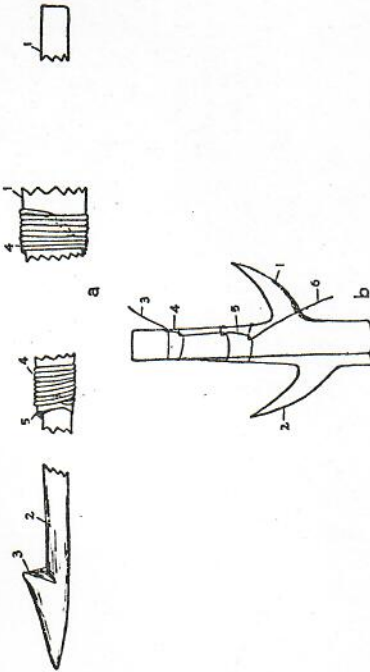


FIGURE 35.—Fishing equipment. *a*, fish spear (*tao ika*) (C8125): 1, shaft of *pu'puia* wood 10 feet 3 inches long, diameter at proximal end (*mulimuli*) $\frac{3}{4}$ inch, widest diameter of haft $1\frac{1}{4}$ inches; 2, 3, barb (*wakatala*) of *ngangie* wood, 1 foot 9 inches long, $\frac{3}{4}$ inch diameter; 3, point (*mata*) of barb 2 inches long, cut in $\frac{1}{2}$ inch; sharpened stem of barb forced (5) into pithy core of *pu'puia* wood for 3 or more inches and held tight with 73 turns of two-ply twisted semit (4); commencing and finishing ends buried; at point (5), observable projection above lashing of haft. Second fish spear, examined in field, was one-piece point and haft of *ngangie* wood, 8 feet long; barb $6\frac{1}{2}$ inches long; proximal end finished with small terminal knob. *b*, gorge of pandanus spine (*matatala*) (C8043): 1, 2, two spines (thorns) stripped from pandanus leaf and placed together so that barbs project on either side; spines joined together by snood (3) of finest *wao* fiber with two pairs of half hitches (4, 5); 6, free end of snood serves as bait tying string (*takete maumu*); length of gorge $\frac{1}{2}$ inch, width $\frac{1}{8}$ inch.

FISH SPEAR

Most fish spears in use today are thin iron rods or wooden shafts with iron points. Formerly both shaft and barbed point were of wood. A typical spear is shown in figure 35, *a*.

GORGES

Two types of gorge (*au*) are in common use: one of fishbone is used for catching the needle fish; the other, of pandanus spine, is used for the tiny *Iu'po* fish.

The fishbone gorge is a bone of the *talao* fish about 1 inch long. The snood of fine two-ply twisted *wao* (*ataata*) is fastened to the hook below the head by four half hitches (*wa yelungu*). The free end of the snood serves as a bait string (*takete maumu*).

A bait of *kaloma* flesh is wrapped round the bone and the bait fastened with several turns of the bait string. When not in use, the gorge is pushed into the gorge cushion. The gorge of pandanus spine (*matatala wata*) is described in figure 35, *b*.

HOOKS

Pukapukan fishhooks are made of wood, coconut shell, pearl shell, and turtle shell. The generic name for a wooden hook is *kau*; for a shell hook, *patata* or *matan*; for a composite hook, *pa*. Single-piece hooks are further named according to their size and shape. The hook is conveniently divided into shank, bend, point limb, and point. The Pukapukan equivalents for these and other terms are shank or point limb, *kaukau*; outside of the bend, *muli*; inner curve of bend, *luu*; point, *mata*; barb, *wakatala*; shank knob, *leke*; terminal or proximal end of shank above knob, *tileo*.

In use, each hook has a snood (*taka*) lashed to the proximal end of the shank. The end of the three-ply twisted or braided snood is unravelled and laid against the inner side of the shank knob with the end of the braided section resting against the proximal end of the shank. One ply is placed to the right; the other two plies, which are treated as a single element, to the left. The first ply is passed transversely round the shank to the right, under the knob on the outer side, then round to the inner side again to pass diagonally upward to the snood where the free end of the ply is laid against the braided portion of the snood. The other two unravelled plies pass to the left, transversely round the shank, under the knob but on top of the already wrapped first ply, round to the inner side of the shank to pass diagonally up to lie against the braided portion of the snood.

The lashing of snood wrapping to shank is done with braided semit or *wao* cord. The lashing pattern is figure-of-eight turns in which crossings are on the inner side of the shank and the loops are alternately above and below the shank knob. The figure-of-eight turns are either ascending or descending (*hi alonga*) according to the choice of the worker. The Pukapukan lashing technique corresponds to that described for Manihiki (29, pp. 171-172, figs. 84, 85). In the ascending pattern lashing, the commencement end is buried and the free finishing end makes seizing turns round the snood to bind the unravelled ends of the snood securely to the length of the snood. The finishing end is buried under several of the transverse seizing turns. In the descending pattern lashing, the commencement end may be buried under seizing turns round snood and free snood ends before the figure-of-eight turns are commenced; the finishing end is buried beneath the last two descending turns. Alternately, the lashing commencement may be buried below the free ends of the snood, but after the lashing turns are completed, the free end of the lashing cord is carried up to the snood and the seizing turns made before the finishing end is buried. A third variation occurs when the wrapped unravelled snood plies are too short to lie against the snood; in this case, the commencement is below the snood, the finishing end is buried beneath the last two turns, and there is no need for seizing turns round snood.

The use of bait strings (*takete maumu*) is a common feature of most hooks. If the buried end of the lashing cord is long enough, it is not cut off flush with the finishing turns, but is allowed to hang free. If the free end of the lashing cord is not long enough to serve as a bait string, an additional piece of fine cord is fastened to the bend of the hook with a slip knot. In use, the bait is laid on the hook and several turns are taken round bait and hook with the bait string.

WOODEN HOOKS

Wooden hooks vary greatly in size according to the fish they are designed to catch. Small wooden hooks are used interchangeably with the single-piece pearl-shell hook (*tope*) for catching in deep water the smaller reef groupers. Large wooden hooks are used to catch *Ruvettus* and other large deep-sea fish. All wooden hooks are termed *kan*; the largest V-shaped hook is sometimes distinguished by the name *yemo*, the largest U-shaped hook by the name *yawve*.

Wooden hooks are of two shapes, the U-shape and the V-shape. All the hooks are made from *ngangie* wood; most of them from forked branches, some of the U-shaped ones from branches that have been artificially bent and made to grow in this position. The hooks are two-piece, the point being fitted to the point limb with a lashed scarf joint. The upper end of the shank is narrowed and provided with a shank knob to support the lashing of snood to shank.

In larger hooks used for *Ruvettus* and other deep-sea fish, the lashing of point to point limb may be in two or three separate sections. This occurs in five of the eight deep-sea fishhooks available for study. The remaining three hooks are freshly lashed, probably by inexpert fishermen who knew that the hooks, intended for a museum collection, would never be used for fishing. The middle of three lashings is put on the smaller hooks about 1 inch below the bend of the functional point, 2 or more inches below this point on larger hooks. After the transverse turns completing this lashing have been made, the lashing is covered by tough fish scales (*unawai*) of the *matarua* fish which project above and below the lashing. The ends that project below are caught with the transverse turns of the lowest lashing, those that project above are caught with the turns of the topmost lashing. The fish-scale covering protects the middle lashing from being destroyed by the biting teeth of a hooked fish. Because it is usual to protect only this middle lashing, one may assume that a hooked *Ruvettus*, for example, is expected to swallow a hook to the point where his jaws close on this middle lashing, not on the lowest or topmost lashing. The free end of the lowest lashing is carried up over the fish scale covering to commence the topmost lashing; even if this longitudinal thread is severed, the topmost lashing can not become unravelled because the free end is effectively buried in the descending turns. (See lashing in figure 37*c*.)

The clearance between the point and the shank limb varies greatly among the hooks. In small wooden hooks the clearance ranges from $\frac{3}{8}$ to $\frac{3}{4}$ inch, in the larger hooks from $1\frac{1}{4}$ to $3\frac{3}{4}$ inches. Kennedy states that the required clearance is equivalent to the thickness of the edgewise thumb with the point against the middle of the nail (19, p. 17). Four out of 12 hooks have approximately this clearance, four small hooks have less than this clearance (about $\frac{3}{8}$ inch), four large hooks have a much greater clearance (up to $3\frac{3}{4}$ inches). Leaving aside the four smallest hooks used to catch smaller deep-sea fish, I presume that four of the remaining eight wooden hooks used for large deep-sea fish were probably made for ordinary fishermen, the other four for expert fishermen who prefer the hook with the wide clearance. Both types of hook, those with wide and those with narrow clearance, were in common use.

In several of the hooks the point is directed away from the mesial longitudinal line of the shank limb. Presumably the explanation for this in the Pukapukan hooks is the same as that given by Kennedy for Ellice Islands hooks (19, p. 16), that is, the manner in which the scarf surface was cut on the point limb, previously with an adz, today with knife or saw.

Of six V-shaped wooden hooks available for study, four are small hooks attached to the *taumakomako* apparatus used to catch small deep-water fish. (See figure 33*b*.) These hooks are about $2\frac{1}{4}$ inches high (from the outside bottom of the bend to the top point of the shank) and $1\frac{1}{4}$ inches in greatest width (from outside of point limb to outside of shank limb). The clearance between functional point and shank limb is about $\frac{3}{8}$ inch. In two hooks, the shank leaves the point at an angle of 40 degrees; in the other two, at an angle of 45 degrees. In all four hooks, the snood is three-ply twisted *wao* cord which is attached to the shank by descending figure-of-eight lashings of fine *wao* cord. The free end of this lashing is carried up to the snood and seizes it with several transverse turns. The single lashing of point to point limb is by transverse turns with buried commencement and finishing ends. The lashing of a larger hook is shown in figure 36.

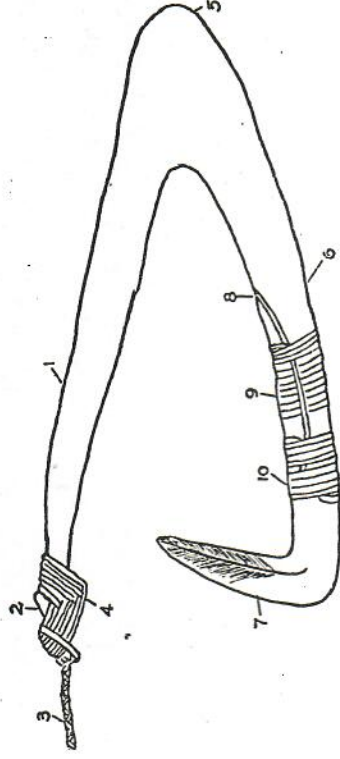


FIGURE 36.—Wooden hook (*kan*) of *ngangie* wood (C6526): hook 5 inches high, $2\frac{3}{8}$ inches in greatest width, and $\frac{5}{8}$ inch clearance between point and shank; diameter of shank (1) above bend $\frac{1}{2}$ inch, thickness of bend (5) from outside bottom of curve to inner curve $1\frac{3}{8}$ inches; angle of shank limb with point limb 50 degrees; snood (3) of three-ply snit braid attached to shank with descending figure-of-eight turns (4) around shank knob (2); point limb (6) and point (7) scarfed (8) and fastened with two separate lashings; lower lashing (9) made first with simple transverse turns, free end being carried up to commence second upper lashing (10); functional point (7) transversely convex on top, beveled underneath, and projects slightly downward. (Reproduced from Macgregor, 20, fig. 7.)

A larger V-shaped hook (termed *yemo*) with a rounded and downward curving point is shown in figure 37*a*.

Between the V-shaped and the U-shaped hook may be distinguished an intermediate type of which there is one specimen for study (fig. 37*b*). This is an old hook which has been relashed. Owing to a natural twist in the shank limb, the top of the shank is twisted out of the mesial longitudinal plane running through the bend and point. It is this twist and not that of the point which makes the point appear to be directed away from the mesial longitudinal line of the shank limb.

Of five U-shaped hooks, four appear to have been made from artificially bent wood, one from a forked branch that had a natural inner curve to the bend. The naturally curved hook is shown in figure 37*c*.

Of the three other U-shaped hooks, the smallest is $4\frac{7}{8}$ inches high, 3 inches in greatest width, $\frac{3}{4}$ inch between point and shank; the second hook is $8\frac{1}{4}$ inches high, $4\frac{3}{4}$ inches wide, $1\frac{1}{4}$ inches between point and shank; the third hook (termed *yawve*) is $12\frac{1}{2}$ inches high, 8 inches wide, and $3\frac{3}{4}$ inches between point and shank.

SINGLE-PIECE HOOKS

Pearl-shell Hooks

Single-piece pearl-shell hooks are made in many sizes to catch all varieties of lagoon fish and most of the smaller deep-sea fish. The hooks are named according to their size and shape. For accurate classification, the name of the fish which the hook is made to catch is usually added to the type name

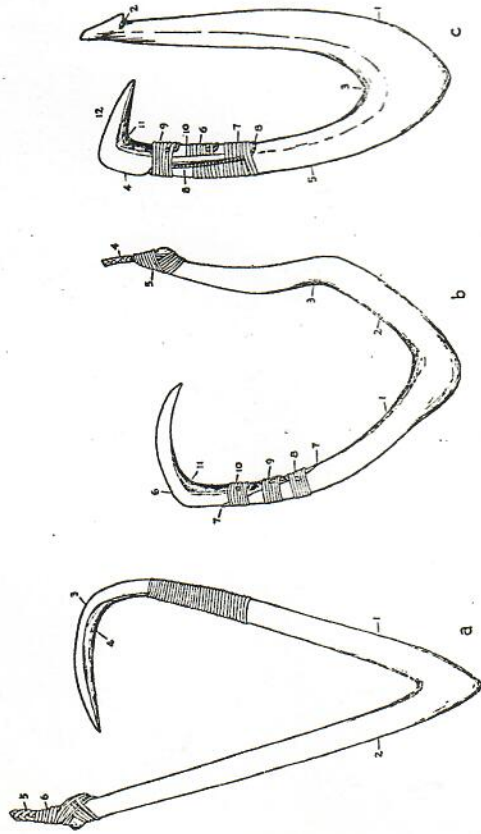


FIGURE 37.—Wooden fishhooks. *a*, large V-shaped hook (*avemo*) of *ngangie* wood (C8092): hook $1\frac{3}{8}$ inches high, 7 inches in greatest width, point-shank clearance $2\frac{1}{4}$ inches; diameter of point limb (1) and shank (2) above bend, $\frac{3}{4}$ inch; height from outside bottom of bend to inner curve, $1\frac{3}{4}$ inches; angle of point limb with shank limb 55 degrees; point limb and point (3) scarfed and lashed together with 30 turns of three-ply braided sennit; point flat on inner surface (4) and curves slightly downward; snood (5) of thick three-ply braided sennit attached to shank with descending figure-of-eight turns; free finishing end passes upward to seize snood (6). *b*, intermediate type wooden hook (*kau*) of *ngangie* wood (C8126): hook 10 inches high, $6\frac{1}{4}$ inches at greatest width, point-shank clearance $2\frac{1}{2}$ inches; diameters of point limb (1) and shank (2) above bend, each 1 inch; thickness of bend about $1\frac{1}{2}$ inches; shank has inward bend (3), above which shank bends backward and away from mesial longitudinal plane; snood (4) lashed with descending figure-of-eight turns (5); point (6) and point limb (1) scarfed (7) and fastened together with three separate lashings (8, 9, 10); point slightly flat on inner curve of bend (11), then curves up and down at point. *c*, narrow U-shaped wooden hook (*kant*) of *ngangie* wood (C8212): hook $5\frac{1}{2}$ inches high, greatest width $2\frac{1}{2}$ inches, point-shank clearance $\frac{1}{2}$ inch; shank (1) $\frac{3}{4}$ inch diameter above bend, $\frac{3}{8}$ inch diameter immediately below shank knob (2); bend of hook (3) $1\frac{1}{2}$ inches high from outside bottom of curve to inner bend and 1 inch thick; point (4) lashed to point limb (5) with three separate lashings; middle lashing of six transverse turns (6) made first, lowest lashing (7) second, free end (8) carried over middle lashing to make top lashing (9); remains of fish scale protective covering of middle lashing shown (10); point flat underneath (11), beveled on either side on top (12); distal end of point projects downward.

of the hook. The hooks are made from black- or gold-lipped pearl shell and provided with snoods of *wao* cord. They may be classified by shape into three types: a U-shaped hook, a circular hook that is usually barbed, and a slanted U-shaped hook that may be barbed.

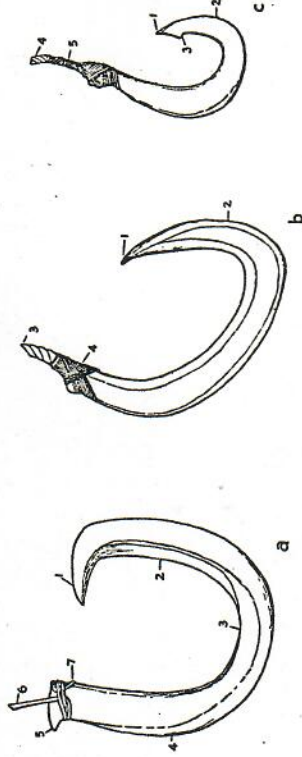


FIGURE 38.—Shell fishhooks. *a*, pearl-shell hook (*yekei kaloma*) (C8158): hook $\frac{3}{8}$ inch high, $\frac{1}{8}$ inch wide, and $\frac{1}{8}$ inch thick; point (1) short, making point-shank clearance comparatively wide; inner and outer surfaces of point limb (2), bend (3), and shank (4) beveled; shank knob (5) flush with proximal end of shank; snood of finest two-ply twisted *wao* (6) fastened to shank by three transverse turns with free end of snood line which effectively holds snood fast to shank; finishing end (7) tucked under turns and held tight; bait string (not shown) of *wao* fiber wound around bend of hook. *b*, barbles, slanted U-hook (*tui wawa*) of gold-lipped shell (C8224): hook 1 inch high, $\frac{3}{4}$ inch wide; edges beveled, but owing to irregular shape of shell, point directed away from mesial longitudinal line of shank; point (1) bends slightly from point limb (2); wide point-shank clearance; snood (3) of *wao* cord fastened to shank by lashing meant to be descending figure-of-eight turns, but very irregular (4) owing to fact that worker suffered from bad eyesight. *c*, pearl-shell hook (*wakaalo yi kakai*) for albacore (C8164): hook 2 inches high, $1\frac{1}{4}$ inches wide; edges beveled; point (1) bends slightly from point limb (2); barb (3) runs from point at acute angle, barb-point edge straight, beveled slightly; wide point-shank clearance; snood (4) of three-ply *wao* cord fastened to shank with descending figure-of-eight turns; finishing end of lashing seizes snood for length of $\frac{1}{2}$ inch at 5.

U-shaped hooks. Small U-shaped hooks (*yekei*) are used for beach angling and for catching the smaller lagoon fish by other fishing methods.

An example of the *yekei* hook (fig. 38, *a*) is minute and almost as wide as it is high. It was used for catching *kaloma* fish before European pins came into use. It is a beautifully made hook and shows craftsmanship of high order. The term *yekei* is applied to hooks of this general shape up to about 1 or $1\frac{1}{2}$ inches high when the name *tope* comes into use. *Tope* hooks are U-shaped, but tend to be higher than they are wide. The name is also applied to hooks of other material such as turtle shell or coconut shell which have this general shape. The type *tope* hook of pearl shell is shown in figure 39, *a*. Other *tope* hooks in the Bishop Museum collection range in height from $1\frac{1}{2}$ to $1\frac{3}{4}$ inches and in greatest outside width from 1 inch to $1\frac{1}{2}$ inches. They are made of gold- or black-lipped shell; descending or ascending figure-of-eight lashings attach the snood of two- or three-ply *wao* cord to the shank of the hook. They are provided with bait strings.

Circular hooks. Circular pearl-shell hooks (*matau* and *wakavae*) are made with a barb (*wakatata*). Most of these hooks are as wide as they are high, but the size of the barb varies considerably (fig. 39, b). In most hooks, the functional point is level with the lowest transverse turn of the snood lashing, directly opposite a point about 3/16 inch below the proximal end of the shank.

In one hook examined in the field, however, the inner curve of the hook was almost a perfect circle, the functional point being on a level with the top of the snood lashing and the proximal end of the shank. Another unusual feature observed on an old hook of this type was a pronounced terminal knob at the proximal end of the shank, separate from, and other than, the customary shank knob which was also cut on the outside of the shank.

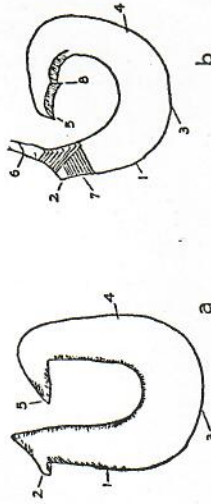


FIGURE 39.—One-piece shell hooks. *a*, U-shaped hook (*tope*): greatest length 2 inches, greatest width 1½ inches, point-shank clearance ¾ inch; *b*, circular hook (*matau* or *wakavae*): greatest length 1½ inches, greatest width 1¼ inches, point-shank clearance ¾ inch; barb (*wakatata*) markedly concave and beveled; snood thick two-ply *wao* cord fastened to shank with descending figure-of-eight turns. 1, shank; 2, shank knob; 3, bend; 4, point limb; 5, point; 6, snood; 7, snood lashings; 8, barb. (Reproduced from Macgregor, 20, fig. 4.)

There can be no doubt that the barbed hook is native to Pukapuka and antedates European influence. The first man to make the barbed hook is said to have been Te Upe, a man of Loto who lived in the reign of Maina, twelve generations ago. His name is mentioned in connection with barbed hooks in an old chant "Ulu taku tangi". Beasley (4, p. 34, pls. XLIX A and XLIX B) figures six hooks of this type apparently collected by Gill prior to 1877. Beasley attributes the hooks to "Pukapuka, Paumotu group", an evident mistake. The figured hooks range in height from 1½ to 2¾ inches.

Slanted-U hooks. Slanted U-shaped hooks, large enough to be called *wakaolo* or *wakavae* and used for albacore fishing, have barbs. Small hooks of this type without barbs are called *tui wao* (fig. 38, b) and are used to catch the smaller reef fish.

These hooks are much higher than they are wide. The point limb is short compared with the length of the shank and the functional point bends only slightly from the plane of the point limb. The barb runs from the point at a very acute angle making a large point-shank clearance (fig. 38, b, c).

Despite a superficial similarity in shape of the hook shown in figure 38, c to European fishhooks, informants were positive that this type of barbed fishhook was native

Pukapukan. Their contention is supported by the fact that Gill collected a hook of this shape before 1877. Beasley (4, p. 34) figures the hook in plate XLIX A, no. 2.

Turtle-shell Hooks

Single-piece hooks of turtle shell are made in two shapes. One shape corresponds in all respects to the *tope*, U-shaped hook of pearl shell, and is used for the same fish as the pearl-shell *tope*. The hook of turtle shell is termed *tope ma*. A characteristic hook of this type (C8223) is 2 inches high, 1½ inches wide and has a uniform thickness of ¼ inch.

A smaller turtle-shell hook termed *kawilo* is used in fishing for lagoon fish with a line from the beach. The type hook is about 7/8 inch high, ¾ inch wide, 1/8 inch thick at the bend. The point-shank clearance is wide. Owing to the fine work necessary, the snood is attached to the shank only with three figure-of-eight turns.

Coconut-shell Hooks

Most hooks cut from coconut shell are made in the shape of the *tope* pearl-shell hook and are called *tope ngaipu*. They are used on the *tamako-mako* composite fishing apparatus and also singly in fishing for the smaller deep-sea fish outside the reef.

The hook is cut from the dry shell from the end opposite to the eyes. One side of the hook has the dark brown color of the outer surface of the coconut shell; the other side has the light brown color characteristic of the inner surface of the shell. The hooks (fig. 33, a) have a pronounced longitudinal convexity and a slight transverse convexity on the dark brown side. The edges forming the inner curve of the hooks are beveled slightly. The hooks have double or looped snoods attached to the shank.

A small hook (C8185) is 2¼ inches high, 1½ inches in greatest width; it has a point-shank clearance of ¼ inch. The inner curve is a pronounced U-shape, with a greatest inner width of 1 inch. The looped snood is attached to the shank with descending figure-of-eight turns, the finishing end being buried beneath the last two turns.

COMPOSITE HOOKS

Composite pearl-shell or pearl-shell and turtle-shell hooks (*pa*) are used for trolling and for fishing reef fish. They fall naturally into two classes, the bonito hook (*pa atu*) and the small composite hook, distinguished from the bonito hook by the addition of the name of the fish caught with them to the generic word *pa*.

Bonito Hooks

The bonito hook is a two-piece hook consisting of shank (*pa*) and point (*manga*). The point is pierced with holes (*pu*) through which it is lashed to the distal (*nuti*) end of the shank, along with the hackle (*wakamannu wao*). The line or snood (*taka* or *wakamanga*) is passed through the proximal hole of the point, attached to the shank by a lashing that passes

through a hole (*pu pa*) in the thick proximal end of the shank, and seized (*pu iungu*) by a lashing thread (*alaala*) passing from the proximal hole of the point to the shank head. The distal end of the shank on the underneath side is cross-hatched (*kolikoti*) to prevent the point-shank lashings from slipping, and filler sticks (*tua niu*), short pieces of coconut leaflet midrib, are pushed underneath the point-shank lashings on either side of the point base to steady the point on the shank.

The following description of the type Pukapukan bonito hook (fig. 40) is summarized from an examination of 28 Pukapukan bonito hooks, 11 of these in Bernice P. Bishop Museum, 17 in the field. Terminology employed for parts of the hook is that established by Buck. Lashings are described with the hook horizontal, point to the right, shank head to the left.

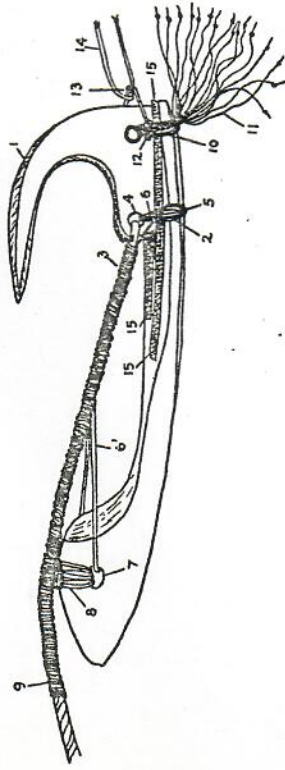


FIGURE 40.—Type Pukapukan bonito hook (C8188): point (1) of gold-lipped shell, beveled at functional point, bend, and outer angle; proximal lashing (2) and snood (3) pass through proximal hole (4); oblique lashing turns on back of shank (5); lashing thread (6), after overhand binding knot around proximal lashings, makes two turns through head hole (7) and proximal hole (4); after last turn through proximal hole, thread seizes snood (3) and its previous turns through head hole; lower threads occasionally left out for short distance and then included again in seizing of snood; toward head, lower threads (6') dropped and seizing continues to head hole; head lashing (8) consists of transverse turns around snood and through head hole, bound with circumferential turns; seizing of snood continues for about 1 inch above head hole (9); distal lashing (10) of point fixes hackle (11) with oblique transverse turns; half hitch binding (12) of distal lashing; thread passes around distal end of point; makes another binding around far side distal lashing, loop knotted (13) and cut to make secondary hackle (14); hackle (11) consists of number of fine threads of *wao*; filler sticks (15) of coconut leaflet midrib pass under both lashings on near and far sides; shank $3\frac{3}{4}$ inches long; greatest width of head $\frac{5}{8}$ inch, height of head $\frac{1}{2}$ inch; width at tail $\frac{3}{8}$ inch; thickness of tail $\frac{1}{8}$ inch; length of filler sticks $1\frac{1}{4}$ and $1\frac{1}{2}$ inches; length of point base $\frac{7}{8}$ inch; thickness of point $\frac{1}{8}$ inch.

The shank is made of strips of shell cut radially through the shell so as to include part of the hinge at one end. The shank length ranges from 3 to $4\frac{1}{2}$ inches. The length of the hinge-head section in relation to the total length of the shank varies according to the size and thickness of the part of the shell from which the shank is cut. In the hooks examined, length of the hinge-head section of the hooks ranges from $\frac{3}{4}$ to 3 inches (fig. 41). The width of the tail end of the shanks ranges from $\frac{1}{4}$ to $\frac{3}{8}$ inch, thickness from $\frac{1}{8}$ to $\frac{1}{16}$ inch.

The nacreous inner surface of the shell forms the front of the shank, the rough outer surface of the shell, the back of the shank. The back is sometimes longitudinally flat, more often convex with a slight transverse convexity also. It is ground down to remove the dull rough material and to bring out a clear shiny iridescent or golden surface toward the distal end of the tail. Different surfaces are described in the ordinary color terms: *tua melo toto*, a deep gold shank back; *tua kena*, a light iridescent color; *tua puia*, a pronounced rainbow iridescent color.

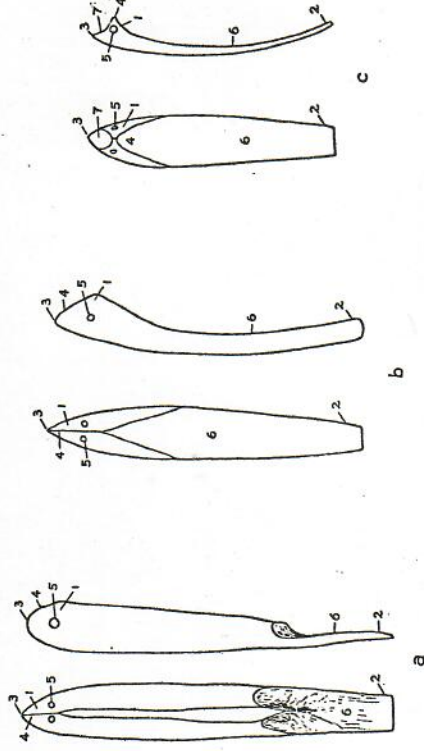


FIGURE 41.—Variation in bonito hook shanks, front and side views. *a*, long shank (C8216) with mesial ridge, slight grinding of head end, short tail section; *b*, type shank (C8187) with well-marked head, tail thicker than usual; *c*, small shank, head has short ridge caused by grinding of proximal end. 1, head; 2, tail; 3, head point; 4, mesial edge; 5, head hole; 6, front nacreous surface; 7, head point ground into concave surface.

A hole is bored transversely from side to side about midway down the thickness of the head. In one shank two such holes were bored, one at the extreme proximal end of the shank, the other nearer the maximum thickness of the head. Only the distal of the two holes carries the head snood lashing and it is evident that the proximal hole was bored by mistake too far back on the head to function properly.

The tails of the shanks are uniformly smooth on front, back, and lateral surfaces. In the opened grave (p. 164), however, Talainga saw a bonito shank that had two paired lateral projections at the tail end of a narrowing shank. He could give no information about the shape of the head of this shank, but the lateral projections are suggestive of similar projections on Melanesian hooks of the Solomon Islands. None could give any information about the shank type. All the hooks examined save one have a cross-hatching scratched on the back of the tail end of the shank.

The point of the bonito hook is shaped from shell cut from the lip edge of the pearl shell. One side shows the inner surface of the shell, the other side the black or gold outer surface which is smoothed down and sometimes polished. Eight points have been made of turtle shell, one of bone, the rest of pearl shell. In all the points the base is prolonged proximally to carry the technical bend of the hook. In 26 points, two holes are drilled through the base of the point to carry the point-shank lashings; two holes only have three holes. In none of the points has the proximal hole broken through the upper edge of the point base. Characteristic point shapes are shown in figure 42.

The snood consists of three-ply twisted *wao* cord about $\frac{1}{8}$ inch thick and 20 or more feet long. It is attached directly to the trolling rod without the mediation of a fishline

proper (p. 188). It is lashed to the hook with fine two-ply twisted *wao*. The hackle is made of short lengths (1 to 1½ inches) of *wao* cord; the number of separate lengths ranges from 10, if of fine cord, to 28 lengths if of fine thread. Pukapukan fishermen have never used hackles of any material other than *wao*.

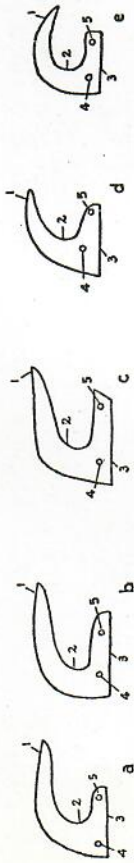


FIGURE 42.—Bonito hook points (*manga*). *a*, common shape, rounded back, point almost parallel with base line; *b*, another common point, similar to *a*, but with longer point base; *c*, point with square back, acute angle at top right edge of base; *d*, short functional point and base, wide bend; *e*, point with well-rounded bend, downward projecting functional point. 1, functional point; 2, bend; 3, base; 4, distal hole (*pu ki nu'i*); 5, proximal hole (*pu ki mua*).

No ceremonial is associated with the lashing together of the parts of the bonito hook. Considerable variation exists in lashing methods employed. Some fishermen employ separate lashings for the proximal and distal point holes in fastening point to shank, others employ a continuous lashing. The lashing of shank head to snood is also variable; some lashings consist of simple transverse turns, others of transverse and figure-of-eight turns.

A single hole lashing commences at the proximal hole with the middle of a long piece of thread. One end of the thread is left free to make the snood setzings, the other end is used to make transverse turns through the proximal hole of the point and round the shank. On the back of the shank, these turns make oblique crossings (*waakawaw*). On one hook only are the crossings parallel and not oblique. After six or eight transverse turns are made, they are bound on one side with the finishing end of the thread and fastened with overhand knots. On the other side, the free commencement end also binds the turns and is knotted, but the free end is passed backward and forward between the head hole and the proximal hole of the point for two or three turns and laid aside.

The snood is now laid on the front of the shank. One end of the snood is passed through the proximal hole of the point and doubled back along its length for the whole or part of the distance between point hole and head hole. The free end of the proximal hole lashing which has just made the turns between point hole and head hole is now seized round both the doubled snood and its previous turns through head hole with close turns. The point-head hole turns may be left out of the seizing for a few turns and then caught up again, or they may be continuously included in the seizing turns. In any case, toward the head, the point-head hole turns are dropped from the seizing which is continued to a point above the head hole. Most snood-head hole lashings consist of transverse turns between the hole and the snood followed by figure-of-eight turns over the snood, corresponding to the Manihiki method (29, p. 183, fig. 97).

With a separate length of thread transverse turns are made through the distal hole and round the tail of the shank, fixing the hackle in this lashing with oblique turns according to the Manihiki method (29, p. 179, fig. 91), with the exception, however, that the lashing thread, after making about ten oblique transverse turns, makes half hitch side bindings round the near side lashing of the distal hole. The free end of the thread is passed through the distal hole to the far side, again makes half hitch side bindings round the far side lashing. The free end is then brought back round the distal end of the point, passed under the near side lashing, up, back over it to make a distal point

loop, and is finally fastened with overhand knots to this distal point loop. This loop is stretched and knotted on itself with an overhand knot. The loop is cut below the knot and each end knotted again to prevent unravelling. This method of making the secondary hackle was the one illustrated to me, but it is possible that the Samoan method (27, p. 500) is also employed.

If the base of the point is narrow and the point, after lashing, appears to be loose, filler sticks, ranging from 1 to 2¼ inches long, are inserted between the point base and the point-shank lashings to fill this space and tighten up the point. They are used in 17 hooks, absent in 11 hooks.

Variations on type hook. The previous description summarizes the type bonito hook. Variations, especially in lashings, are common.

Continuous lashing of the two point holes to the shank is done with a very long lashing thread. The worker measures this into three sections. Commencing with the middle section, he lashes the proximal hole with transverse, oblique turns, binds this lashing with half hitches and passes one end of the thread up to the head hole. The head hole-point turns may be simple turns passing from the near side proximal point hole to the near side head hole, through the head hole and back to the far side point hole, or they may be oblique figure-of-eight turns, passing from the near side point hole to the far side head hole, through this hole and back to the far side point hole. In either case, after finally passing through the point hole, the seizing of the head hole-point turns continues as before. When the lashing of the snood to the head is completed, the free end of the third section of lashing thread is passed along the base of the point to the distal hole and completes the distal hole lashing, hackle fixation, and secondary hackle as before. Alternately, in one hook, the free end passes through the proximal hole, to the far side, makes a half hitch side binding, then passes back to the near side distal hole between the base of the point and the front of the shank.

The turns between head hole and point in one hook are made by passing the lashing thread from the near side proximal hole of the point up to the head hole, down to the point again, round the far side proximal hole lashing at the side of the point base, up to the head hole, through this, down the near side and round the near side proximal hole lashing. This is continued for the customary three turns and the free end continues with the snood seizing. In yet another hook, the turns between head hole and point have been added after the snood was lashed to the head and instead of passing through the head hole, pass round the head snood lashing between the snood and the head of the shank. The third downward turn on the near side passes obliquely underneath the snood to the far side proximal hole and through this hole to the near side to complete the lashing.

Several hooks have a simpler lashing of snood to the head of the shank. The thread makes transverse turns through the head hole and over the snood, binding these turns with circumferential turns between the head of the shank and the snood. This lashing corresponds to the simple Manihiki technique (29, p. 183, fig. 96).

Most side bindings of point lashings are made with the regular lashing thread. In one hook, however, this is done with a separate short length of thread. The commencement end of this thread is knotted round the near side distal point hole lashing, passes to the near side proximal hole lashing, makes one turn round this, is then pushed through the proximal hole to the far side, binds the far side proximal hole lashing with one turn and passes down to the far side distal hole lashing round which it is knotted.

All but three hooks have the secondary hackle. One has nothing to take the place of this hackle. The second has a thread about 3 inches long knotted an inch from one end round the near side distal hole lashing, the two ends of the thread serving as a sort of secondary hackle. On the far side distal hole lashing, the finishing end of the thread lashing, after being knotted round the distal lashing, is cut off about 1½ inches from

the lashing and serves as a single secondary hackle for the distal side. The third hook has on the near side a length of thread which is knotted round the proximal hole lashing and the free end of which passes to the distal hole lashing on the same side, is knotted round this and cut off about 1½ inches from the distal lashing. On the far side, a thread was probably fastened in a similar way, but has been subsequently broken.

Two of the 28 hooks have points with three holes. Informants suggested that both of these hooks showed Manihiki influence. One of them was made by a Manihiki man long resident in Pukapuka and is one of the hooks with the exceptional secondary hackle. The snood is passed through the middle hole, turns between proximal hole and head hole as added as is customary with Pukapukan hooks, and the snood is seized as far as the head with turns that pick up and drop these head turns. The proximal hole lashing passes over the snood loop. The attachment of the snood to the middle hole is the attachment described by Buck (29, p. 177, fig. 89*e*), and was done presumably for the same reason Buck gives; that is, because of the position of the holes—the middle hole being very close to the distal hole, the snood is passed through the middle instead of the proximal hole, to prevent the point lashings from being too close together. The addition to this hook of the Pukapukan method of seizing the snood presents an interestingly lashed hook which shows characteristic lashing patterns of two atoll cultures fused in the one object and illustrates also the importance of the personality of the fisherman in initiating new features. The hook has no filler sticks.

In the second hook with three point holes, the snood is passed through the proximal hole, the point lashings through the middle and distal holes. The hook is otherwise lashed according to Pukapukan technique and has filler sticks.

Winding of snood. After use, the bonito hook and snood are detached from the bonito rod and soaked in fresh water to wash out the salt from cord and lashings. The hooks are hung to dry in the shade. The snoods are then wound in a characteristic way.

Commencing about 5 inches from the head of the shank, the snood is wound transversely in longitudinal lengths round the fingers of one hand. When the winding has reached a point about 12 inches from the free end of the snood, the lengths are slipped from the fingers and passed over the point of the hook so that they lie along the front of the shank above the seized part of the snood. The free end of the snood is then passed transversely round shank and snood lengths about the middle point of the shank and the finishing end fastened to the last transverse turn with half hitches or overhand knots. The compact bundle of hook and snood is then placed away in safety until it is required again.

Summary. The Pukapukan bonito hook shows a number of constant features which make it a typical example of the western Polynesian bonito hook class as regards both type of point and the attachment of the snood to the point. Examination of a number of hooks reinforces conclusions drawn by Buck from a comparative study of bonito hooks (29, pp. 187-194). Pukapukan variations on the type pattern, while interesting in themselves, merely accentuate constant features of this pattern.

Macgregor (20, pp. 30-31), from an examination of eight bonito hooks in Bernice P. Bishop Museum attributed to Pukapuka, states that Pukapukan hooks "have features other than the snood attachment which make the two types [of eastern and western Polynesian bonito hooks] more diverse than Buck's classification suggests." Macgregor proceeded on the basis of his Pukapukan hooks to make a subdivision in the western group between purely western (Samoa to Pukapuka) and marginal western (presum-

ably Pukapuka, also Manihiki, Rakahanga, Fagatau). It is unfortunate, however, that of the eight hooks on which this newer division is based, four only are Pukapukan, the remaining four hooks being typical Manihiki hooks. Informants were at great pains to make the point clear that Manihiki hooks attributed to Pukapuka were not authentically Pukapukan even if they were procured from a Manihiki man on Pukapuka. In any case they felt that the collector had become confused in his localities and had mislabeled hooks actually procured from Manihiki. Examination of the series of 28 bonito hooks indicates clearly that all but two of these conform to one general type and that the remaining two definitely show Manihiki influence. Hence one may conclude that Macgregor's analysis was based on an unfortunate mislabeling of museum specimens which invalidates his whole argument and indicates that Buck's analysis may still be taken as final.

Two old Pukapukan bonito hooks are figured in the literature: one collected by Gill before 1877 and shown by Beasley (4, pl. XLIX A, 1), a hook with a pearl-shell shank and turtle-shell point, apparently conforming in all particulars to the type Pukapukan hook. A second hook figured by Edge-Partington (8, 1st ser., pl. 62, 4) is also a typical Pukapukan hook. These hooks help to establish the stability of the Pukapukan type.

Small Composite Hooks

Small composite trolling hooks (*pa*) are made with pearl-shell shanks and turtle-shell points (fig. 43*a*). Hooks with shanks from 2 to 2½ inches long are used in trolling for *komuti* fish and are named generically *pa taki komuti*. Smaller hooks, with shanks from 1 to 1¾ inches long, are used for *malau* fish and are termed *pa malau*.

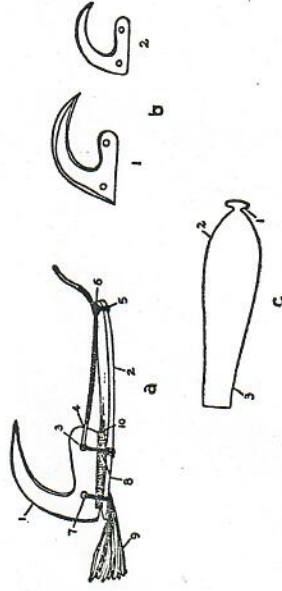


FIGURE 43.—Small trolling hook (*pa taki komuti*) (C8133). *a*, composite hook: point (1) first lashed to shank (2) through proximal hole (3); snood (4) passed through proximal hole and seized with free end of proximal hole lashings; seizing continues until head is reached when thread makes transverse turns (5) around shank and binds them with circumferential turns (6), then seizes snood for about 1 inch beyond head; distal hole (7) of point lashed, commencing with thread passing from proximal hole underneath shank (8) across to distal hole on far side, thence back through distal hole and around shank to fix hackle (9) of *wao* fiber with oblique turns; no secondary hackle on this hook; filler sticks (10) inserted between lashings and sides of point base, small trolling hook points of turtle shell: 1, large point, beveled edges, rounded bend, and inverted functional point; 2, small point, rounded bend, short inverted functional point. *c*, pearl-shell shank: 1, notched projecting head; 2, widest part; 3, tail.

Shanks of these hooks are of uniform thickness. They do not have the raised head of the bonito shank. Instead, the head consists of a notched projection (*mutimuti*). The shank widens below the head, then narrows and flares slightly to form the tail (*yutu*; fig. 43c). The greatest width of the shank in larger hooks is about $\frac{5}{8}$ inch, in smaller hooks about $\frac{3}{8}$ inch; the width of the tail in larger hooks is about $\frac{1}{8}$ inch, in smaller hooks about $\frac{1}{4}$ inch; average thickness of all hooks is about $\frac{1}{8}$ inch.

Shanks are made of both black-tipped and gold-tipped shell. The inner nacreous surface of the shell forms the front of the shank; the outer rough surface, the back of the shank. This rough surface is smoothed and polished, but the black surface is not ground away as in bonito hooks.

All points are of turtle shell. Characteristic shapes are shown in figure 43, b. The points range from $\frac{1}{2}$ to $\frac{3}{4}$ inch in base length and from $\frac{1}{8}$ to $\frac{1}{4}$ inch in thickness. Two holes only are bored through the base; none of these was broken in the eleven hooks examined.

The lashing together of the small composite hook corresponds exactly to the method described for the larger bonito hook.

A typical lashing is shown in figure 43, a. Lashing of point to tail of the shank may be with a single thread for each hole or with a continuous thread. After the proximal hole is lashed with transverse turns which cross obliquely on the back of the shank, the free end of the thread seizes the snood as far as the head of the shank. In these small composite hooks, no thread is run between proximal hole and the head of the shank. The distal lashing is often bound at the side with the finishing thread to make the characteristic secondary hackle of the bonito hook.

Several slight variations may be noted on this fundamental lashing pattern:

Filler sticks are not used in six out of eleven hooks; in three, the filler sticks are coconut midrib and in two the fillers are short fishbones wedged between the distal lashing and the side of the point base. In one hook, the point is lashed with a continuous thread which commences with the proximal hole. A half hitch side binding is made round the far side proximal hole lashing and the free end of the thread is passed underneath and diagonally across the back of the shank, then up to the near side distal hole to commence the lashing of this hole. In a second hook, the proximal hole lashing is completed and the lashing bound on the near side; the free end of the thread is then passed on the near side to the distal hole to make the distal hole lashing. The snood is passed through the proximal hole, but it is seized with a special lashing thread that is knotted round the far side proximal hole lashing, passes from this through the snood loop, and commences the seizing of the snood on the near side.

Secondary hackles are found on four out of eleven hooks. In two hooks the hackle is made according to the bonito hook pattern. In the remaining three hooks, it is made in slightly different fashion. In the first hook, the near side distal hole lashing is bound with the free finishing end of the lashing thread and the thread is cut about 1 inch from the distal hole. At the far side of the distal hole a thread about 2 inches long is passed through, up, back over the distal hole lashing. In one hook, the two free ends of this thread are twisted together and are knotted with the free end of the projecting finishing thread from the near side hole. In the second hook, the two free ends are tied in a double overhand knot effectively binding the far side distal lashing, and these two ends, together with the free finishing end from the near side, are knotted together to form the secondary hackle. In the third hook, both near side proximal and distal hole lashings are bound with a separate thread that is knotted round proximal side lashing, passes to distal lashing, is knotted round this, and passes again beyond the distal end of the point base where it is knotted with the double ends of a second thread that has been knotted round the far side distal hole lashing.

In one hook only does the point lashing commence with the distal hole. Transverse oblique turns fix the hackle, and the lashing is bound with the finishing end of the lashing thread, which passes round the lashing and is knotted on itself. The commencement end of the separate lashing thread for the proximal hole is knotted to the near side distal lashing and serves as a binder for this lashing. The free end passes to the proximal hole on the near side and makes four transverse oblique turns through this hole and round the shank. When these turns are completed, the free end passes up to seize the snood, lashes the snood to the head of the shank, and again seizes the snood for about 1 inch beyond the head lashing.

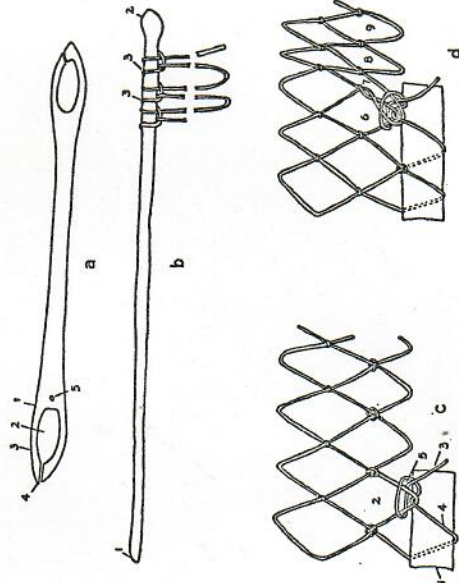


Figure 44.—Netting needles and netting technique. *a*, netting needle (*wawa*) of *wakanawa* wood (C8048): needle $1.4\frac{3}{4}$ inches long; 1, expanded end $\frac{3}{4}$ inch wide; 2, mesial longitudinal slot (*pu*); 3, sides of slots (*manga*); 4, slit (*wawa*) through which netting cord passes; 5, hole (*pu*) through which commencement end of netting cord knots; cord wound longitudinally between two slots. *b*, netting needle (*tu* or *yute*) (C8129) of coconut midrib: needle $6\frac{3}{4}$ inches long, about $\frac{1}{4}$ inch diameter; 1, blunt end; 2, terminal knob; proximal end (3) slightly notched (*wakalawe*) and three lengths of sennit cord attached by clove hitches; when loaded, needle carries 10 or more lengths of netting cord attached to proximal end. *c*, netting technique: to make mesh by ordinary technique, mesh gauge (1) is placed in position so that upper edge touches completed mesh (2); netting cord (3) brought down behind gauge and up around lower edge to form lower loop (4); needle passes through loop of mesh (2), crossing drawn taut on upper edge of gauge where it is held with left thumb while netting knot (5) is made. *d*, to narrow net, same technique followed, but two completed meshes (6,7) brought together by superimposing 7 over 6 with netting knot made as before; in practice, meshes 6, 7, 8, 9 would be brought together by superimposing 7 over 6, 8 over 7, and 9 over 8, with netting knot made around all four gathered meshes (only two superimposed meshes are shown).

NETTING

Nets are made from two-ply twisted *wao* fiber, two-ply twisted sennit (*uka*), and from fibers prepared from the aerial roots of the *yulu* pandanus tree. The methods of preparing these netting cords are described on page 143.

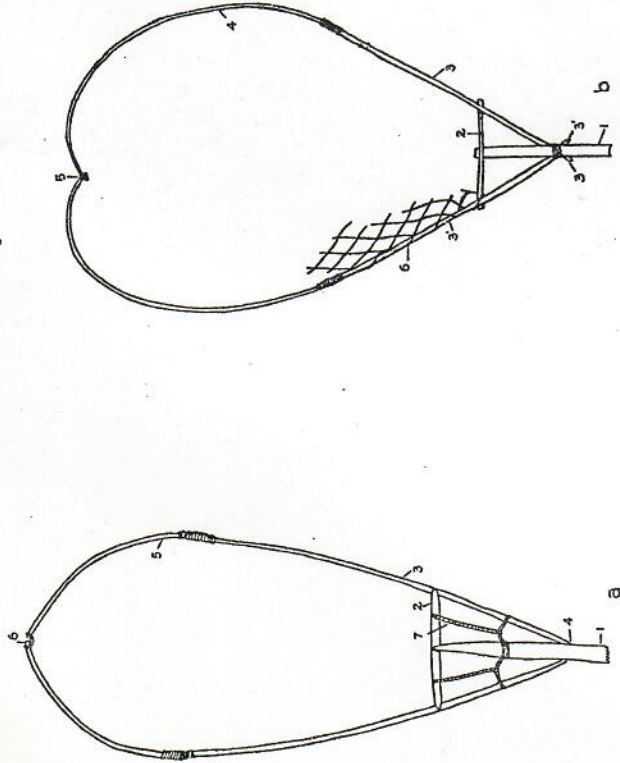


FIGURE 45.—Flying-fish and bird nets. *a*, framework of flying-fish net (*tae malolo*) (C8667): 1, handle (*kaitea*) of *puapua* wood, 7 feet 2 inches long, greatest diameter 1¾ inches, diameter at crossbar ¾ inch; head of handle slotted (*uluho*) to hold crossbar (*teka*) of *wakanawa* wood (2) which is 10½ inches long, ¾ inch in diameter; crossbar slotted at each end to receive rods (*wangawanga*) of pandanus wood (3) 3 feet long and ¾ inch in diameter at ends where they fit against handle (4); other ends of rods are ½ inch in diameter and are joined to lighter rods (*matati*) (5) of *lakau yili* by scarf joints; each *matati* is 20 inches long and ¾ inch in diameter; the other two ends of two *matati* are notched, brought closely together (6) and joined by continuous transverse turns of cord; lashing of stout rods (*wangawanga*) to handle, shown in figure 46, *a*, *b*, *c*; lashing of head of handle to crossbar and of ends of crossbar to stout rods is in common alternating curves pattern; lashing of stout rods to lighter rods is by transverse turns around scarf joint, commencement ends and finishing ends being buried. The suspensory lashing consists of transverse turns around handle and across to stout rods on either side, then transverse turns around cross lashing and crossbar; cross turns and suspensory turns are seized to make lashing taut. Net is 18 inches deep, with greatest width at mouth 19 inches. *b*, bird net (*zwata*) (C8143): 1, handle of *puapua* wood 10 feet long, 1¾ inches at widest diameter, and 1 inch in diameter at head; 2, crossbar of *wangawanga* wood is 11½ inches long, ½ inch in diameter; 3, 3', stout rods of pandanus wood, 2 feet 6 inches long, ¾ inch in diameter; 4, lighter rods of *lakau yili* wood, 3 feet long, ½ inch in diameter at joint with stout rods, ¾ inch in diameter at distal point (5) of frame; in attaching frame to handle, crossbar (2) is first lashed to upper side of handle; both stout rods (3, 3') laid over upper sides of crossbar and under handle, two ends of rods projecting slightly beyond handle, 3' to right, 3 to left; lashing of rods to handle, of rods to crossbar ends, and of crossbar to head of handle are all of alternate curves pattern; crossbar first lashed to head of handle; free end of cord carried to left end of crossbar and lashed to rod to crossbar; free end carried back across crossbar to opposite end of crossbar and

lashes rod to crossbar end; free end of cord carried down to handle and lashes ends of rods of handle; finally, free end of cord carried down handle, making transverse turns around handle at intervals of 15 inches; 4 feet from proximal end of handle, cord makes 8 transverse turns around handle and fastens with overhead knot. This lashing enables the bird catcher more quickly to draw in his net by providing a firm hold for his hands. Light rods (4) attached to stout rods (3, 3') by scarf joints lashed with transverse turns on one side and oblique transverse turns on the other; two ends of light rods overlap (5) and are fastened together; natural springiness of thin rods makes net framework heart-shaped. Net attached to handle before ends of light rods are lashed together; each rod passes through marginal meshes (6) of net, net being attached directly and without use of marginal cord; proximal end meshes of net are gathered on a double cord which loops loosely around head of handle below crossbar and has two ends knotted together. Net is 20 inches deep; greatest width at mouth 31 inches.

Netting needles (*tui* or *wawa*) and mesh gauges (*yika*) are used. Of two types of needle, the *wawa* type (fig. 44, *a*) is similar to those used in other parts of Polynesia. One end of the netting cord is passed through the hole and knotted. The rest of the cord is wound longitudinally between the two slots; the knotted end prevents the cord from slipping off the needle when only a few longitudinal turns remain on it. The second type of netting needle (*tui* or *yuki*, fig. 44, *b*) is loaded by making a clove hitch on it at the point of the notch and just forward of the terminal knob (which prevents the clove hitch from slipping off the needle) with the free end of the netting cord. A length of about 30 inches is measured off and another clove hitch made round the needle. This process is repeated until a sufficient length of cord is attached to the needle, hanging from the terminal knob end in double lengths of about 15 inches. In using the needle, a double length of cord is slipped from the blunt point of the needle. When this length has been used up, a second length is slipped from the needle and the process is repeated as the netting advances. In slipping the cord from the needle, the clove hitch in the cord unites itself. Needles are made in various sizes to suit different sized meshes.

The *yika* gauge is a flat rectangular piece of wood scraped smoothly or a piece of turtle shell. A mesh gauge of turtle shell (C8131), used to make the flying-fish net in the museum collection is 3½ inches long, ¾ inch wide and ⅛ inch thick. The edges are polished smooth. Mesh gauges are of different sizes according to the size of mesh required.

TECHNIQUE

To make a net is *tui te kupenga*; a mesh is *mata kupenga*. The Pukapukan technique of netting (fig. 44, *c*) corresponds to the Samoan method described by Buck (27, pp. 470-472) with one variation.

The netting needle is loaded and the required mesh gauge selected. An assistant holds a light supporting rod of wood around which the first meshes are made, the assistant judging their size by eye. This variation on Samoan starting technique is the same as the Manihikian technique save that a supporting rod replaces the supporting cord used in Manihiki. (See 29, p. 161, fig. 73.) When the Pukapukan netter has made the first row of meshes he transfers these meshes from the rod to a supporting cord. The ends of the cord are knotted and the cord looped round a stick placed in the ground or else round the toe of the netter. As each row is completed, the net is turned and successive rows are added by the same technique.

One Pukapukan method of narrowing bag nets is by the addition of extra meshes, the common Polynesian technique. A second method is by making a netting knot round two or more meshes. Thus in the bird net and in the flying-fish net described below, the bottom of the net is narrowed by gathering together under the thumb four successive meshes and making the netting knot round these four meshes together (fig. 44, *d*). The

method corresponds to the Samoan technique of "dropping meshes in the various rows" (27, p. 472): gathering together two or more meshes in one row to function as a single mesh means that in the next row there will be fewer meshes with which to work, hence the technique is equivalent to dropping meshes from subsequent working rows.

TYPES OF NETS

The seine net (*kupenga*) and the large hand fishnet (*tae yaeke*) have been described (pp. 57-58). The flying-fish dip net (*tae malolo*) consists of a long handle, a crossbar and framework (figs. 45a, 46). Its use is described on page 58.

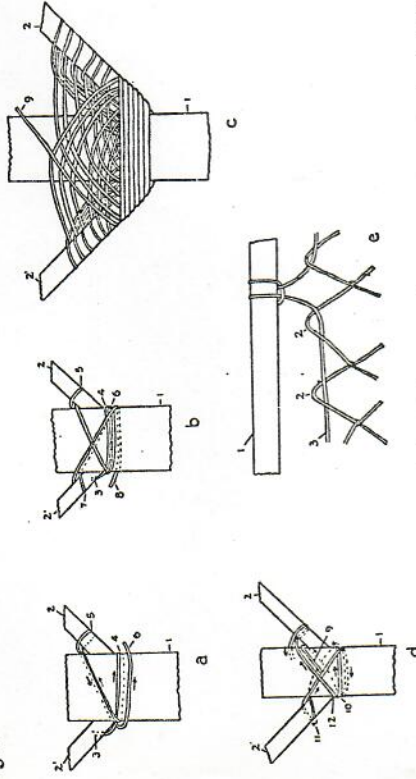


FIGURE 46.—Lashing of flying-fish net framework. a, commencement of lashing of stout rods (2, 2') to handle (1); commencement end of sennit cord (3) laid on far side of left rod; cord brought around in front of handle and transversely (4) around to back, across to far side, then up diagonally across near side, passing between rod (2) and handle, across front of rod (5), then diagonally down far side of handle, passing around and across front of rod (6). b, continuation of lashing: free end (6) passes to back of handle, diagonally up and across to rod (2'), around front of rod (7), behind it and diagonally down and across front of handle, and around back of handle (8); this establishes lashing pattern, which is continued for about 12 or more complete diagonal turns passing to each rod. c, completed lashing pattern is here shown with six turns only; d, on top of pattern are superimposed four superior diagonal lashing turns; method of making turns shown here (inferior lashings omitted); free end of cord (9) passes diagonally down far side of handle, around to front (10), across handle, diagonally up far side (11), around rod (2'), diagonally down near side, around far side of handle again, up diagonally across near side (12) to rod (2), around this rod and diagonally down across far side of handle; lashing pattern is continued until there are two diagonal lashings up and down handle; finishing end of cord carried diagonally across near side of handle to rod (2), makes two transverse turns around rod and buries finishing end underneath these two turns; finished lashing is of neat and pleasing design. e, attachment of flying-fish net to frame: 1, rod of framework; 2, marginal net meshes; 3, marginal cord passes through meshes, then up to frame, making a clove hitch around rod, passing down to pick up more marginal meshes; process continued until all marginal meshes are picked up on cord, rod clove hitches 6 to 8 inches apart, free ends of cord wound round handle just below cross-lashing holding suspensory lashing of crossbar to handle; second cord passes through marginal meshes at proximal end of net and is fastened to stout rods above lashing of crossbar.

The flying-fish practice net (*tae peni*) used by young men to catch pandanus keys thrown at them in practice sport is of similar shape to the flying-fish net, but smaller.

It consists of a handle of *wetani* wood, 4 feet long and 1½ inches in diameter, a crossbar 8 inches long, ¾ inch in diameter, and two stout rods of pandanus wood, 3 feet long, which are fastened to handle and crossbar, the ends bent close together and tied without the intermediary of lighter rods (*matati*) used in the flying-fish net frame. The lashings of framework and attachment of net to frame are similar to those of the flying-fish net. The practice net is made of the two-ply twisted fiber from the aerial roots of *yuku* pandanus. The net is 13 inches wide at the mouth, 18 inches deep.

The large bird net (*wuata*, fig. 45, b) differs in shape from the flying-fish net.

The net framework is attached to the handle in such a way that the distal end of the framework rises at an obtuse angle from the plane of the handle. The distal point of the frame is 10 inches higher than the plane of the handle. The framework when viewed sideways presents the shape of an enlarged spatula. When the bird catcher brings down the net upon a flying or roosting bird, the net is reversed so that the distal end of the frame is lower than the plane of the handle. A bird flying from the net is more likely to be caught by the downward projecting spatula-shaped net than it would if the net frame were in the same plane as the handle. The frame and handle are made of light wood so that the net may be easily used in the tree tops. The net itself is made of fine two-ply twisted sennit.

TRAPS AND SNARES

Because the fauna of a coral atoll is extremely simple, there are in Pukapuka only two types of bird snare and a form of the widely distributed western Polynesian rat trap.

The construction and operation of the rat trap (*vaka kiole*) are shown in figure 47. The trap is baited with mature coconut flesh (*ipihipi*) and set in a runway made by rats. The rat is removed by the owner of the trap, who resets the bait stick and spring mechanism.

The coconut-shell bird snare (*maenga kui*) is shown in figure 48, a. Another bird snare (*maenga tili*), shown in figure 48, b, is set on the beach, weighted down with stones, and the birds driven through it.

Though not strictly traps or snares, wooden structures (*pa wotu*) in which turtles are kept may be described in this context.

Stakes of *puapua* or *pukama* wood, each about 5 feet long and 1 inch in diameter, are driven into the sea bottom a few yards from low water level of the beach. The stakes are arranged about 1 inch apart to form a rectangular enclosure 3 feet square, and 4 feet high. The stakes are bound together at top and bottom with horizontal poles and a continuous lashing which makes transverse turns round vertical and horizontal members. Baby turtles, caught as they emerge from their shells, are placed in these enclosures. They are fed regularly on squid and octopus until they are mature enough to be killed for a special food division. The size of enclosures observed varied according to the number of turtles placed within. An enclosure of the above size housed two turtles with shells about 12 inches long. Bigger structures contained five or more small

turtles. There are about three of these enclosures in each village. When the people of Ngake go to Motu Ko for the copra-making season, they take with them their small turtles and put them in temporary enclosures erected on the lagoon frontage of the copra settlements.

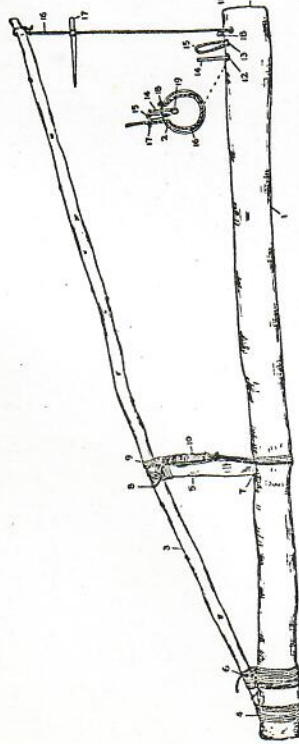


FIGURE 47.—Rat trap (*waka kiote*) (C8171): trap (1) 2 feet 7½ inches long and 2½ inches in diameter at larger end, made of a section of pandanus wood, hollowed out at one end (2) into a hole 2 inches in diameter and 6 inches deep; a springy piece of *ngangie* wood (3) 2 feet 8 inches long and ½ inch in diameter tied to pandanus wood at one end (4) and supported by upright (5) 4½ inches high and ¾ inch in diameter; lashing of spring to trap (4) consists of 7 turns of two-ply twisted sennit around end of spring and trap; free end of sennit carried 1 inch up spring to make eight figure-of-eight turns (6) around spring and trap; finishing end buried, but not cut off flush with face of trap; upright (5) rests at one end in a natural depression (7) on upper surface of trap; upper end lashed to spring with common alternate curves pattern lashing (8); suspensory brace (9) consists of 4 turns of two-ply twisted sennit around spring and trap, transverse turns being seized with 23 transverse turns (10) finished off with half hitches; on either side of middle line at open end of trap, holes large enough to allow run of two-ply twisted sennit are bored through roof of trap just inside entrance (11); a little farther in, two holes (12, 13) are bored in median line; straight stick (14) pushed down through innermost hole (12) to support bait (19); loop of sennit (15) knotted inside trap so that it projects above trap to height of bait stick; length of sennit (16) knotted around free end of spring; after testing tension, a light stick (17) is fastened by clove hitches to sennit so that it passes through noose (15) and rests its pointed end on top of bait stick (14); end of sennit (16) pushed through hole (11), passed around inner circumference of trap hole, and pushed out through another hole where it knots (18); cross section shows sennit (16) passing around inner circumference of trap (2), knotted at 18, bait stick (14) baited (19), and light stick (17) passing through loop (15) and resting on top of bait stick (14); trap set by pulling down spring and passing stick (17), attached to sennit, through loop (15) and resting its point on upper end of bait stick (14) (see cross section). In this position, as long as upper end of bait stick remains immovable spring stick cannot fly back; sennit loop within trap spreads out so that a rat entering spring stick must step over loop to nibble at bait which is fastened to pointed end of bait stick before trap is set. Rat nibbling bait moves bait stick which releases light stick, spring flies up and catches rat against roof of tube by tightened loop. In use, trap is propped in position by stones and sand packed around and alongside it.

SOUL TRAP

Though I believe the so-called "soul trap" was not used in Pukapukan culture but was only an ideological concept of one of the many traps with which the Underworld was full (p. 329), nevertheless particulars of the soul trap sold by Gill in 1876 to Sir Wollaston Franks for the British Museum may be given here. The following description as well as the print of the central portion of the trap (pl. 6) has been forwarded to me by Mr. Adrian Digby of the British Museum.

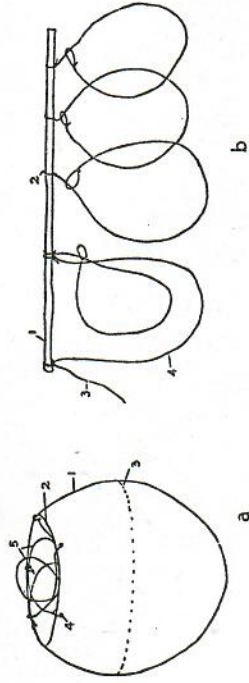


FIGURE 48.—Bird snares. *a*, snare for *kui* birds (*maenga kui*) (C8135): drinking nut (1) 4 inches high, with top removed to form opening (2) 3 inches in diameter; flesh removed from inside upper portion of nut down to dotted line (3); five holes bored through shell just below rim (4) and a length of prepared coconut fiber passes through each hole to be fastened by knot; free end of each fiber forms a slip noose (5); snare set by making five nooses which pass through each other and so block opening. *b*, snare (*maenga tui*) (C8060) for *tui* birds, section only of snare shown: stick (1) section of coconut midrib, 4 feet 4 inches long, ¾ inch in diameter; lengths of prepared coconut fiber (2) knotted at regular intervals along stick; fibers each knotted into slip nooses of which there are 23 on stick, each about 2½ inches in diameter; long fiber (3) with loop at end knotted to each end of stick and loop dropped over peg to anchor stick in place; a fixed loop (4) is knotted to each end of stick and placed over peg or held down with a stone to give more secure placement to snare; wings (*pa*) of coconut leaves and stones fan out at an angle of about 145 degrees from each end of stick to ensure that birds do not escape around ends of snare.

The trap (no. 9925, Christy Coll., British Mus.) has a total length of 19 feet 4½ inches and consists of eight loops (of which only six are shown in pl. 6) made by binding three-ply braid round a core. This core is made of double lengths of three-ply braided sennit, loose coconut fibers (probably those adhering to the roughly made sennit), and some two-ply twisted *wao* fiber. The loops are lashed in pairs to a long three-ply sennit braid which tapers at both ends. The shorter end (F) terminates in a two-ply twist about 2 inches long. The material used in lashing loops to the central cord is a combination of coarse three-ply braid, with either a fine three-ply braid or a two-ply twist. No details of the lashing are available. Mr. Digby suggests that part of the material used in lashing the pair of loops (D) is a small quantity of bark cloth. But bark cloth was never made in Pukapuka, and it is probable that the material has been confused either with coconut leaf stipule (*kaka*) which is not generally used for lashings because of the weakness of the fibers, or else with thick strips of *wao* fiber.

TOYS AND SPORTS EQUIPMENT

Pukapukan children are clever at making original toys from coconut leaflets. Coconut leaflet toys, made by children according to the technique described for Aitutaki (26, pp. 318-322), include the leaflet Jew's harp (*viro*), the windmill (*poteka launuu*), the leaflet bull roarer (*wakatangi tangi*), and the leaflet spinner (*wakaki matangi* or *weti lele launuu*). Whereas the Aitutakian spinner is made with a collar and suspended with a banana leaf fiber (26, p. 321), the Pukapukan spinner is closed by skewering the two leaflet ends together with a piece of coconut leaflet and is suspended by a strand of human hair knotted to a thin length of coconut midrib.

A trick figure made from a strip of dried coconut leaflet is termed *te tionga a Maui* (fig. 49, b), because the gods gave this figure to Maui to see if he could disengage the two leaflet sections when they were testing out the culture hero. Children and adults spend much time trying to solve the puzzle, without success however, for the solution, if ever there was one, is now lost.

A coconut-leaflet trumpet (*pu launuu*) is made by Pukapukan children. Leaflet midribs are stripped from eight or more coconut leaflets:

The leaflets are rolled spirally into the shape of a cone, successive leaflets being added by overlapping the ends. When a trumpet of suitable size has been made, the free end of the last leaflet is skewered to turn underneath with a small fishbone or splinter of wood. A reed made by doubling a piece of leaflet along the mesial transverse line is inserted into the mouthpiece of the trumpet.

A favorite toy made during our stay was leaflet spectacles which children perched on their noses, pretending they improved their sight.

Two types of ball are in use: one is a round ball made of *wakanawa* wood used in cricket; the other is a somewhat square object made by covering a stone with plaited check coconut leaf. Both balls are termed *bolo*, a name presumably derived from the English word "ball". Either the old name for the ball has been forgotten, or the ball is an introduced toy.

Coconut-cup shoes (*tui ngai'pu*) are made by threading a length of pandanus or sennit through the eye of a half coconut shell. The foot is placed on the shell and the cord passes to the hand between the big and second toes. Children wear these shoes today for sport, but informants said that formerly adults occasionally held coconut-cup foot races during the time of merry-making that introduced the six months of pleasure.

Wooden stilts (*lote*), said to be introduced, are sometimes used by children.

The toy bow (*wena*) and arrow (*ti*) made from coconut-leaflet midribs is an introduced toy. Marbles were also unknown formerly, but today children use as marbles (*peti*) seeds from the *wetau* tree.

Swings (*talakelake*) are made by suspending a crossbar of *ngangie* wood by a sennit rope from a branch of convenient height. The swing is supposed to have been introduced originally by the voyager Wue on his return to Pukapuka. No skipping rope was known.

Noise makers (*pulaka mana*) are made by cutting shallow longitudinal slits on a length of *pulaka* stalk. The flanges so made are raised. With the stalk held in the left hand, the flanges are knocked down in succession with a sweeping blow of the dorsal side of the right hand. A loud noise results as each flange is leveled.

Pop guns (*mana*) are made by inserting a piston into the hollow core of a dry *ngayu* branch. The seed of the *taeyinu* tree or a piece of mature coconut flesh (*ipipi*) is inserted into the branch and the piston sharply pushed down on top of the seed to produce a loud report. Another pop gun is made with the hollow wing bone of the *takupu* bird, a piston of *puapua* wood, and *taeyinu* seed or *ipipi* to produce the report.

A surf board (*papa*) is any flat piece of wood of about an arm's length on which arms and chest are rested when surfing. No elaborate long boards are used, nor does the surfer ride in any position but the prone one.

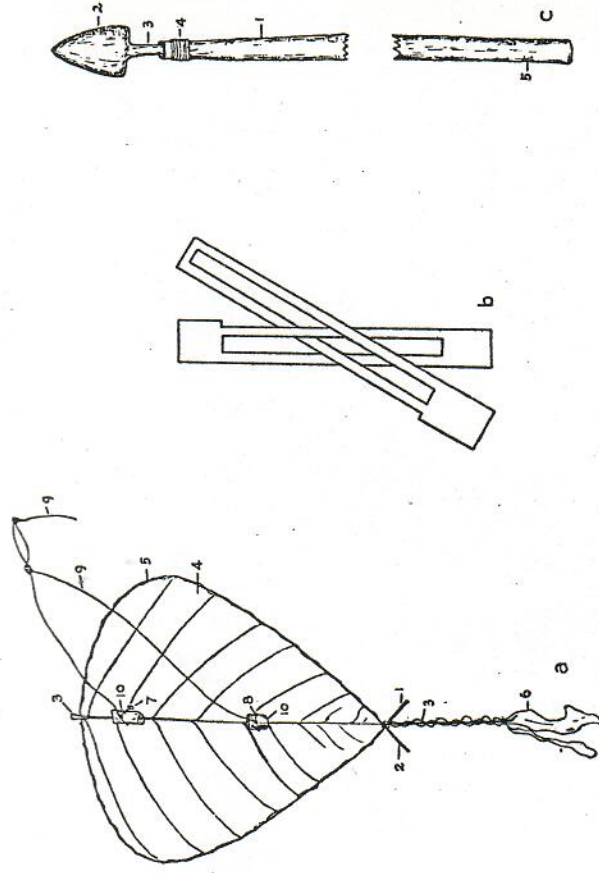


FIGURE 49.—Toys and composite dart. a, kite (*kolilo*) of *puapua* leaf (C8059): coconut leaflet midrib (1, 2) bent into required shape and fastened to another midrib (3) by strips of coconut fiber (*kalawa*); edges of large *puapua* leaf (4) bent over this frame and fastened to it by continuous thread of fiber (5) which passes through leaf and around frame midrib; center midrib (3) extends below apex of kite and to this a tail (6) of two dried coconut leaves fastens by transverse turns of fiber; at two points

(7, 8), face of kite is punctured in longitudinal mesial line and a trailer cord (9) is knotted to midrib over small wads of leaves (10) which prevent chafing of kite face. Size of kite: greatest width, 10 inches; height, 10 inches; length of tail, 3 feet. A second kite (C8058) is 9 inches wide, 10½ inches high. *b*, trick figure of coconut leaflet (*tonga a Maui*): dried coconut leaflet 8 inches long, 1 inch wide slit three times longitudinally; section at each end of leaflet slit transversely so that leaflet consists of two sections, front and back, each bearing two thin strips; trick is to disengage two leaflet sections without breaking them. *c*, composite dart (*velo*) of *ngayuu* wood (C8100): 1, haft 6 feet 2 inches long, average diameter ½ inch; 2, head (*ulu*) of *ngangie* wood 1¼ inches long, ¾ inch in diameter at base; 3, stem 1½ inches long, ¼ inch in diameter, pointed and driven into pithy core of haft and lashed with 10 transverse turns (4) of fine two-ply twisted *wao* cord; commencement and finishing ends buried; lashing holds *ulu* head fast and prevents haft head from splitting. Most darts also lashed with transverse turns at proximal (5) end (*veku*) of haft to prevent splitting of haft when thrown dart strikes ground. Above described dart is small; a more typical dart, examined in the field, was 7 feet 6 inches long, ½ inch in cross section, with an *ulu* head 4¾ inches long; butt end of dart was bound with *wao* cord.

Kites (*kolilo*) are made of a *puapua* leaf stretched over a coconut leaflet midrib frame (fig.49,a). The tail (*kave*) is made of two dry coconut leaflets, the flying cord of strips of coconut midrib (*kalawa*). A circular faced kite is termed *kolilo ipu*: a semi-diamond shaped kite is termed *kolilo kalevalava*.

The only tops in use are tetotum tops (*potetateka*). These are *taupu-lepu* shells (*Conus ebraeus*) which are spun (*takavilivili*) with a twirl of the fingers. The spinning point is termed *mulimuli*, the spun end, *ulu*. No game is played with these tops; they are used as toys only.

Throwing discs (*potetateka watu*) are made by rubbing down a piece of *puaga* coral with another stone until the coral is roughly disc-shaped. Apparently no particular care is taken to produce a well-finished article. A rough disc seen in the field was 3¼ inches in diameter and between ¾ and 1 inch thick. To throw the disc is *wakapotetateka* or *wakateka*.

Discs for the game of *tupe* are made of coconut shell. In a set of 12 (C8194), five discs are cut from the eye end of the shell, seven from the opposite end of the shell. The discs range in weight from 1 to 1½ ounces and in diameter from 3 to 3¾ inches. No particular pains have been taken over the discs. The surface of the shell is smooth, but not polished.

The dart (*tika*) is made of *ngayuu* wood:

Lengths of wood are cut from the bush and heated over a fire so that the green bark may be easily peeled from the wood. The dart is rubbed smooth between two pieces of coconut shell. The shorter dart (*putika*, C8061) is about 2 feet long and ½ inch in diameter. The longer dart (*tika*, C8062) is about 8 inches longer and of the same diameter. The darts are bluntly pointed at the proximal end; the distal end (the head) of one of the darts has been worn away from striking the ground. It is a matter of choice whether the player uses the short or the long dart.

The composite dart (*velo*, C8100) is made of *ngayuu* wood with a head (*ulu toa*) of *ngangie* wood (fig.49,c):

The wood is heated over a fire and the green bark peeled from it. The shaft is rubbed (*mulimulu*) smooth between two pieces of coconut shell and given a deep brown color by hanging in the rafters of a cook house above the smoke of cooking fires. Alternately the shaft may be decorated with spiral lines by stripping the bark from the shaft in a spiral about 1 inch wide running from butt to head and then hung over a cooking fire for some days, after which the remainder of the bark is peeled off leaving the shaft with a spiral of dark brown running down the length. A dart decorated in this way is termed *velo tuhi*.

Darts are used as sporting equipment today. Some informants suggested that *velo* with sharply pointed heads might also have been used as weapons.

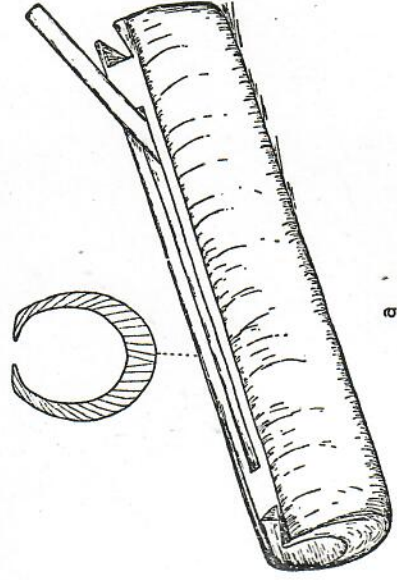


FIGURE 50.—Gong and drum. *a*, wooden slit gong (C8111): diameter from slot to bottom 2¾ inches; cross section diameter 3½ by 4 inches; length of gong 17¼ inches; slot opening, 12 inches long, 1 inch wide; beating stick (C8112) 10 inches long, ¾ inch diameter. A second gong (C8054) is smaller: diameter from slot to bottom 2 inches; cross diameters 3 inches by 2½ inches; length 16½ inches; slot opening 13 inches long; ¾ inch wide; beating stick (C8055) 12½ inches long, ¾ inch diameter. The wood from which gongs are made is *wetan*, that of beaters *ngangie*. Bottom surfaces of both gongs slightly convex. *b*, shark-skin covered drum (*payu*) (C8201): drum 2 feet 9½ inches high, 10 inches top diameter, 9 inches bottom diameter, cut from solid block of coconut wood; inside top of drum hollowed out and an edge ½ inch wide and 2 inches deep cut around outside of top: 1, shark-skin cover (*mata hiri mango*) laid on top of drum and circumference of skin folded over circular wooden binder (*hua karavala*) of pandanus wood (2); skin shown cut away (8) to indicate wooden binder (9) beneath; 3, second wooden binder seized with three-ply sennit, placed on top of skin folded over to second binder, passes down (4) around (5) one of legs (*var*) and up again to second binder, under and over it and down again to second leg; lashing continues until second binder is held by cord passing around each leg; free end of lashing cord passes up from last leg and then around circumference of drum (6), making transverse turn around each oblique lashing; circumferential lashing finished off with overhand knots around last up circumference has been caught around first binder (2) with sewing of cotton thread. An alternate method of lashing skin to drum is to pass sennit lashing directly through holes in circumference of skin, passing lashing around legs as before; this method obviates the rather clumsy use of two circular wooden binders.

MUSICAL INSTRUMENTS

Pukapukan musical instruments consist of the wooden slit gong, the true drum, and the shell trumpet. The shell trumpet (*pu*) was made by cutting off the apical whorls of the shell *Cornis rufus*. It does not seem to have had much status in the culture and informants were vague about its use. Probably it was blown occasionally to call together the people of the island when meetings were held or announcements made.

Wooden slit gongs (fig. 50, *a*) were of the usual Polynesian pattern. Informants were confused as to the proper names for the gong as distinguished from the drum. Majority opinion called the smaller wooden gong *nawa*, from the larger gong *kolilo*, the single-ended drum *payu*; some informants however did not agree with this terminology and preferred to call a wooden gong of any size *pate*, reserving the name *payu* for the single-ended drum and giving the name *nawa* to a double-ended drum; the word *kolilo* they believed to be a foreign (*pa wenua*) word for the gong (compare Manihikian *koriro*, wooden gong).

Wooden slit gongs are made in two or more sizes, a small gong for a high-pitched sound, a large gong for a lower pitch. All gongs are beaten with a wooden beater (*kaui*). Formerly, when a large chanting and dancing festival was held, the fore section of a canoe hull (*ma vaka*) was beaten to give a deep basic rhythm against which the higher pitched gongs provided counter rhythm; occasionally a whole canoe was carried to the dance ground and the gunwales beaten with sticks to make the dance rhythm.

The single-ended drum (fig. 50, *b*) was used as one instrument in an "orchestra" of drum and gongs to keep the rhythm for dancing and chanting on all occasions when chants were recited—at sports celebrations, wrestling triumphs, and death wakes. The usual drum was much bigger than the one figured, probably twice as high and twice the diameter. It was usually so high that a man could play it easily when standing before it.

The double-ended drum was between 3 and 4 feet long, made of *wakanawa* or *wetau* wood. Each end was about 12 inches in diameter, hollowed out to a depth of about 12 inches, and covered with shark skin which was tightened by a continuous lashing of sennit that passed back and forward between the two skins. Toward the middle of the drum two holes were bored through from one side to the other. Sennit was threaded through these holes, knotted together and the drum was slung round the neck by this sennit cord. The drum was beaten in the procession of the winning village to the dance ground when celebrating a sporting triumph. I did not see this double-ended drum; probably it is not an ancient Pukapukan musical instrument.

To play the drum is *lulu ki te payu*. The musician beats the skin surface with the fingers and heels of the hands, using the inner surfaces of the forearms to make stops demanded by the rhythm.

Wooden gongs and the shark-skin drum are still used in Pukapuka today to beat the rhythm for the introduced Tahitian style dancing. An empty

kerosene tin is also employed to increase the volume of sound for these dances. The wooden gong has been taken over by the church and is used to sound the time for family prayers and curfew each day.

WEAPONS

All Pukapukan weapons were made of wood. They consisted of two types of spear, a heavy throwing stick and a long billet club. Bow and arrow, and shield were unknown.

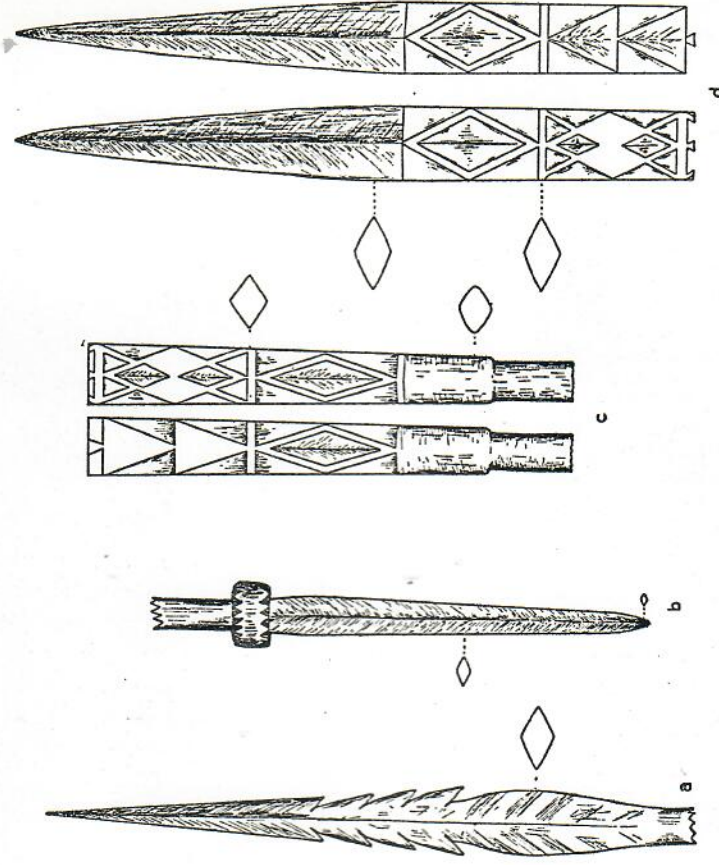


FIGURE 51.—Wooden spears. *a*, point of coconut wood spear (*tao*) (C8109): sharp point with sharp lateral edges, blunt mesial edges; barb commences $11\frac{3}{4}$ inches from point; barb ridges merge into handle of spear which has diameter of about $1\frac{3}{4}$ inches. *b*, elliptical guard, 17 inches from butt of spear, has greatest diameter of $2\frac{3}{4}$ inches, least diameter of $1\frac{3}{4}$ inches; butt of spear sharply pointed; doubtful whether elliptical guard is constant feature of Pukapukan spears; weight of spear $6\frac{1}{2}$ pounds, length 7 feet 10 inches. *c*, middle section of spear (*yuvelovele*) of *wakanawa* wood (C8066): cross section becomes round, continuing thus to butt of spear; carving designs consist of triangular spear heads (*wakatala*), single large lozenges (*patiole*), and combinations of both; each section separated from following by raised transverse bar. *d*, point section: sharpened with pronounced lateral and mesial edges. Weight of spear $4\frac{1}{4}$ pounds, length 9 feet $2\frac{3}{4}$ inches.

This is only example known of Pukapukan carving on implements or weapons; though modern it is probably authentic.

Spears (*tao* and *yuzvelo*; fig. 51) were both thrusting (*yoka*) and throwing (*velo*) weapons. When thrown they were always hurled by hand, a spear thrower being unknown. The heavy throwing stick (*koko*; fig. 52, a) was usually thrown at an opponent, the aim being to pierce a vital organ with its sharp point. At close quarters, it might also be gripped in the hand and used as a short stabbing weapon.

The favorite weapon seems to have been the long billet club (*kaio*; fig. 52, b). This was often decorated with streamers of *kie* pandanus. It was dipped in salt water before use to ensure a non-slip handgrip. When on guard (*apao*), the weapon was grasped in both hands and held horizontal at the waist. The technical stroke with the club was to strike the ankles of the opponent with a sweeping side blow (*te kama yele*, the tying blow), fell him to earth, and then finish him off with heavy blows on the head. The *kaio* club was also used as a parrying (*alai*) weapon to strike aside spears and throwing sticks flying through the air.

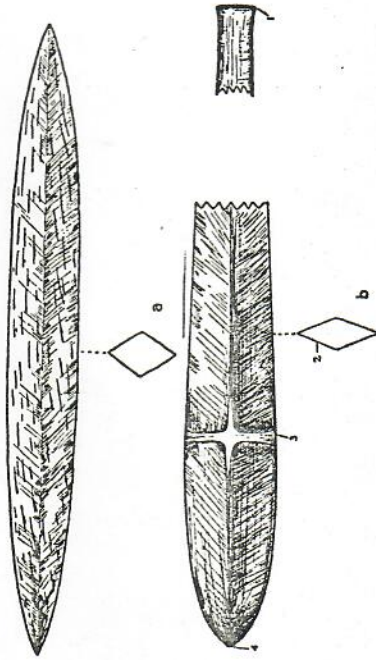


FIGURE 52.—Weapons. *a*, throwing stick (*koko*) of coconut wood (C8108): 27 inches long, width of each of four edges shown in cross section about 2 inches; each end sharply pointed; sharp lateral and mesial longitudinal ridges; weight 3 pounds. *A* second *koko* (C8107) of same shape is also of coconut wood; 34 inches long, edges about 2½ inches wide, weighs 5 pounds. *b*, billet club (*kaio*) of coconut wood (C8141): over-all length 6 feet ¾ inches; proximal end (1) slightly flared, 1½ inches in diameter; round in cross section up to 2 feet 6 inches from end where four blunt edges, lateral and mesial, start; width of each edge at cross section (2) about 2 inches; perceptible transverse ridge (3) intersects longitudinal ridges; four edges come to blunt point at distal end (4); weight 7 pounds. Second club (C3786) also of coconut wood: 4 feet 9½ inches long; diameter of proximal end about 2 inches, cross section edges of distal end about 2½ inches wide; pronounced lateral ridges, very blunt mesial ridges, no transverse ridge; weight 10 pounds.

For good aim in the use of all four weapons, the skilled warrior was careful to gain a firm foothold before engaging his opponent (p. 398). Informants were unable to elaborate on the technical strokes employed in using the *kaio* or other weapon.

SOCIAL ORGANIZATION

Each Pukapukan individual belongs, by the accident of birth, to six formal social groupings: a tribe, a village, a household group, a bilateral kin group, a grouping of maternal lineages, and a grouping of paternal lineages.

The name for both the island and the tribal grouping of the people as a whole is *Te Ulu-o-te-watu*. Though there are definite names for village and lineage groups, there is no defining name that may be properly applied to or translated as "tribe". No Pukapukan word expresses the idea of a family; no word is applied to a biological grouping of father, mother, and children. *Wanau* refers to a man's or a woman's family of children excluding the spouse. A man refers to his wife and children as his *puna*, not including himself. A household group is referred to as a *yikuanga*, the precise meaning of which is a household lot or site; by extension, *yikuanga* is also applied to the establishment of one extended family, including land, houses, property, and persons thereof. When a person refers to a particular household group, he specifies: "na tangata o te yikuanga e nono i te ngutuwaile o Mea" (the people of the *yikuanga* residing in the private home of So-and-so). The word *ngutuwaile* refers to one of the several separate household units of the extended family group residing on the same *yikuanga*. Analysis of the composition of the household shows that a biological family does not reside in each *ngutuwaile*. The household acts as a unit in the production of food for domestic consumption but is always subsumed by a larger group when large scale economic functions have to be carried out. The bilateral kin group is called *katiti*, *maclenga*, or *polipoli*. *Katiti* is the word in common use, but the three words all refer to a person's maternal and paternal relatives.

To procure specific information on the various aspects of social organization a census was made of 54 sample households in Ngake and Yato villages. In Ngake I went from house to house interviewing the oldest member of each household. In Yato, where my knowledge of the household grouping was greater, I procured information without a house-to-house canvass. All disputed points as to lineage affiliation and the like were referred to a group of older men who acted as a board of judges.

VILLAGE MEMBERSHIP

Membership in a village (*lulu*) by birth, adoption, or formal affiliation gives the privilege of participating in village activities and food divisions. Every person belongs (*tau*) to one of the three villages and shares in the food divisions of that village. One asks, "Ko tau la Mea i wea?" (Where does So-and-so share in village food divisions?). The answer is "Ko tau i Mea" (He shares in or affiliates with Such-and-such a village). Because the men control village food divisions, each woman and child must affiliate through the agency of a man. Of a woman or child then, the further question is, "Ko ai ko taua?" (Who is it who sponsors her?). The mechanism of affiliation is as follows:

When a child is born, its parents and relatives decide where it is to affiliate. Generally this is in the village of its birth and residence and through the agency of its blood father. A child whose adoption is arranged for at birth belongs from infancy to

the village of its adopting father. A child who is not adopted and who continues to reside with its parents in the village of birth may be "given" for economic or sentimental reasons to a male relative, blood or affinal, of either parent, to be affiliated by him with his village. A man refers to a child whom he sponsors in this fashion as his *tuanga tau*. If he were related only by marriage to the child's parents, he would nevertheless continue to sponsor the child even though he later divorced the woman through whom the relationship was traced. A person who is sponsored by a man in another village is closely united to him by ties of sentiment and interest, even though they live apart. A man would not willingly kill his enemy if the enemy had at one time been his *tuanga tau*, even though of distant relationship. (See story of Tuiva, p. 395.)

The result of the practice of sponsored affiliation is a redivision of food between the three villages: persons not residing in a village receive through membership in it a share of its food, including its unique products (as Yato's fruits, limes and papayas; Loto's sugar cane; or Ngake's supplies of crabs).

In most households only one or two children of a large family affiliate away from the home village. Where there are only two or three children in the family they normally affiliate through their father. Sometimes, though rarely, a *tuanga tau* child takes up residence in the household of the man who sponsors him. This is acceptable to the household because it means a gain of extra food shares (*zvai tuanga tau*). The food share of the individual is almost always more than he himself can eat at one time and so must be shared with other members of the household to avoid spoilage.

The shift of a member from one large household consisting mainly of young children to a small related household consisting of adults only is recorded. The motive of this exchange was to increase the food shares of the smaller household.

The following is an example of the application of village affiliation:

A widow who is head of a household (41 in table 5, p. 248) is sponsored in Loto by her brother. The oldest daughter is sponsored in Ngake by her mother's second brother, who resides there. The second daughter is sponsored in Loto by the mother's brother, who also sponsors the mother. The next child, a son, is sponsored in Loto by a distant relative of his mother. Another son, adopted but not living with his adopted father, is a *tuanga tau* of that man in Ngake. The next son, the only one affiliating in the village of residence, is a *tuanga tau* of his mother's sister's husband. The infant son affiliates in Ngake with the mother's brother. With no adult male food gatherer in the household, the affiliation arrangement of the children in all three villages brings in the maximum share in food divisions, as all but one member affiliate in Loto and Ngake, the two villages having the largest food reserves. The mother is also able to maintain close ties with her relatives in other villages so that she is not forgotten when a related fisherman makes a good catch. These results are all achieved without sacrificing children by adoption; when the children grow up, the mother is assured of ample support in her old age.

The shift of an individual from one household to the next within the same village involves no change in village membership. The shift from a household in one village to one in a different village is accompanied by change of affiliation:

Each village holds an annual meeting to make up its membership rolls governing food divisions, organization of work, and composition of reserve land guards and contest teams for the succeeding year. At this time a man who wishes to change his affiliation or to take on a new affiliate from another village requests the head man of the village (today usually an Island Council member) to add his or the child's name to the village rolls. Village members discuss the names of applicants which are added to the village lists if no valid objection is offered. The new member, called a *wilo* of the

village to which he changes his affiliation, has equal rights with those whose membership is by birth or adoption.

On achieving sociological adulthood (*wakatane*, *wakawawine*), a young man or woman may change (*wilo*) his village affiliation. Several boys have so changed village affiliation. A man might break away from his paternal group against its wishes and join another village. Divided loyalties might cause difficulties with his fellow-villagers and he would gain the reputation of being a trouble-maker or a lazy person. If he wished to rejoin the village of his birth, it would refuse to accept him or make unacceptable conditions of readmittance. The only course open to him would be to try to join the third village or to accept the conditions even if it meant the indignity of receiving a child's food share for one year.

No girl is known to have availed herself of her theoretical *wilo* privilege at the time of attaining adulthood. On marriage a woman automatically becomes a member of her husband's village to be sponsored by him, unless the couple take up matrilineal residence, in which exceptional case the husband becomes affiliated with his wife's village. No example of a husband and wife who affiliate in different villages is known.

The village in which a child is to affiliate may be determined by the likelihood of later inheriting talo beds or other properties in that village from the relative who is to sponsor it. Similarly a person may change his affiliation to the village in which he has come into possession of talo beds, house site, or coconut trees.

Informants suggested that formerly a man who became a new member of a village was expected sooner or later to change his residence to that village in order to reduce to a minimum tale-bearing, transfer of village secrets, plans, and policies, and the conflict of loyalties inevitably provoked by changing village allegiance. As long as change of residence accompanied change of affiliation, there was no objection to frequent change of membership. Indeed, if the new member was a champion in any sport his joining was welcomed by a village, though formerly when membership of competition teams was based on lineage affiliation, the new member often had to cut across these kinship ties because of village localization of paternal descent groupings. Change of residence does not often accompany change of village membership today, though with adults, it would be welcome as evidence of complete identification with the village joined.

Today, as formerly, a man without a village affiliation is lost and outcast. One who gains an unenviable reputation for antisocial conduct has to accept humiliation in order to secure a status, however slight, in the island community. There are no records of men without village affiliation. Village membership is evidently a fundamental necessity of Pukapukan social life.

MATERNAL LINEAGES

The *wua* is a maternal lineage which embraces several maternal sub-lineages each of which is called a *keinanga*. By lineage is meant a unilateral group of real blood kin. The *wua* is not to be confused with the maternal side of the bilateral kinship group. Descent within the *wua* is strictly maternal, whereas the maternal side of the bilateral kin grouping refers to both maternal-maternal and maternal-paternal descent lines. *Wua* means the life-generating female organs, and its extension to a definite maternal social grouping is a recognition of the importance of maternal descent as a cohesive principle which binds together the members of the group. Membership is by birth, with certain qualifications relating to adoption (p. 255).

The origin of the *wua* was discussed with informants on several different

occasions. There is much confusion in their minds on the subject, and no two men agree on all points of the story. The account given below will serve as a basis for the discussion of individual interpretations of the origin of the *wana*:

Ko Punga ma Punga Momoto, e lua tamaliki o Tumulivaka ma Te Matakiate. Ko ye taka lelei na mo kongia ia ma, me na Tumulivaka, me na Mataliki na tama ia. Koa matutua i a Punga ma Punga Momoto. Wanau loa na tama a Punga Momoto: ko te mango, ko te tawola, ko te wui ika pau. Yau na toe tama, ko te kati, ko te tupa, te kaveu, te kile, te tuli, te kawe, te wui tupua o lunga o te wenua. Ko na tama ia a laua ko te wui ika o te moana, ko te wui tupua a lunga o te wenua. Koa nono latou i lunga o te wenua, mea latou i na yanga kikinno.

Lili loa te atua, ko Mataliki. Lapa loa ki te uila mai lunga o te langi. Mimia loa na tamaliki a Punga ma Punga Momoto. Awungia loa latou. Mimia loa na toe tamaliki, welele loa ki loto o te moana, nanai; mai te tawola, te mango, te kakai, te pala, te wouu,—te wui ika,—mimia ki loto o te moana; mimia ki loto o te alo: mai te kiliotawaki, te ataolua, te tiwitiwi, te yama, te launuuui, te tau kokoti,—ko te wui ika i loto o te alo. Yau na toe tama a laua, ulu ki lalo o te wenua, mai te kaipea, te unga, te kaveu, te kiolo, ko te wui tupua i lunga o te wenua. Ko na toe tama a laua, welele atu ki na kongia mamao i na toe pa wenua, nanai: welele lalunga o te uluwenua, mai te tuli, te kawe, te kofili, te polopolounga,—te wui manu e welele la lunga. Wanau ai te wuanga o te mango, e tangata i lunga o te wenua. Tapai loa te ingoa o te wua o latou, ko te wua o Te Mango. Peia oki te tama a te tawola: wanau oki te tawola tana tama, e tangata. Ko tona tino o te tawola ia, na wano ki te moana, tupu atu ai, wai ika mo te moana. Ko tana tama na wanau i lunga o te wenua, tapai loa tona ingoa, Te Mango o Te Wui Tawola.

⁹ The reference to "evil works" reflects the embarrassment which informants feel regarding the incestuous propagation of their land.

Punga and Punga Momoto were two children of Tumulivaka and Te Matakiate. These and other parts (of the story) are not well understood; (that is) whether (they were) the children of Tumulivaka or of Mataliki. Punga and Punga Momoto were (now) grown up. The children of Punga Momoto were born: the shark, the whale, all of the many fish. Next the other children, the land creatures, the *kaipa* crab, the robber crab, the *kile* bird, the sandpiper, the curlew, all the creatures on the land. Their children (then), were the many fish of the sea and the many creatures of the land. They lived on the land, carried out their evil works.⁹

The god Mataliki became angry. He struck (the land) with lightning from up in the sky. The children of Punga and Punga Momoto hastened away. They were scorched. Some of the children disappeared, ran into the sea, hid there: such were the whale, the shark, the albatross, the *Ruvettius*, the turtle,—all the fish rushed into the sea, (or) rushed into the lagoon, such as the *kiliotawaki*, the *ataolua*, the *tiwitiwi*, the *yama*, the *launuuui*, the *tau kokoti*,—all the fish of the lagoon. Next, their other children hid under the land, such as the *kaipea* crab, the *wua* crab, the robber crab, the rat, all the creatures on the land. Their other children flew away to distant places in other island groups, hid there: they flew above the treetops: these were the sandpiper, the curlew, the plover, the turnstone,—all the birds that fly on high.

The shark gave birth to its offspring, a human being on the land. The name of their *wua* was given, the *wua* of Te Mango (the shark). Similarly the children of the whale: the child of the whale was born, a man. The body of the whale went to the sea, grew there, breeding fish for the sea. Its child born on the land was given its name, Te Mango o Te Wui Tawola (the branch of the whales).

Ko te tupuanga o te Wua Lulu: Me te mea ko te wawine no loto mai ana te wua, e tupu mai ai te tangata. Wanau ai loa, tupu ai tangata. E wua ia no te Pukapuka. Pe la oki na tama a Punga Momoto: e wua oki te mea ko tupu mai ai. Tupu loa te wua, ko te Wua Lulu.

Wanau ai na tama a Te Mango, a te tangata i lunga o te wenua nei: ko Te Lokite, e tamawine na Te Mango; ko Yeitae, ko te toe tamawine a Te Mango; e lua munga na Te Mango. Wakatupu i a Lokie tona wuanga, tupu mai. Peia oki i a Yeitae.

Ko Te Tawola, koa wanau tamaliki Te Tawola: Ko Te Yelu, ko te toe tama a Te Tawola; ko Te Manga o Te Manu, ko te toe tama a Te Tawola. E lua na tama a Te Tawola, ko Te Yelu ma Te Manu. Pau ai na tamaliki a Punga Momoto na wanau o te moana.

Ko na tamaliki a Punga Momoto na nana ki ngauta: Ko Te Kati, ko Pukapuka te toe, ko Malemu te toe, ko Te Lawala te toe. Ko te toe tama a Punga Momoto, Te Kiolo. Ko te toe, Kenakena. Ko te wanau a Kiolo, wanau mai ai te tangata; peia oki te wanau a Kenakena, peia oki te wanau a Pukapuka, peia oki te wanau a Malemu, peia oki te wanau a Te Lawala. Koa wanau a latou tamaliki wolo ki lunga o te wenua. Koa wolo te tangata ki lunga o te wenua.

As to Te Tawola, Te Tawola bore children: Te Yelu was one child of Te Tawola. The branch of Te Manu (the Bird) was another child of Te Tawola. There were two children of Te Tawola, Te Yelu and Te Manu. This finishes the children of Punga Momoto born of the sea.

(These are) the children of Punga Momoto who hid inland, (that is) the Kati: Pukapuka was one, Malemu another, Te Lawala another. Another child of Punga Momoto was Te Kiolo (the Rat); another, Kenakena. As to the children of Te Kiolo, people were born. So too the children of Kenakena, of Pukapuka, also the children of Malemu, and also the children of Te Lawala. Their many children were born on the island. The people on the island were many.

NOTE: The above account stresses the point that the children of Punga and Punga Momoto were animals of the land and animals of the sea. In earlier discussions, other informants stated that the offspring of these two grandchildren of Mataliki were humans. When the lightning struck the house in which Punga and Punga Momoto were living, the children rushed outside to seek protection. Some ran to the sea for shelter, hiding under the water, under reef coral heads. Others of the children rushed to the bush, and hid under trees, in the holes of land animals, under rock shelters. When the panic was over, one of three things happened. The text account states that the land animals and the sea animals gave birth to human children who became the ancestors of the various lineages. Another version is that the human children came from hiding and then commemorated the event by taking names from land and sea animals, according to whether they hid in sea or on land. A third opinion is that the children remained forever where they hid and were turned into land or sea animals. According to this version, not all the children were stricken with panic. Those that remained human named themselves after the forms of their now transformed brothers and sisters and these names

As to the growth of the Wua Lulu: (it is) like a woman inside of whom is the ovary from which grow people. She conceives, people grow. This, in Pukapuka, is called *wua*. Like this were the children of Punga Momoto: it was a *wua* also which grew from them. The *wua* grew, the Wua Lulu. (This included both the *wua* of Te Mango and the branch of the Tawola.)

The children of Te Mango, of the people on this island, were born. Te Lokie was a daughter of Te Mango; Yeitae, the other daughter. These are two branches of Te Mango. Lokie produced her offspring; they grew. Yeitae did the same.

As to Te Tawola, Te Tawola bore children: Te Yelu was one child of Te Tawola. The branch of Te Manu (the Bird) was another child of Te Tawola. There were two children of Te Tawola, Te Yelu and Te Manu. This finishes the children of Punga Momoto born of the sea.

(These are) the children of Punga Momoto who hid inland, (that is) the Kati: Pukapuka was one, Malemu another, Te Lawala another. Another child of Punga Momoto was Te Kiolo (the Rat); another, Kenakena. As to the children of Te Kiolo, people were born. So too the children of Kenakena, of Pukapuka, also the children of Malemu, and also the children of Te Lawala. Their many children were born on the island. The people on the island were many.

became the names of the lineages thus formed. The variations need not be reconciled. They are interesting as variations on a theme that explains mythically the origin of an important social group.

In the beginning when the maternal lineages were thus originated there were two main groups, Kati and Lulu. Kati is the generic name for all land creatures, hence Wua Kati may be translated as the land people. Lulu is the common term for a gathering and refers here to the remainder, those not land people. Hence the Wua Lulu is the sea people. These two main maternal lineages are again divided into two main sections. The divisions of the Wua Kati are Wua Uila (lightning) and Wua Kati. The divisions of the Wua Lulu are Wua Tawola (whale) and Wua Mango (shark).

Another account states that the main divisions in the beginning were Wua Lulu and Wua Uila, which on subdivision became Wua Mango, Wua Tawola, Wua Uila, and Wua Kati. Hence whatever the priority of names, the result on subdivision is the same in both accounts. Informants were unclear as to whether there was a priority of groupings such that originally there was a clear dual division, which later became a fourfold division, subsumed by two main named groups. The text account suggests not. Other statements suggest that of the Lulu group, Mango was the first-born child, Tawola the second-born child. This would definitely mean temporal priority for a dual division. The matter is important, because the suggestion is here strong that originally the maternal division of Pukapukan society was in terms of matrilineal moieties, perhaps of matrilineal phratries. I think it likely that whatever the matter of priority, which cannot be decided at this date, there was originally a dual division, each division being again subdivided into two groups, such that a matrilineal group of sea people was opposed to a matrilineal group of land people. Further discussion of the functions of the maternal lineages will show that this dual organization was important for both economic and social organization.

The text account states that a further division into maternal sub-lineages (*keinanga*) occurred at the time of the original formation of the groups. Other informants agreed that as the maternal grouping became numerically large and too unwieldy to control its members, various women broke away from each lineage to form smaller matrilineal sub-lineages (*keinanga*, *momo*, or *manga*), each of which, however, remains subsumed under the larger grouping. The grouping of this later period, which continues to this day, is as follows:

Beaglehole—Ethnology of Pukapuka

- Wua Kati (moiety)
1. Wua Uila—Keinanga
 2. Wua Kati—Keinanga
- Wua Lulu (moiety)
3. Wua Mango—Keinanga
 4. Wua Tawola—Keinanga

- | | |
|----|----------|
| a. | Kiole |
| b. | Loloa |
| c. | Kenakena |
| d. | Pukapuka |
| e. | Malenu |
| f. | Lawala |
| g. | Walawale |
| h. | Kava |
| i. | Lokie |
| j. | Yeitae |
| k. | Yalo |
| l. | Yelu |
| m. | Manu |

Informants tended to visualize the matter in terms of a tree with spreading branches and limbs (fig. 53). The names of the sub-lineages as given in this figure represent a final decision by informants. Other lists, procured at an earlier period of field work, differ a little in the given names. A second list of lineages and sub-lineages, probably for a later date when some sub-lineages had died out or were displaced by other named groups, is given below. The first list is probably the classic list; the second is the grouping as some understand it today.

- Wua Kati (moiety)
1. Wua Uila—Keinanga
 2. Wua Kati—Keinanga
- Wua Lulu (moiety)
3. Wua Lulu—Keinanga
 4. Wua Layo or Yalo—Keinanga
- | | |
|----|-----------|
| a. | Kiole |
| b. | Kenakena |
| c. | Malenu |
| d. | Lawala |
| e. | Pukapuka |
| f. | Mango |
| g. | Kava |
| h. | Lokie |
| i. | Yeitae |
| j. | Lakawanga |
| k. | Yelu |
| l. | Tawola |
| m. | Manu |

An analysis of the lineage membership of 160 adults showed 89 members of the Wua Lulu, 69 of the Wua Kati, 1 of Layo, and 1 member of Yalo.

The individual who first gave his membership as Wua Layo, Keinanga Tawola, later gave his affiliation as Wua Lulu, Keinanga Kava. Sixteen who said they belong to Keinanga Lakawanga gave Lulu as their major maternal grouping; one member of Keinanga Lakawanga gave Yalo as his major maternal grouping; this last is either a mistake or else Wua Lulu is to be understood as moiety Lulu, which is more likely. The three persons who gave their grouping as Uila, Keinanga Kiole, are brothers and a sister; a third brother said he was a member of Wua Kati, Keinanga Kati. Kati was given as the major maternal grouping of 16 other members of the Keinanga Kiole; here again Kati must have the sense of moiety. The point to note, however, is that the large majority, 155 out of 160, gave as their *wua* either Lulu or Kati, thus giving the very definite impression that these two groupings are still functioning in Pukapukan society as effective moiety groupings of the maternal lineages.

Each of the 160 adults professed membership in one of 12 different sub-lineages (this excepting the person who gave a double identification, first, Layo, Tawola; then Lulu, Kava). The active sub-lineages in the moiety Lulu are: Mango, Lakawanga, Yelu, Kava, Yeitae, Lokie; those in the moiety Kati: Kiole, Pukapuka, Kenakena, Lawala, Kati. The relative numerical strength of the sub-lineages is: Kava (L) 36; Yelu (L) 24; Kati (K) 20; Kiole (K) 18; Lakawanga (L) 18; Pukapuka (K) 12; Kenakena (K) 11; Mango (L) 7; Lawala (L) 4; Yeitae (L) 4. The relative numerical strength of these sub-lineages might possibly be altered by adding in figures from Loto village, but, because there seems to be an equality in the village distributions of the sub-lineages, the relative strengths would not differ materially from the serial order given above.

Twenty individuals gave their affiliation as Keinanga Kati, Wua Kati, either because they did not know their sub-lineage and gave only their moiety, an unlikely matter, or else because some individuals claim descent through a major maternal lineage directly and not through any sub-lineage. When the smaller groups were formed by the breaking away of lineages, some individuals remained members of the original *wua* grouping, so that the four *wua* must be considered both as groupings of smaller sub-lineages and also as single lineages in their own right. This single *wua* descent is noted for both Kati and Mango in the above list of membership strength. No examples are on record for Tawola or Lulu, but doubtless they do occur also.

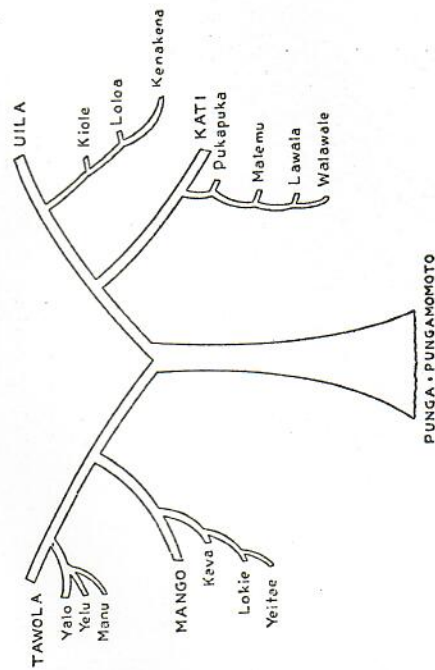


FIGURE 53.—Branching of maternal sub-lineages (*keinanga*), from informant's drawing. Main trunk of tree represents total population; main branches four main groupings of maternal lineages (*wua*); remaining smaller branches, individual sub-lineages.

The *wua* membership of the 38 heads of households in Ngage village was noted; 16 belong to the Lulu division, 20 to the Kati division. This shows a reasonable amount of moiety equality, and seems to indicate in fact that there is no tendency to either moiety or lineage localization. This is presumably explained by the rule of patrilocal marital residence.

The internal organization of each maternal lineage is simple. The head (*wakataula* or *wakabulu*) of the lineage is the oldest man or woman in the

group. If the head is a male, he is succeeded at death by the next oldest member, sometimes by his sister's son. His functions are light. He acts as gift-giver at the *waele* feasts for first-born children in the families making up the descent group. He represents the lineage at inter-lineage and village meetings, arranges for the carrying out of its activities in games, competitions and feasts. He has no special status in the community beyond a certain position within his own group, based on seniority. There is no record today of internal moiety organization, but it is likely that the senior lineage within the moiety formerly appointed a head man to oversee the affairs of the moiety.

No tapu objects are linked with the maternal lineages today. No gods were linked with them in former times.

Informants had little clear memory of any association between moiety, lineage, or sub-lineage and plant, animal, or natural phenomena. There is no suggestion of any relationship that could be construed as totemistic.

It is possible that formerly each lineage had associated with it a type of decoration, or an object used as a status or prestige symbol. A suggestion of this occurs in the chant, "Panenu Te Watu, kino te wenua" (1); informants thought a reference to the *lei*, a seaweed that grows in the ocean and is said to color the sea red or yellow or green, was associated in some way with the Wua Uila. Informants were unable to define this relationship, nor could they in general give the names of other plant or natural phenomena linked with any of the other lineages. Two reliable informants, however, asserted that the *wetou* and coconut trees were linked with the Lulu, and the pandanus tree with the Kati groups. They could give no details of this linkage and this reference may refer to a time when there was a type of prestige symbol associated with each lineage, a matter otherwise totally forgotten today.

Today the sub-lineages are strictly exogamic. To marry a member of one's own sub-lineage is to commit incest (*kai wale*, "house eating" or *kai kiko*, "flesh eating"). There was no secular punishment for this breaking of tapu, but the goddess Tawa or the god of his paternal lineage would punish a male deviant with sickness, tumors, or accidental death by falling from a tree; and Mataliki or the god of her paternal lineage would punish a woman with sickness, accidental death, difficult childbirth, loss of her child in childbirth, or barrenness.

The maternal lineages are neither exogamic nor endogamic. The members of a lineage, provided they do not belong to the same sub-lineage, may intermarry if the other rules governing marriage, avoidance tapus, and rules of consanguinity are not infringed.

In former times, before the sub-lineages had subdivided themselves from the lineages, the moieties and lineages were possibly exogamic, and the lineages functioned as clans. As the number of lineages in each group increased and subdivided into smaller functional units, each sub-lineage continued the pattern of exogamy derived from the larger unit, and there was then no need to stress lineage exogamy. More precisely, exogamy,

transferred to the smaller sub-lineages, took the place of exogamy in moiety and lineage. As long as there was one lineage in the *wava*, the *wava* was exogamous. When many sub-lineages developed within the *wava*, the sub-lineage still remained exogamous but not the lineage, since blood relationship was closer, owing to consanguinity, within the simple sub-lineage than within the wider grouping. This is admittedly speculation, but it explains the manner in which the fundamental pattern of exogamic matrilineal groups, so widespread in western Oceania, may have developed in the evolution of Pukapukan society.

The maternal lineage functions as a unit in fishing and sporting contests, and in certain types of food divisions. (See pp. 231-232.)

Some informants believed that the four major lineages divided into two moieties (each called for this purpose *wakatai*) once formed fighting units occasionally opposed to each other. Such a moiety fighting force had no organization and was commanded by a selected warrior (*toa*). Other informants stated, however, that there is no record in Pukapukan history of such fighting as this arrangement would suggest, with all the men of the island engaged in pitched battles. This is certainly true; Pukapukan fighting in general seems to have been a matter of one age group tyrannizing over another group, petty murders, guerilla revenges, and killings by violent chiefs. More important conflicts over land boundaries were always decided on a village basis, with no scope for moiety division. It is possible that moiety divisions for games and contests were at one time more customary than single lineage divisions, and the belief about fighting units is merely an extension of a type of organization, which, in terms of Pukapukan patterns, represents the most reasonable division to cover warfare were it ever a matter of importance to the community.

Today the maternal sub-lineages, not the lineages or moiety groupings of lineages, have effective economic functions in the control of land, principally the control of talo beds. The talo beds owned by a sub-lineage are divided among both male and female members of the sub-lineage. There is no permanent subdivision of these talo beds; but they are divided at regular intervals as composition of the sub-lineage corporation is altered by birth and death. The ultimate controlling unit of the sub-lineage land is, of course, the major lineage; when a sub-lineage dies out, the talo beds are redivided among the remaining sub-lineages of the group.

Formerly the sub-lineage assumed collective responsibility for antisocial actions voluntarily or involuntarily performed by its members. This is clearly brought out in historical stories relating to homicide (1). When a man commits manslaughter such that the island as a whole concerns itself with retributive punishment, his maternal sub-lineage either allows itself to be punished along with the guilty individual or else assumes responsibility for the punishment or suicide of the murderer. When punishment by drowning is decreed, members of the sub-lineage may feel the disgrace so keenly that they will bury the body secretly by night, even though in so doing they oppose majority opinion and would be severely punished themselves if discovered. That it is always the maternal and not the paternal sub-group which is charged with responsibility in these matters, stresses the strength of relationship ties based on maternal descent.

PATERNAL LINEAGES

There are seven principal paternal lineages in Pukapuka. Each lineage is a *po*. The word *kainiga* is used synonymously with *po*, but informants thought this usage modern. The term *po* is also applied to the burial ground associated with each paternal group. Other meanings of *po* are "night" and the "Underworld". When a man talks of his *po*, he means his paternal lineage and the piece of ground where he will be buried. The importance of the burial ground as giving a symbolic locus of reference for the varied functions of the lineage is shown by the fact that when asking the paternal lineage membership of a person one does not say: "What is his *po*?" but, "Where will he be buried?" (*Ka tau i waa?*) The answer always provides the name of the burial ground. On the other hand, in narrative the name of the *po* is always used as an adjective to indicate paternal descent affiliation, as, "Ko Pakula, e tane Matanga" (Pakula was a man of Matanga *po*).

Membership in a paternal lineage is by birth or adoption. An individual is buried in the cemetery of his sociological father. A woman is buried in the cemetery of her father; her children, male and female, are buried in the cemetery of her husband. Each of the paternal lineages is divided into a number of smaller paternal sub-lineages called *wakavae*. Each major cemetery of the lineage is divided into a corresponding number of sections, also called *wakavae*. Hence a man and his children belong to a *po* but also to a *wakavae*. The *wakavae* may be regarded as a paternal sub-lineage, the *po* as a grouping of paternal sub-lineages into what is here termed a lineage. A final list of Pukapukan lineages and their sub-lineages is as follows:

VILLAGES	PATERNAL LINEAGE (Po)	PATERNAL SUB-LINEAGE (WAKAVAE)
Ngake	Muliwutu Matanga	Yalou, Alike, Alia Paku-i-tua, Te Manako, Waka-moe-ki-te-loto, Angialulu
Loto	Yangalipule or Tilotilowia i Tua	Wakavae-ki-nua, Yangaliponepene, Yamanaia
Yato	Yamaunga Yayi Yalongo	Wakavae Alike, Wakavae-ki-muli, i Tua, Walanga-kuia Wakavae-ki-nua, Wakavae-ki-muli Tokelau, Matanga Wakavae-ki-nua, Wakavae-muli-vae, Walepia

NOTE: Various lists of the lineages and sub-lineages were collected during our stay. The above list represents the names procured toward the end of our visit, and is a clarification of earlier lists. As with the names of maternal lineages (*wava*) and sub-lineages (*kainiga*), there was a progressive clarification in the minds of informants as our investigation proceeded. Common, unstructured opinion tends to confuse paternal lineage and sub-lineage, a natural tendency, perhaps, to promote one's sub-lineage to the status of a lineage. It is likely that the relative numerical strength of lineage and sub-lineage, and also their status, have fluctuated during the course of Pukapukan history owing to natural causes and to the predominance of certain personalities at certain times.

Neither paternal lineage nor sub-lineage was exogamous or endogamous. Intra-marriage was governed by rules of consanguinity. No totem objects or prestige symbols were associated with any of the paternal lineages. Certain gods were associated with the paternal groups. (See p. 308.)

The amount of lineage localization in the two villages for which information is available is comparatively large, as is to be expected from the operation of the rule of patrilineal marital residence. Of 39 male heads of households in Ngake whose residence is patrilineal, 37 men or 95 percent are members of the two Ngake paternal lineages, Muliwutu and Matanga. In Yato, 27 out of 33, or 82 percent, are members of the three Yato paternal lineages, Yamaunga, Yayi, and Yalongo.

There is no mythological account of the origin of the patrilineal lineages. Informants make the simple statement that after the seismic wave that devastated the island thirteen generations ago, only 15 men and their families were left of the original population. From these men the present population has descended. Seven of the men founded anew and named patrilineal lineages from which, by a process of fissure when numbers became great, other minor sub-lineages split off. Nothing is known of the lineages previous to the seismic wave, but informants presume that there were in existence similar named patrilineal lineages.

Various instances of irregular lineage membership came to my attention:

Children of a Pukapukan woman and a non-Pukapukan husband, white or native, go to the mother's cemetery for burial; the husband also acquires membership in his wife's paternal lineage.

One Pukapukan whose wife is deceased, has remained, together with his children, in residence in the household of his father-in-law. For reasons of sentiment, he has arranged with his father-in-law for himself and his children to be buried in his late wife's cemetery, the cemetery of his father-in-law.

The child (*tama to takā*) of an unmarried mother is a member of its mother's paternal lineage, unless later adopted by the mother's husband when she marries. A child conceived out of wedlock, but born after its mother's marriage to a man not the physiological father of the child, is regarded as the child of his mother's husband and is a member of his paternal lineage; the husband becomes the sociological father of the child.

X is a *tama to takā*, adopted into the paternal lineage of his maternal grandfather's father. His grandfather does not belong to that group, having been adopted into another. X's mother belongs to the lineage into which her father was adopted. Wishing for sentimental reasons that her son and offspring go to the same cemetery as her father, she is going to substitute for her son, and be herself buried in the lineage-cemetery into which he was adopted, so that he and his line may exchange groupings with her.

Only one instance is on record of sharing children between the lineages of the father and of the mother. The siblings—father, father's sister, father's brother—in household 45 of table 5, all belong to the paternal lineage of their mother. Three siblings, now dead, all went to the father's paternal lineage. No adoption was involved in this division of the children among the two groups. It was specifically described as an idiosyncrasy on the part of both parents for which no motivations could be advanced today, as the arrangement was made about 55 years ago. It is possible that the division was influenced by southern Cook Islands practice.

The part played by the paternal lineages in regulating marriage, descent, succession, and inheritance, and the relative importance of maternal and paternal lineages in social organization are discussed elsewhere.

Close bonds unite a man to his paternal lineage and to his burial ground. Admittedly, he inherits land, coconut trees, and houses through his father, but beyond this, there is a real sentimental bond binding a man to his paternal grouping. It is always the paternal lineage and never the maternal lineage of a man that is mentioned at the beginning of each genealogy or story; informants somehow felt that by naming his paternal lineage, the hero of the story was placed and his status in the community accurately defined. The resident agent has had great difficulty in persuading the people that some cemeteries are too close to the villages to accord with ideals of modern public health. The conflict has become acute when the agent has insisted that the cemeteries be closed or the villages moved elsewhere. Either alternative has seemed impossible to the people of the lineage affected, and in one prohibited cemetery a burial was prevented only by placing the Union Jack across the already gaping grave and appealing to the loyalty of the people not to touch the sacred emblem of Pax Britannica.

The paternal lineage does not seem to possess any formal structural organization. There is no council of the men of the group. Formerly each lineage had its constituted priests who worshipped the gods of the lineage in religious structures erected on lands of the group. Each lineage had a secular leader, with the rank, in a minor lineage, of sub-chief (*langatila*), in a major lineage, of high chief (*aliki*) or chief (*wmi aliki*). (See pp. 234-237.) Doubt exists in the minds of informants as to whether the word *langatila* is a Pukapukan word; some informants insist that it is not and that the correct designation for a minor chief was formerly *wmi aliki*, a collective word also applied, apparently, to an individual. Today *langatila* and the Rarotongan word *mataiapo* are used to designate the two groups of minor chiefs.

LINEAGE AND VILLAGE

For feasts, sports, and games, the community divided itself into smaller units based upon paternal lineage (*yolongo* unit), maternal lineage (*wma* unit) or village membership (*matoyinga* unit, sometimes called *lulu kakai*), depending upon the specific activity. Membership in the *yolongo* unit is modified by the rule of patrilineal residence so that children adopted elsewhere and members of the lineage married into another village are excluded while persons residing with the patrilineal group through marriage or adoption are included.

Team membership for fishing and sporting contests was formerly always based on maternal lineage membership. One moiety contested against another moiety. At a later

period, organization was in terms of either *via* or *volongo* units. Village membership is the rule for team organization today, so that Loto village contests with Ngake and with Yato villages. It is probable that missionary effort hastened this change. Informants believed, however, that groupings of maternal or paternal units are superior to the village grouping. The following example was given: suppose there is a man who was born in Ngake, but who affiliates and resides (*wilo*) in Yato. In an inter-village contest he fishes for Yato. He hooks a fish. If he pulls it into his canoe, his Ngake friends are angry with him for catching a fish for a rival village, and thus helping to defeat the village of his birth. If he lets the fish escape, his Yato friends are angry with him for remembering the village of his birth to the exclusion of his adopted village. Hence the man is at the mercy of conflicting loyalties, and he antagonizes friends whichever way he acts. The old maternal or paternal organization, therefore, was superior to the present village division.

Food divisions following fishing contests and other games are always in terms of either maternal or paternal organization. They are arranged in advance by village elders and food distributors. Before the division of food for a fishing contest (*malana*), the food dividers asked me how I wished the food to be divided. As I left the responsibility to them, they decided to make the division on the paternal (*volongo*) principle. The food was first divided into three equal piles for the villages; then each pile was divided among the paternal lineages of each village.

Food divisions at marriage and birth feasts were formerly always in terms of maternal units. This is still common today, though division is sometimes made among the actual household groups concerned in the marriage. Food divisions of reserve lands produce are always in terms of village division. This follows the rule that control of reserves and work thereon is always maintained by village groupings.

It is a permissible speculation to consider Pukapukan history as a struggle for dominance between these three social groupings, principally however, between the maternal and paternal lineages. At the present time, the paternal lineage is much more important in social organization than the maternal grouping. The maternal sub-lineages still influence marriage and control land, but they share these functions with the paternal lineages and with the villages. The smaller maternal lineages seem to be dying out, or at least to be more and more subsumed by the moiety groupings. Dwindling numbers could easily be remedied by recourse to adoption, but maternal lineage adoption is rare, for the reason that few wish to take the trouble to keep the maternal lineages alive. The fact that the maternal lineage memberships of the principal characters in legends and stories are not remembered suggests that even in an immediate past these groupings were not so important as the paternal groupings. At the present time, the paternal lineage is strong in its control of wealth, rank, inheritance, and succession. Both paternal and maternal lineages control food divisions and previously controlled organization for contests.

Kennedy (19,p.297), speaking of Vaitupuan social structure, especially with reference to the exchange of presents at marriage and birth, sees definite evidence "of dual organization and matrilineal descent". The maternal lineage in Pukapuka also functions as a controlling unit at birth and marriage. Kennedy believes that in respect to dual organization, Vaitupu "was at a

stage of transition from matrilineal to patrilineal descent wherein the point of equilibrium had not long been passed in favor of patrilineal descent." This is strikingly parallel to Pukapuka, but unfortunately Kennedy's analysis of Vaitupuan social structure is so unclear that no more particular comparisons may be made.

POLITICAL ORGANIZATION

AGE GROUPS

Pukapukan society has a well-developed system of age grades through which each individual passes. Political functions for the island as a whole were at one time exercised by men of the oldest age group, the *tupele*. These men served as an advisory council to the chief (*aitiki*), who might be of any age group. Control of village affairs was and is nominally in the hands of all the men of the village, though older men naturally have more power because of their experience; women have no formal political duties. Membership in successive age groups was determined by the functioning of a mechanism called *tai tangata*:

The age of a person is reckoned from birth. The first woman to give birth to a first-born child in each season of six months, whatever her paternal or maternal lineages or her village, announces that her child is the *tai tangata* for that six-month period, which is then called *te takalanga o Mea* (the year—six months—of So-and-so). All other children born in the same period are classed in the age group of this *tai tangata* and are known collectively as a *tai tangata* group. Hence a man says: "Koa wanau au i te takalanga o Mea" (I was born in the year of So-and-so), or, "Ko Mea, te wakalutuki o taku tai tangata" (So-and-so is the first-born of my *tai tangata*). If, as occasionally happens, no first-born child is born in the *maia ututu* (pleasure moons), then the eldest first-born child of the succeeding *maia ya* (tapu moons) becomes the *tai tangata* of the preceding *maia ututu*, and all children born during the twelve-month period are classed with this *tai tangata*. There is thus a slight variability in *tai tangata* periods, but the important thing to remember is the serial temporal order of the *tai tangata*. This enables a person to reckon his age with sufficient accuracy for practical purposes. One *tai tangata* group succeeds its predecessor in progressing from one age grade to the next. No mnemonic device is used to keep track of the order of *tai tangata*.

The Pukapukans named a number of age grades or life periods:

Kulapupuni (child covered by a mat): infant up to the age of about 3 months.

Kulamoeoe (sleeping child): infant from 4 to 12 months.

Kouamoto (immature coconut): boys and girls from walking age to about 10 years, also called te tamaliki or te kauliki (children).

Taumalanga and tautitanga (to put on a malo or kilt): youths and girls who have reached sociological adulthood.

Kivatangaloo: young people who have assumed first responsibilities as adults; more commonly called lopa and tamawawine.

Tane and wawine: married men and women, adults with families.

Mulivaka or tangata matua: older men and women of the community, from the age of about 50 years on.

Tupele: the old, grey-haired men of the community, sometimes called in general te kau matua.

The *lopa*, *tane*, and *waavine* carried out much of the economic and social activity of the community. The *mutivaka* generally directed group activities by virtue of their experience. Their advice was also listened to with respect in informal village meetings, and they took the lead in organized village work. The *tupele*, the most important group in the political organization and control of the island as a whole, formed a sort of island council, which, with the chief, governed the island both politically and economically. Each old man lived with his wife and family in his own village but was relieved from the necessity of providing himself with food; the *tupele* were supported by the community, by gifts of talo from the women and by fish caught by the men's *tanganga* fishing group.

All gatherings and meetings of the old men were held at the *avanga* (*mala*) *no te tupele*, a meeting place formerly situated in Loto village, to the east of the church and to the right of the present road, a site now occupied by houses. The old men might gather at their meeting place each day or several times a week, depending on the business to be transacted and the amount of food to be divided. The number of old men varied from year to year, ranging from 10 to 30. The lowest number on record is six.

There was no special time for the accession to the group of new *tupele*. When a man was sufficiently old and grey, he formally joined the group; his accession might be marked by a small food division among the *tupele* themselves.

It is related that long before the time of Tuiva (nine generations ago), the number of old men was increased to include younger men. The younger people were idle and turned their idleness to mischief in working off personal spites and jealousies against still younger adults (*lopa* and *tane*) by withholding food divisions and then resorting to violence when the young men objected. (See p. 391.) Tuiva initiated reforms providing that no man might become a *tupele* until he was so old as to be unfit for active work. *Tupele* were therefore so feeble physically that their children had often to carry them to the meetings of the group.

The oldest man of the *tupele* group functioned as their leader. He became the right-hand man of the high chief (*aliki wolo*) by virtue of his experience and age and was then called the *wola*. The *wola* was both the spokesman of the chief and the mouthpiece of the people. In addition, he had special priestly powers, and communicated with the major gods of the island on the religious structure of the lineage of the chief. This power was vested in him irrespective of his own lineage membership.

CHIEFTAINSHIP

Status and rank grades in Pukapukan society were not highly developed. The superior chief of the island was *te aliki wolo o Te Ulu-o-te-watu* (the major chief of Head-of-the-stone, Pukapuka). The subordinate chiefs were

te wini aliki (the many chiefs). The remainder of the community were without rank and were simply called *te kau* or *te tama* (the people or the children). The chief's executive (*wola*) was next in rank to the supreme chief, but his position was not hereditary. Informants stated that each of the several subordinate chiefs had an executive (*wola*) to advise him. These sub-executives were the oldest men (*tupele*) of the several villages and chiefly lineages and shared priestly functions with the minor chiefs whom they served. It is possible, however, that informants were unconsciously magnifying the former status of minor chiefs in order to glorify their own lineages; or else they were generalizing about the status of these chiefs in terms of a particular historical set-up when a minor chief may have assumed some of the powers which properly belonged solely to the supreme chief of the island.

Another ranking official sometimes spoken of was the *yula*, a name which appears only in connection with Tuiva, who acted as a sort of regent or supreme head of the island during an interregnum in the line of the high chief. It is possible, however, that the *yula* was formerly a high-ranking peace officer, deputy to the chief, without priestly functions. Informants are unclear as to his position at times other than during the regency of Tuiva.

The chiefly set-up in former times varied from that of today. Formerly, probably up to the time of white contact, the chiefs of the island were:

VILLAGE	PATERNAL LINEAGE	CHIEFS
Ngake	Muliwutu Matanga i Tuva	One aliki (chief), one langatila (sub-chief) One aliki, one langatila One aliki wolo (supreme chief), one langatila
Loto	Yangalipule Yalongo	One langatila One aliki, one langatila
Yato	Yamaunga Yayi	One langatila One langatila

This gives a total of one supreme chief, three other chiefs, and seven sub-chiefs. The number of sub-chiefs (*langatila*) may at times have been larger, because a powerful paternal sub-lineage could well have claimed the right to nominate its own minor chiefs. No record survives to enable this question to be settled. With white contact and the control of the island by a resident agent and nominated council, changes have been made in the number and names of the chiefs. The Cook Islands term *mataiapo* has been introduced as a name for the minor chief. The present set-up includes one supreme chief (*aliki wolo*), seven other chiefs (*mataiapo*), and four sub-chiefs (*langatila*):

VILLAGE	PATERNAL LINEAGE	CHIEFS
Ngake	Muliwutu	Two mataiapo, one langatila
Loto	Matanga i Tua	Two mataiapo One aliki wolo, one langatila
Yato	Yangaiipule Yalongo Yamaunga	One mataiapo Two mataiapo Two langatila

Informants are confused today over the former status of the high chief and the other chiefs. The following description seems to have applied both to the high chief and to the chiefs of the other lineages; it excludes the sub-chiefs (*langatila*) who seem to have been more executive officers of the major chiefs than chiefs with status in their own right. Some informants believed that the chiefs were regarded as the fathers of the people and were approached by anyone at any time without ceremony or violation of tapu; that they were tapu only when they visited the sacred structures (*awanga*) of their lineage gods to seek some favor from the gods.

Majority opinion holds, however, that the chief was sacred from the time he was inducted into office on the sacred structure of his lineage. During youth and boyhood, he, like his siblings, was without tapu and mixed freely with the other young people of the island. The personal conduct of the chief was above criticism. Should anyone dare to reproach him, he cursed the impertinent one with the power of his lineage gods and caused him to fall sick.

The house of the chief was divided into two parts. There was no formal dividing wall or screen, but the division was well understood by the chief's family. On one side slept the chief and his wife; on the other side, his children and other household members. His house was not more pretentious than other houses of the village, but was of the ordinary *wakayamao* house type with coconut leaf wall screens. The chief entered from any side, but the family might enter only from their own end of the house. The chief ate with the rest of the household. His clothes were made by the women of the household. His old malos and sleeping mats were thrown into the sea, because they had become tapu through contact with his body. There were special death observances for the chief (p. 302).

In front of the chief's house was a reserved open place where he rested. Only the name of the resting place of the supreme chief is remembered. It was called Te Ulu-takapau and was situated in front of the present supreme chief's residence in Loto, covering part of the present road and adjacent land. The chief had a reserved bathing beach; that of the supreme chief was in front of Te Ulu-takapau, and was called Te Ava-o-te-wakakelenga-aliki (Channel-for-the-chief's-bathing). At this beach, which includes the only piece of deep water on the lagoon frontage of Loto village,

no canoes might be beached, nor commoners trespass. The family of the chief bathed at the next break west of the chief's channel. When the chief had finished his bath, he was carried from the water on the upstretched hands of his family retainers to Te Ulu-takapau where he rested under the shade of coconut leaf mats supported by poles. No commoner would intrude on this place. Close by it were made the special divisions (*laukava*) of chiefly feasts. The minor chiefs had similar beaches and reserved places close to their houses in their respective villages. When the chief walked abroad for exercise, the people moved away to allow him sole and undisputed right to the road.

Besides his family, those most in contact with the chief were his subordinate chiefs, his executive (*wola*), and his attendant (*toa*). This last functionary appears to have been a combination of personal servant, body-guard, and general executive for the chief. He belonged to the lineage of the chief. He was referred to as *te tatatala no te aliki* (the talker of the chief) and generally acted as the chief's agent in calling meetings, carrying messages, arranging food divisions, and like matters.

There was no chiefly language in Pukapuka, no word used only by those of chiefly rank, or by commoners in addressing the chief. Only a special salutation was used for the chief and for his children, who were greeted: "E vale e . . ." without using the chief's name. By transfer, when one commoner wished to use an extremely polite greeting to another, he used *te vale*, as "Na yau ko koe, te vale, nei" (You have come, o vale). Such a polite form of greeting is termed *wakawawale*.

Besides these various tapus, all the major chiefs were priests by virtue of rank. This prerogative was shared also by the executives (*wola*) of these chiefs. In those lineages where there was no chief, only the priest might go to the sacred enclosure of the lineage and consult the gods. In the chiefly lineages—Tua, Matanga, Muliwutu, and Yalongo—priests, chiefs, and executives could all go on the sacred enclosure without violating its sanctity. The division of functions was such that the priest consulted the gods on intra-lineage matters, the chiefs and the executives on matters affecting the island as a whole or the relation of the lineage to other lineages.

SACRED MAID

A final symbol of the status of the chief and of the chiefly lineage was the pattern of appointing a *mayakitanga* (sacred maid). (Cf. *meheitanga*, the Tongan kinship term applied to father's sister.) Either the first-born female child of the chief or another girl of the chief's lineage was chosen for this purely honorific office. Generally she was supposed to be the most beautiful girl of the lineage. Chosen at the age of about ten years,

she remained a virgin all her life and did not go through the adulthood rite. From the time she was chosen she lived in a special house called *te wale ya o te mayakitanga* (the sacred house of the sacred maid). The induction of a *mayakitanga* was described as follows:

The sacred maid wore a pandanus kilt dyed red with the juice of *welo* berries, a headband of *welo* bark, also dyed red, and pearl-shell ornaments. She was placed in a horizontal position with her back to the ground, lifted high in the air on the palms of men of her lineage, and carried to the sacred enclosure of the principal god of the lineage. All the other people of the lineage, and the general populace, if it wished, followed with uplifted palms and hands. As the procession reached the enclosure they chanted the song "Kai yoki yokio", which was also chanted at the burial of a chief. At the word "Uti", the girl was placed before the worshipping stone (*umu*) of the enclosure. The executive then dedicated her to the god with a prayer (*tabua te vai*). No informant could remember the exact form of this prayer, but it contained reference to the increased prosperity of the island during the life of the sacred maid. Pau thought the following extract from an ancient prayer of obscure meaning was recited at this time:

Kia¹⁰ wai muli wunui Let the clusters of nuts be full (?)
 Kia wowolo te wawa Let the talo tubers grow big
 Kia tautungatunga (Addressing the *mayakitanga*) Beckon to the god (that he may answer this request)
 Kia matolu te ika Let the fish be numerous
 Kia pi ki te tai Let (feces) flow to the sea (in quantities from the abundance of food eaten)
 Ke elo te wenua Until the land stinks
 Kava ye te tangata Countless the feasts for the people

After this prayer, the *mayakitanga* was considered dedicated to the god. She was then carried about the island on the uplifted palms of her relatives and shown to the people. Everywhere she was greeted with the remark: "Koa tauyala wua koe ki mua" (You are making a circuit of the island—to bring us prosperity). The ceremonial tour finished, she was taken back to her house and her guarded life began.

The *mayakitanga* was guarded by old female relatives (*leorwi* or *tante*). She was kept inside her house for two or three months at a stretch, her skin carefully oiled so that it became exceedingly fair. She was fed the choicest foods: parts of the breast and green fat of the turtle; the *iolua* part of the flesh of albacore and other large fish which stretches from the dorsal fin to the tail and contains fat white flesh; all kinds of fat fish such as *malau*; and the breast meat of birds. All the skinny portions of her food supplies, lean fish, wings and legs of birds, were eaten by her *duennas*.

The sacred maid of the chiefly lineage of Loto lived close to the place Matala, the other sacred maids living similarly close to their cemeteries. From the residence of the *mayakitanga* to the lagoon beach was a specially cleared path called *yionga ola* (not to be confused with *yionga mauhi*, cleared paths built as symbols of deified ancestors). This path was tapu to commoners save at times once every two or three months when the maid walked on it to show herself (*wakayarewi*) to the populace. Then the commoners

¹⁰ *Kia*, an archaic particle used in proffering requests to the god.

might walk behind her provided they showed her the respect due her status by walking with uplifted palms.

The life of the *mayakitanga* seems to have been monotonous. No man ventured near her sacred house, let alone dared to sleep with her, even if he could. Any trespass against her house or her person was punished by the gods of her lineage with sickness and death. When she came from her house to bathe, all the men retired either to their houses or to the bush, and she bathed in privacy with her guardians. Only when she went abroad to show herself or to go to the sacred enclosure was it permissible for the populace to be about her. A *mayakitanga* had no choice but to be a sacred maid, once she was dedicated, until she died. If she outlived the chief who made her *mayakitanga*, she was still treated with every respect. The new chief might appoint a new *mayakitanga* from his own generation, and there were then two sacred maids living in the special house at the same time. The older sacred maid might, with the passage of years, informally retire from her position. She never married, though she might participate more in the everyday life of the community.

Informants have no knowledge today of special religious duties of the *mayakitanga*. Her special function was to act as a prestige symbol for the chief and his lineage. She was considered a great "pet" of the lineage, *e wakaemaema te mayakitanga* (beloved was the sacred maid). It was a great honor for any girl to be chosen as *mayakitanga*. Though no ordinary woman might set foot in a voyaging canoe, the presence of a sacred maid in such a canoe was greatly desired:

When a big deep-sea voyage was made by members of a lineage, the sacred maid accompanied the voyagers as an honored passenger. The priests of the lineage consulted the gods of the lineage beforehand and received permission from them for the sacred maid to join the expedition. The sacred maid apparently possessed no special technique by which to calm storms or avert other dangers. Her beneficent presence in the canoe evoked extra efforts from the god of the lineage to protect his subjects. Having given permission for her to go in the canoe, the god of the lineage was honor bound to protect her from danger, and thus also the crews of the canoes. She was the symbol of the power and dignity of the lineage, and the protection accorded her also embraced the men of her lineage. As a proof of this, informants said that the voyages undertaken by Muliwutu lineage without the protection of their sacred maid all ended in disaster, whereas the voyages of Matanga lineage, invariably made with the sacred maid, were always successful.

SUCCESSION TO CHIEFLY TITLE

Title to chiefly rank descended in known paternal lineages, subject to veto by the people of the lineage:

The line of descent was from father to son. Where there was no direct male issue, the title lay dormant until male issue appeared or else it passed to a brother of the late chief, or to an adopted son (*ao kokoti*) of the late chief, who was his brother's or sister's son. Adoption always provided an heir, if there was no male issue. A woman

never succeeded to the title, though descent might be through a woman where her male child was adopted by the chief. Before he died, the chief nominated his successor by the act of placing a pearl-shell ornament (*yana*) around the man's neck. After the chief's death the matter was discussed by the people of the paternal lineage. If they disapproved the chief's choice, on the ground of incompetence, there was much discussion and possible intrigue, until they agreed on another suitable candidate. In this way, direct male issue might be passed over in favor of someone from a junior line of the lineage, who would be adopted into the main line of descent before induction into office. The time elapsing between the death of the chief and the induction of a successor varied according to the amount of discussion involved, and the number of conflicting lines to be harmonized. The final choice of the lineage was indicated by placing the ornament (*yana*) round the neck of the successor and the *tawamane* ornament (a string of pearl-shell fishhook shanks) round his waist. In Muliwutu lineage, the chosen person had to establish his right to the title by passing a test. He went to the sacred enclosure of the lineage and struck the stone of the god; if the god was favorably inclined to this candidate, he sent a rainbow across the sky. No candidate who was unable thus to produce a rainbow was ever inducted as chief.

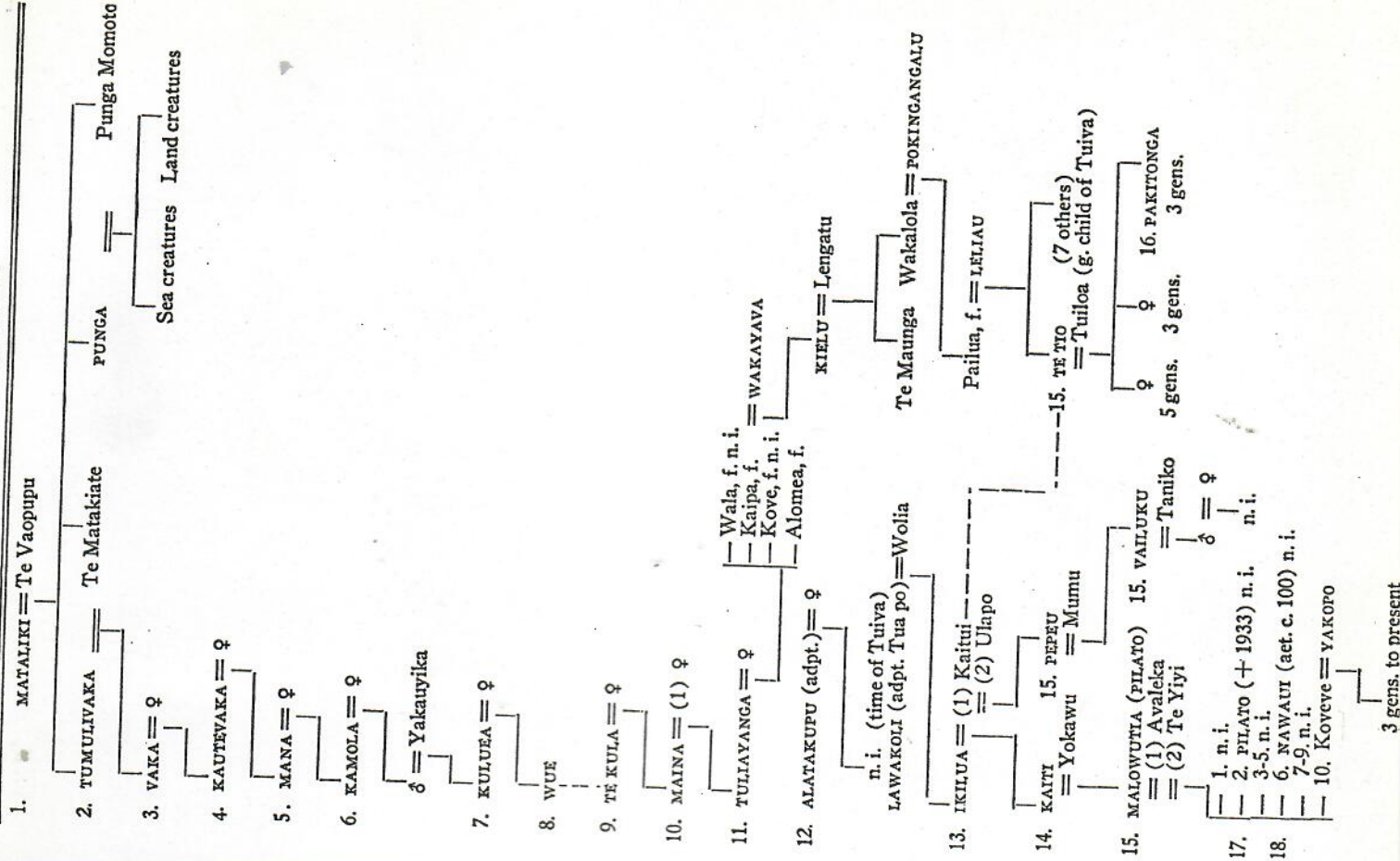
Both pattern and variation governing succession to title are best illustrated by a consideration of the types of succession recorded in the genealogy of the supreme chief. In the accompanying genealogy (table 4) the chiefly title-holders are numbered consecutively from Mataliki to the present day.

The succession passed from father to son from Mataliki, the traditional founder of Pukapuka, to the sixth chief, Kamola, in the sixth generation. From a genealogy of Muliwutu lineage of Ngake, it would seem that Kamola succeeded to the title of chief of Muliwutu, and in his person the two chiefs of Tua and Muliwutu were combined. Kamola had a son, unnamed in the Tua genealogy but named Tamaliki in the Muliwutu genealogy, who apparently succeeded to the title of chief of Muliwutu. In Tua lineage matters were more complex.

Kamola's son was married to a woman named Yakauiyika, who was very kind to Kamola in sickness and in his old age. Kamola's son was apparently less filial in this respect, and Kamola thought to reward his daughter-in-law for her care and attention by passing the title to anyone she wished to name. Yakauiyika herself could not hold the title, but Kamola was of the opinion that the honor of naming the next chief was the greatest tribute he could pay to her friendship for him.

The people of the lineage objected to the possibility of the title's passing out of their own lineage under this arrangement, so they insisted that Kamola should propose a test; if Yakauiyika could find a champion (*toa*) to pass this test, then she might name the successor to the title. Kamola agreed to this arrangement. He gathered a great number of coconut leaves, stripping several trees completely. With one leaflet tied round his waist, he lay on the ground, face downward, and was covered with all the coconut leaves. The feat was to pick up at one time all the leaves covering Kamola without injuring the chief. Yakauiyika chose Kui, a man of special powers, to act as her champion. Kui took his spear and advanced toward the prone figure of the chief, performing the *lupe* ritual (p. 322). He struck at Kamola once but failed to pick up the leaves; he struck a second time but failed; the third time he thrust his spear clean and with a superhuman wrench picked up all the coconut leaves covering Kamola. He threw them all in the air with the exception of the leaf round Kamola's waist, which he left untouched. As the leaves fell through the air, Kui struck them in rapid succession, shattering each and every leaf before it touched the ground.

Table 4. Aliko Succession



The members of Kamola's lineage were all watching the test, and when they saw the evidence of Kui's powers, they were afraid and agreed immediately that the right of succession should go to Yakauyika's nominee. Yakauyika named Kulueta, her son, to succeed to the title. Informants were in doubt as to whether Kulueta was her son by Kamola's son, and therefore the grandson of Kamola, or by another husband.

The chiefly title passed from the eastern side of the island, from the Ngake lineage of Muliwutu to the western side, to Tua lineage, where it has remained to the present day. The chiefly line of Muliwutu descends from Tamaliki, probable son of Kamola.

The seventh chief, Kulueta, by his supernormal powers succeeded in driving away from Pukapuka the giant Tongalelevans sent by the chiefs of Yayake (p. 381). Wue, the eighth chief, was the great navigator and searover, who sailed all the seas and brought back to Pukapuka many of the games now played by the people of the atoll (p. 402). He was away from Pukapuka during most of his reign as nominal supreme chief of the island, returning only to refit his canoes and sail away again.

It was perhaps during his frequent absences that the woman Wanguna assumed much power and authority and led the people through a period of license, tapu-breaking, and debauchery which was finally ended by the great seismic wave. But informants were confused as to whether Wanguna was contemporary with Wue, stating on one day that there was a time break between the two, and on the next that Wanguna rose to authority because of Wue's absence.

Te Kula, ninth chief, was by birth a member of Matanga lineage of Ngake. Some informants believe he was adopted into Tua lineage of which he became supreme chief, others that he divided several of his surviving children after the wave among the various lineages so that descent groups might be restarted, and that he gave his first-born son, Maina, to his wife's lineage of Tua. In any case, Maina became tenth chief. It is from the first (*puna nua*) of Maina's three wives that the descent group of the supreme chief continues. Maina was succeeded by his son, Tuliayanga, the eleventh chief. Tuliayanga's children were all females. His eldest, Wala, became the sacred maid. His second and fourth daughters had issue, his third daughter had none. From the second daughter descends Te Tio, fifteenth chief. Alatakupu, twelfth chief, was an adopted child of Maina's first wife.

When Tuliayanga died without male issue, Alatakupu succeeded to the title. He married but had no issue. Apparently a man of vicious temper, he so enraged the people of the island with his senseless killings that when he was finally killed on Motu Ko, all his male relatives were also put to death in an endeavor to extirpate his line altogether. There was, then, no immediate successor in line for the title of supreme chief, and probably no desire on the part of the people to appoint a new chief as long as the unpalatable reign of Alatakupu was fresh in their minds.

Tuiva, a man of Matanga lineage, was appointed regent during an interregnum. He moved his residence from Ngake to Loto without, however, changing his lineage affiliation. He is thought by some informants to have been a son-in-law of the chief Tuli-

yanga, but genealogies give none of his three wives as related to Tuliayanga unless by adoption. A just and merciful man in his old age, he ruled the island wisely and well. When he thought death was near, he called the people together and told them it was time to choose a successor to the title of supreme chief. Casting about for a suitable candidate, the people chose Ikilua, son of Lawakoli and his wife, Wolia. Lawakoli was an adopted member of Tua lineage, killed with the chief Alatakupu. Tuiva took the youth Ikilua under his care, taught him the principles of wise rule, pointed out the wrongs of the former chief, and told him that to rule justly and peacefully he must be kind and considerate to the people and never sanction murder, no matter what the provocation. Ikilua listened well to the advice of the old man and was finally inducted into office to become the thirteenth chief. Ikilua's son by his first wife, Kaitui, was Kaiti who became fourteenth chief.

In the generation of the fifteenth chief, a curious situation arose in which there were four supreme chiefs at the same time. This apparently resulted from a struggle for the title, in which trouble was finally avoided by a compromise.

Te Tio, a fifth generation descendant from the eleventh chief, Tuliayanga, was married to the granddaughter of Tuiva. He had been adopted by Kaitui, Ikilua's first wife. To favor this wife, for whom he had great regard, Ikilua nominated her adopted son, Te Tio, to be chief when Kaiti, his blood son, died. Kaiti died and Te Tio became chief. But Pepeu, blood son of Ikilua and Ulapo, his second wife, also claimed the title of supreme chief, and to avoid trouble he too was formally inducted as chief of Loto. Pepeu nominated his son, Vailuku, to succeed him and had him inducted as chief during his lifetime in order to make sure of the succession. As Kaiti's wife, Yokawu, was descended from Manihiki castaways, Kaiti's son, Malowutia (Pilato Metua) also had traces of Manihiki blood in him. When Pepeu nominated his son, Vailuku, as chief, the Yato man Tapi (another descendant from the Manihikians), who then was the executive officer (*ywla*), was ambitious for his lineage and insisted that before he would agree to the appointment of Vailuku, Pepeu in turn must agree to the appointment of Malowutia, son of Kaiti, as another chief of Loto.

Pepeu was forced to agree to the demands of Tapi, and thus there arose the anomalous situation in which there were four supreme chiefs, all duly inducted on the sacred enclosure of Mataliki and all holding office at the same time. Te Tio and Pepeu were of one generation; Vailuku and Malowutia were of the generation level below. The arrangement seems to have been an amiable one and without trouble or rivalry of any sort.

When the four men died, Pakitonga, son of Te Tio, became sixteenth chief. On his death the succession passed back to the first son of Malowutia, and Pilato became seventeenth chief. He was captured by Peruvian raiders on their visit to Pukapuka in 1862-1863, transported to Peru, but finally escaped and returned to Pukapuka to die in 1933. He was succeeded informally by his brother, the present chief, Nawau, a man now about 100 years old. Nawau insisted that he should not be formally made chief, for he was old and likely to die soon; but his nomination was approved by the island administration. He is married; his wife has children but he has none. No one knows who is likely to succeed to the title when he dies. There are at least four contending groups: the descendants of Nawau's sister, descendants of Pakitonga, and descendants of Pakitonga's two elder sisters. Other lineages in Ngake are also interested in the succession, claiming a right

through marriages or adoptions several generations back. Feeling is that the matter will have to be decided by the native Land Court.

Ngake genealogies of the chiefs of Muliwutu and Matanga lineages were given me in confidence, informants fearing that if given publicly, rivals to the title succession would know before the Court sat what case would be put up on behalf of the Ngake claimants.

The succession to title in these Ngake genealogies follows the same general rules as succession to the title of supreme chief. Where there was no blood child to succeed him, the chief nominated an heir from other lines of the paternal lineage. One chief of Ngake affiliated with Loto village after his induction to the title. No reason is given for this, but as it was at the time of first missionary contact, it is possible that he became converted and took up residence near the mission. He could not carry the title with him to Loto, so the people of his lineage chose another man from a related sub-lineage and inducted him as chief. When this chief was about to die, he requested the son of the convert to come back and affiliate with Ngake. This the son did, and when the chief died, the succession passed to the convert's son and has continued since down this paternal lineage. Another sub-lineage in this grouping lays claim to the title of chief, but because the rainbow never appeared in the sky when its candidate laid claim to the title, the line is considered a chiefly line only under protest from the other sub-lineages of the grouping.

INDUCTION TO CHIEFTAINSHIP

Induction to chieftainship took place on the sacred enclosure of the lineage. All the people gathered outside the enclosure to watch the proceedings:

Dressed in the costume of a priest of the lineage, wearing the appropriate headdress and body covering, the chief-elect was lifted on high and carried to the threshold of the sacred enclosure by the men of his lineage. At the threshold he was met by the priests and minor chiefs of the lineages, all dressed in the appropriate costumes of their own gods. This group of priests and chiefs conducted the chief-elect inside the enclosure and up to the sacred stone (*uuru*). The chief crouched or rested on a stone seat (*potiu*) placed in front of the sacred stone. He tied a coconut leaf decoration (*lakei*) to the sacred stone and then prayed silently to the god of the lineage for a successful and prosperous reign, for nuts, talo, and fish in abundance, for strong teeth for his people and for their vigorous old age, unmarked by grey hairs on their heads. The god thereupon sent a sign that he had heard and was favorable to the request. An appropriate sign was for the flesh of the chief to break out in goose flesh. A subjective state leading to hysteria or trance was also considered a favorable sign from the god. After the sign had been noticed by the assembled priests, the chief walked to the gate of the enclosure. As he stepped over the threshold, the people of his lineage rushed forward and carried him on high, back to his house or his resting place. This completed the induction proper, and thenceforth the chief was a tapu person, taking no part in sports or economic activities.

A distribution (*laukaraa*) of nuts took place immediately after the induction, and all the people waited to receive their share.

If the reign of the new chief was good and prosperous, the people knew they had correctly interpreted the sign of the god. The rainbow test for the chief of Muliwutu was considered an infallible preinduction test; but the other lineages had to depend on future events to tell them whether they had

made a right choice. Apparently no chief was ever deposed; hence the reigns of the chiefs of all the lineages must have been, in general, equally prosperous. In accounts of traditional history it is usual to find the chief displaying supernormal powers, bestowed by the god of his lineage.

In former times, as today, great rivalry was felt between the various lineages of the island, especially between those lineages headed by chiefs. Up to the time of the great seismic wave, no chief was superior to the rest. There was, rather, a shifting balance of power between the four chiefly lineages, temporary superiority going to that lineage which through the intrigue, personality, and strength of its chief, combined with numerical strength of its members, managed to gain predominance for the time. The chief of such a lineage would then claim to be the supreme chief of the island. His claim might be disputed, but as long as he was manifestly superior to the other chiefs nothing would be done about his pretensions. It was only after the seismic wave, with its catastrophic effects, that i Tuua seems gradually to have assumed a dominance over the other three chiefly lineages. In the inter-lineage adoption that occurred after the seismic wave, a child from the strong lineage of Muliwutu was adopted into i Tuua, to insure the continuation of this chiefly line; this seems to have lined up Muliwutu behind i Tuua. With this support, i Tuua became dominant and constituted itself the lineage of the supreme chief of the island, a status which it has retained to this day. As a lineage of the supreme chief was politically dominant, so were its gods preeminent over the other lineage gods. Mataliki and Tauga, the major gods of i Tuua, may then be considered the major gods of the island; they were most often called upon by the supreme chief to provide favors for the island as a whole. Nevertheless, the other chiefly lineages, particularly those of Ngake, have never completely acquiesced in either the political or religious dominance of i Tuua.

POLITICAL CONTROL

The functions of the three governing groups on the island may be summarized as follows:

Village meetings (*wakapono lulu*), attended by the chiefs, sub-chiefs, and all adult males of the village, discussed matters affecting the village and the reserves, and settled intra-village disputes. Meetings of the old men's group (*wakapounga no te tupele*) discussed island affairs. Meetings of the chiefs (*wakapounga a te weni atiki*) discussed island and inter-lineage matters. The division of functions between these governing bodies is not clearly remembered today when the functions between these has been so completely transformed by the resident agent and his nominated Island Council. Informants believed that the supreme chief and his nominated Island Council. Informants believed that the supreme chief called the minor chiefs together at unspecified times to discuss matters referred to him by the council of old men (*tupele*). All decisions of the old men were presented to the high chief or the council of chiefs for final approval. Whether or not this approval was nominal depended on the prestige and power of the high chief. Notwithstanding, the final veto seems to have rested with

the chief's executive (*wolā*), who had the power to say whether a law should or should not apply to the island (p. 387). Decisions were reported (*kare te vananga*) to the several villages in a meeting assembled by a special messenger, called simply *te leo o te atiki* or *te leo o te tupele* (the voice of the chiefs or of the old men). The high chief did not attend the meetings of the old men but sent his representative (*te talatala no te atiki*), who was commissioned to report the chief's opinions to the old men. It is probable that special meetings of all the people of the island were held on occasion to discuss such a matter as the redivision of reserve land, or the realignment of reserve boundaries. A meeting of this type seems to have been in progress at the outbreak of the civil war (p. 389).

The control of village affairs was largely in the hands of the village men. The chief of each village acted as priest in village functions. In theory he devoted his time to the welfare of his people and the control of village works initiated by a decision of the people. The sub-chiefs (*angaitā*) were the executive officers, directing village works. Neither chief nor sub-chief received tribute from village or lineage members. Each was fed by his own family group. In island affairs, the chiefs and sub-chiefs were advisory and executive officers, but the real balance of power, in theory at any rate, seems to have been with the old men, who ordered and directed inter-village and island affairs. When the high chief or his executive, who perhaps corresponded to the modern king's prime minister, was an outstanding personality, he might assume for himself many of the powers that ordinarily lay with the old men; these powers would revert to the old men on the chief's death. The governing of the island, therefore, really lay with the group of old men who because of their age and presumed experience were considered better able to order affairs than a chief or his executive.

SANCTIONS

Sanctions invoked to deal with most antisocial conduct were not secular, but depended on punishment, usually sickness, sent to the wrongdoer by the gods. Lying was condemned but not punished secularly. Adultery was punished both by the gods and by the wronged person (p. 329).

Thieving from the reserves was punished by the gods. In the reign of the chief Tuiiayanga, however, when there was a great food shortage, punishment for stealing was reenforced by group action; the law of *pule pae* (death law) was put into operation and implemented by the guards of the reserves (p. 387). Willful homicide seems also to have been punished by group action, perhaps if it was thought that the gods would be too long in acting. The appropriate punishment was whipping to death. The maternal sub-lineage of the victim was either made the instrument of this punishment or assumed collective responsibility for the crime, though should the homicide shock the community by its barbarity, all the populace might join in the beating (1).

If one individual should steal from another, the victim was allowed to be his own detective and judge and would proceed to reenforce the punishment of the gods. The injured person or a friend made inquiries and threatened to kill the thief should he be discovered. The thief might pose as a friend and go to look for the missing articles, simulating intense search, but always return with empty hands. The owner of the stolen property might

go to the house of the man whom he suspected and, in turn, take articles to the value of those missing, thus provoking a quarrel. Disputes arising from such actions or from unjust accusations were settled by wrestling, where a fall in the ring decided the matter, or else by a stand-up fight with sticks; to administer a good beating was considered adequate compensation for the loss of goods or for the loss of a wife. If the thief was discovered, the stolen goods were returned in full by him or his family, or else goods of the same value were paid, or a gift might be made to the injured party, large enough to be considered adequate reparation.

If the thief was not discovered, his children, own or classificatory, born before or after the theft, would certainly die early deaths. The remarks of neighbors might then lead the thief to confess his earlier fault. In the confessional held round a death bed, thieving is one of the matters which relatives close to the dying person are particularly requested to confess.

Thieving was rare in Pukapuka, owing to ease of detection, but the stories of Nuanaa and Kieilu show the type of behavior it evoked when it occurred:

Nuanaa was fishing on the back beach where he picked up a piece of driftwood bamboo to which he found several huge pearl shells attached. He took the bamboo to the lagoon and securely anchored it there to allow the shells to grow bigger. One night all the shells were stolen from the bamboo. Nuanaa inquired everywhere, but with no results. He searched month after month, and many times interrogated Tipui, a man whom he suspected of the theft. All was fruitless, and Nuanaa died without having found his shells. After this, the children of Tipui, and even of some of his relatives, began to die sudden, mysterious deaths. One day, Tipui himself became very sick. Everyone thought he would confess his theft. But he still feared surviving relatives of Nuanaa. On his death bed, however, when he knew he could not recover from his illness, Tipui confessed his sin. It was too late to save his family which died out very soon thereafter.

Kieilu was a noted warrior (*toa*) in the time of the chief Maina. One day he went bonito fishing. On his return, he put his line and six pearl-shell hooks in fresh water to wash out the salt. He put them in a little pool (*toto*) which then existed behind the present London Missionary Society church. Then he went to the back beach. Coming home again, he found that his rod and hooks had all disappeared. He hunted everywhere for them without result. Being a great warrior, he pulled down many of the houses close by, such was the frenzy of his search. He threatened to kill the people in these houses if they did not tell who had stolen the precious hooks. Every search proved fruitless, and to this day, these hooks have not been found. But the people who lived about this pool were called *manawa ula* (red bellies). If one wishes to insult a person living in this place even today, one calls him *manawa ula*, a terrible reminder of an earlier shame.

The story of Wuina, combining motifs of theft and murder, illustrates permissible individual retribution (1).

Slander (*maka muna*, "throwing words") was apparently a common cause of dispute in former days, as, indeed, it is today. If one man slandered another, the injured party challenged the slanderer to a wrestling contest and tried to throw him. If he succeeded, he explained to the people that he tried for an extra bad fall because of the slander. If the injured party was

a weakling, he asked a powerful friend to wrestle for him. If one woman slandered another, the injured party followed the other to the bush where she tried to beat her with a stick, or else fought her with her hands, trying to tear out her hair or otherwise pain her. Sometimes the injured woman tried to seduce the husband of the slanderer. If she succeeded, she publicly humiliated the slanderer by announcing that she had seduced the man, telling also the reason why.

Today, the Cook Islands Act has superseded old-time law. The talo beds and the reserves, however, are still administered by the guard, which levies fines on those caught stealing. One day during our stay, the women's guard from Loto came en masse to Yato and accused a Yato woman of stealing talo from Uta. The Yato woman confessed, and was immediately fined six *uto* nuts or three pennies. She handed over the nuts, and all were satisfied. In their report to the village each night, the guards mention the names of persons who have trespassed on reserve lands.

THE HOUSEHOLD

The native definition of a household is that group of people which use the same cook house. Three households (households 8, 44, 49) described by informants constitute variations on this pattern. (See table 5 and p. 249.)

The number of sleep houses all grouped together on the same lot and occupied by the same household unit depends on the size of the household. Where there are several sleep houses the parent or parents and unmarried children, blood or adopted, sleep in one house; a further grouping occurs in terms of relationship, age grades, and personal choice. A married son or daughter generally sleeps with his family in a separate house.

COMPOSITION

The relationships of the persons making up individual households studied is shown in table 5. The 54 households of Ngake and Yato give 38 distinct groupings of kin:

Ten households are composed of mother, father, and children. Seven households are composed of mother, father, and adopted children. Two households are composed of mother and children, mother in household 16 being a widow, and in household 41, a divorcee.

The biological family of mother, father, and children is the basis of the composition of 27 of the 54 households. In 13 households, mother, father, and adopted children is the basic unit. In only six households does the combination of father, mother, children, and adopted children occur.

Outside these groups, the most common household member is the son's wife. One son's wife and one daughter's husband (household 8) have, with their children, remained in residence with their father-in-law though their mates are deceased. It is further noteworthy that these two, the (deceased) son's wife and the (deceased) daughter's husband, are brother and sister. No explanation of their residence was given by infor-

nants. It happens that their father-in-law has, until recently, been the acting Catholic missionary and may thus have wished to hold them with him in the new faith. Another daughter and daughter's husband sleep in the same household, but cook and eat with the husband's mother, that is, patrilocally, on another lot.

The widow in household 16 who lives in her deceased husband's house is considered the owner of the house which she has inherited from her husband.

Household 43 is anomalous in being composed of a man and his divorced wife's sister, her husband, and children. This woman and her family resided with her sister and her husband before their divorce, and have since continued to reside there through personal choice. The lot of the father borders on that of the parents of the woman's husband, and the whole household shares a cook house with household 44 next door, in which the mother's brothers are deceased.

The group composing household 49 sleeps in one large house and is considered a complete household, although the cook house is shared with household 50, where there is no senior wife and where the junior wife has only recently come to live.

The mother (household 51) living alone represents a further anomaly. This woman is a spinster of about 35, who has little prospect for marriage. Her parents are deceased, and she lives in a house built for her in Yato by her relatives. She sleeps in this house, but eats in neighboring houses wherever her services are for the moment required. Part of the time she lives with relatives in Ngake.

General observation of the households indicated that their composition remained relatively stable. Such breaks in the social fabric as death, marriage, divorce, birth, adoption, and weaning cause a slight rearrangement of numbers, rarely of fundamental composition. Personal choice may also dictate a new arrangement, especially changes due to conflict with the majority members of the group. There is nothing in Pukapuka resembling the Samoan freedom whereby children, as soon as they walk, change their residence and feeding houses among the larger kindred grouping according to personal whim. In Pukapuka, the residence of children away from the household of the blood parents is accounted for by definite sociological mechanisms, such as adoption or weaning. The only exception noted is a little girl who eats, works, and lives during the day with her blood parents, but sleeps, apparently by preference, with a friend of her own age in the house next to that of her blood parents.

The 54 households included in the census have a total membership of 348 people. This gives an average membership of 6.44 persons per household. Omitting the anomalous household in which there is only one member, the average for 53 households, with a total membership of 347, is 6.5 persons per household. The variation in numerical composition of the households is shown below:

Persons per household.....	1	2	3	4	5	6	7	8	9	10	11	12	13	18
Number of households.....	1	2	9	5	5	7	7	6	4	2	3	1	1	1

Households with a numerical membership of 3 to 8 persons account for 72.3 percent of the total number of households.

In an attempt to work out the effect of adoptions on the numerical composition of the household, 32 households were studied in which adoption

occurred, both of feeding children (*tama wangai*) and of children "cut off" (*tama kokoti*), either with loss or with gain in membership to the household:

In these 32 households there is a total of 48 *tama kokoti* and 10 *tama wangai*, adopted into, or away from a household. In 5 households one child was adopted while another was lost by adoption, the balance being the same. Nine households gained one member each, 4 households gained 2 each, one household gained 3, and another gained 4 members. In 6 households one member was lost by adoption, in 5 households 2 were lost, and in 1 household 3 were lost. The average membership in 32 households after the adoptions have taken place is 6.1 persons. Had adoptions not taken place, the average membership would have been 5.9 persons. It is clear that adoptions work, however slightly, toward bringing the household composition nearer to the average membership for the total number of households.

Informants gave patrilineal residence as the rule for marriage. Census data established the pattern, with variations due to personal choices and convenience. In order to learn whether patrilineal residence is also the rule for household groupings of kin outside the biological family, special inquiries were made in conjunction with the census. Patrilineal residence is defined as the residence in a household of persons whose membership is based on a relationship to the male head of the household, provided the household head is himself living patrilocally. Where a husband resides matrilocally, any person living in his and his wife's household, whose membership in that household is based only on relationship to the husband and who is not also related to his wife, is also taken to be living matrilocally. Adopted persons are considered as living in accord with patrilineal rule, save that where the father lives matrilocally the adopted children also live matrilocally, because they are equally related to the mother of the household. Of a total of 348 people coming under the census, 287 (82.4 percent) are living patrilocally. For the material under discussion, the households which include persons residing in accordance with patrilineal rule do not greatly outnumber those which include persons residing matrilocally. But when residence is evaluated in terms of the number of individuals, the rule as to the prevailing tendency toward patrilineal residence is made clear. Accurately to represent the situation, table 5 should indicate individuals and not cases. With this caution, however, it will not be misinterpreted.

Analysis of the foregoing data shows the importance of distinguishing clearly between matrilineal or patrilineal marital residence on the one hand, and matrilineal or patrilineal kin residence on the other hand. Too often these two types of residence are confused. Marital and kin residence may or may not correspond. What appears to happen in general is that, in a matrilineal society, other things being equal, marital and kin residence tend to follow the same pattern, and vice versa in a patrilineal society. However, a sufficient number of deviations occur to give the tendency in marital residence a different degree of incidence from the tendency in kin residence. This

derives, first, from the importance of the bilateral kin group, which should not be underestimated whether the society is patrilineal or matrilineal; second, from the fact that the people who cause a formal social organization to function are people of flesh and blood, heirs to any number of personal idiosyncrasies, preferences, hates, loves and jealousies, the interrelations of which twist formal rules to serve the logic of life. If a person wishes to live in a particular household—for whatever reason—he does so, whatever his kinship with the family head, and whatever the society rule. Behavior may be labeled as deviation only after the rule has been established by analysis of census material. It is important to remember that marriage invariably joins together two kinship groups in an alliance which is usually cooperative and friendly. Once the fact of this alliance is socially recognized, the way is open for the operation of the largest measure of personal choice in household residence, if personal factors render it impossible to live in accordance with the pattern of the society.

ADOPTION

The two types of adoption in Pukapuka are complete adoption (*kokoti*, to cut) and partial or feeding adoption (*wangai*, to feed). The adopting parents are *matua kokoti*, the child *tama kokoti*. Complete adoption usually involves change of residence and change of patrilineal descent. The feeding parents are known as *matua wangai*, the child as *tama wangai*. Feeding adoption usually involves change of residence, but never change of descent line. The Pukapukan does not consider that a child receiving village food shares under the agency of a man not his father is adopted by that man. (See pp. 219-220.)

The reasons for adoption are both personal and economic. The personal motive is the desire of a childless man to ensure the continuation of his patrilineal descent line. Economic incentives include the desire of a childless couple for the food shares that an adopted child brings into the household, for talo beds and coconut trees from the child's blood group (in adoption after infancy, a matter of arrangement) or for someone to care for them in their old age. Frequency of adoption and residence variants are indicated by an analysis of material collected in the household census:

Of the total of 348 persons of all ages included in the census, 80 (22.9 percent) have at some time been adopted by the *kokoti* adoption. Of 209 persons of a generation below that of mother and father in the households, 43 (20.5 percent) are *tama kokoti*. Of the remaining 166 persons, 13 (7.8 percent) are *tama wangai* living with their feeding parents. The percentage of *tama wangai* in the total of 209 persons of the generation below mother and father is 6.22. Of the 43 who are completely adopted (*tama kokoti*) in this generation level, 18 have continued in residence with their blood parents without going to live with the adopting parents.

The reason for the non-change of residence of two of the *tama kokoti* is their tender age; they are not yet weaned. The adopting mother of one of these infants has mean-

while died and it is presumed that this child will continue indefinitely to live with his own parents while being considered a member of the adopting father's lineage. In a third case, the reason is the illness of both adopting parents. In another, the adopting father is a very old man, unable to care for the child. He had previously also adopted the child's father, who lived with him as a boy. A further case did not involve a change of residence on the part of the adopted child because the adopting father is the husband of the child's maternal grandmother, with whom the child's unmarried mother lives. The reason given in two other cases is the death of the adopting parent or his wife. In the remaining five cases, involving eleven *tama kokoti*, no explanation could be offered by informants, though it is likely that the personal preferences of the blood and adopting parents were deciding factors.

Generally the *tama kokoti* is adopted before birth:

When a couple decides to adopt, they go to the selected parents at the time the mother is about three months pregnant. They say: "We wish to adopt this child as a *tama kokoti*," and then specify whether the sex of the child will make any difference. The blood parents discuss the matter with the paternal and maternal grandparents and with their bilateral kinship groups, to see if there is any objection to breaking a descent line, or whether any other friend or relative has a prior claim on the child. If agreement is reached, the adopting parents are informed, and from this time on they are required to feed the pregnant mother with the best of foods and to make special provision for her family whenever there is a food division.

The child's birth takes place in the house of the blood father, unless the house of the adopting father is close by, in which event delivery may take place in that house. Both adopting parents are present at the delivery as a matter of course, because of the fiction that it is really their child that is being born. All the relatives of the adopting parents make a point of being present for the same reason. It is the relatives of the adopting parent that renders all the necessary assistance to the parturient woman. The blood father and relatives may also be present, but only as onlookers who take no part in the confinement proceedings. After the child's birth, the adopting parents continue to be responsible for the mother and for the child. They provide the birth feast and the names for the new child.

Thereafter the mother nurses the child, who remains with her exclusively until time for weaning. Food gifts to the mother continue throughout the feeding period. At weaning, the adopting parents take formal possession of their child. A small feast marks the handing over; the adopting parents make gifts of valuables, pearl-shell hooks, *malos*, etc., to the blood group. This completes the adoption, and henceforth the child lives with the adopting parents. The blood parents give up all control over the child, and the child in turn assumes all the duties and responsibilities of its position as *tama kokoti* to the adopting parents.

As distinguished from a *tama kokoti*, the feeding child (*tama waiwai*) goes without ceremony to live with the adopting parents, who feed him. He helps his feeding parents, and brings to their household the food shares he receives from the village divisions. The relationship begins when the child is sent to relatives to be weaned:

Through a mixture of personal and economic motives, relatives may decide to keep a feeding child with them. The matter is discussed with the blood parents and decided upon, usually an easy matter, as no change of lineage membership is involved. The child remains a member of his home village. If he is taken by relatives in another village, he brings to this household foods in which the adopting village is deficient. Then the adopting parents participate in a supply of food that would otherwise be denied them. If the adopting parents come to favor the feeding child, they make arrangements to turn

the feeding relationship into a permanent *kokoti* relationship. This is done by mutual arrangement with the blood parents and is accompanied by a renaming of the child by the adopting parents.

The method of adoption before birth is a favored one. The adopting parents desire to have complete control of the adopted child, not only complete social control, but complete control also of the child's affections, if they are childless. Further, if the adopting parents are two generations removed from the child, they need assurance that he will not desert them in their old age. A divided loyalty in the child would be fatal to the complete success of the security desired. Nevertheless it is recognized that adoption at a later age gives the adopting parents a chance to test out the capabilities of the adopted child.

An additional occasion for adoption may occur when a man marries a woman who already has a child by another man. If the husband expresses the desire to adopt and it is agreed on, the woman's child is adopted into the lineage of the husband and becomes his *tama kokoti*. Where the woman has conceived either by the husband or another man before marriage, the husband is considered the sociological father to the child born after the marriage, and the problem of adoption does not arise.

A tabulation of the relationship of the adopting parent to *kokoti* and *waiwai* children is possible from the census material (table 6). Clearly, the range of possible relationships is well nigh infinite. Note, however, the outstanding and comparative importance of father's sister, mother's brother, and mother's father as the adopting parents. Almost equal in number are adoptions by maternal and by paternal relatives.

Adoption may be complicated by the exchange of adopted children and by the giving of adopted children as presents to another lineage. One interchange of children of close friends in adoption is recorded:

Two men, Lepuama and Tuela, are cross cousins. Lepuama adopted as *tama kokoti* the son of Tuela. Tuela in turn decided to adopt from Lepuama. He contracted for Lepuama's next infant, which he thought would be a boy, to be handed to him as soon as it was born. A fair exchange of this nature is of children of the same sex, so that the status of the two families as regards continuity of descent is the same before and after the exchange. To Tuela's sorrow, Lepuama's child was a girl, but he stuck to his bargain and took the child.

The exchange is termed *yoani* (gift), *yoani mai* (to receive in exchange), or *yoani atu* (to give in exchange). The interchange emphasizes a sentimental tie between two families, and ensures that neither side shall suffer by the gift relationship. Where the exchange is not carried out on one side, valuable gifts—fishhooks, a piece of land, a group of nut trees, or a section of privately owned talo beds—help to reestablish the status quo as regards the two families. Such a return gift is also called *yoani*. The practice of

giving a material gift in exchange for an adopted child is more common than interchange of children for the reason that it is the childless couples which are more likely to adopt in the first place.

Table 6. Relationship of Adopting Parent to Child

ADOPTING PARENT	CHILD	
	KOKOTI	WANGAI
1. Father's brother	4	6
2. Father's sister's husband.....	11	2
3. Blood father (not married to mother).....	2	1
4. Paternal relative, detail lacking.....	1	..
Father's paternal relative:		
5. Father's father	3	..
6. Father's father's sister's son.....	1	..
7. Father's father's brother's son.....	1	..
8. Father's father's brother's daughter's husband.....	1	..
9. Father's father's sister's husband.....	1	..
Father's maternal relative:		
10. Father's mother's sister's son.....	1	1
11. Father's mother's brother's son.....	1	1
12. Father's mother's sister's husband.....	1	1
13. Father's mother's husband.....	2	1
14. Father's mother's brother.....	3	..
15. Father's mother's paternal relatives, detail lacking.....	2	..
Father's adopted paternal relatives:		
16. Father's adopted father	1	..
17. Father's adopted father's daughter's husband.....	1	..
18. Father's father's adopted son.....	1	..
MATERNAL		
19. Mother's brother	8	1
20. Mother's sister's husband.....	4	..
21. Mother's brother's friend.....	1	..
22. Maternal, detail lacking.....	4	..
Mother's paternal relatives:		
23. Mother's paternal relatives, detail lacking.....	11	..
24. Mother's father's mother's husband.....	1	1
25. Mother's father	6	1
26. Mother's father's sister's husband.....	1	..
Mother's maternal relatives:		
27. Mother's mother's brother.....	1	1
28. Mother's mother's husband.....	1	..
Mother's adopted maternal relatives:		
29. Mother's adopted father's son.....	1	1
30. Mother's adopted mother's adopted son.....	..	1
Totals.....	77	14

The census records three examples of adoption of *tama kokoti*, the adopting parent then giving the child (*kave te tama*) to another paternal lineage not the parents' own.

To repair a break in the patrilineal line, one man who had himself been adopted out of his father's lineage adopted his sister's son, whom he gave to the lineage of his own blood father; one father who is adopted into a lineage not that of his own father has given his own son back to the lineage of his father, the child's paternal grandfather. In the first case the child lives with his adopted father, his maternal uncle, and is considered the *tama kokoti* of that man, but at death he will go to the cemetery of the adopted father's blood father. No ceremony accompanied the gift adoptions.

A woman has adopted a *tama kokoti* from her own relatives, and her husband has adopted a *tama kokoti* from his own relatives. They have arranged that at death the maternally adopted child is to be buried in the cemetery of the father, the paternally adopted child to be buried in the cemetery of the mother. The exchange is called *rauni*, and is apparently a type of gift motivated by sentiment. Some informants explained the matter as being, in some obscure manner, a double payment (*wai tutaki*). It is evidently a special personal arrangement. It took place some years ago, after a unique elopement to a distant sand key, where the couple remained hidden from the searchings of an irate husband. It is possible that special circumstances, coupled with the fact that the wife is barren, governed the exchange of children.

In complete adoption, the paternal descent group of the adopted child is regularly changed to the lineage of the adopting father, unless he arranges to give the child to another lineage. The matter is somewhat different as regards the change of maternal descent line (*waa*) of the adopted child. The cultural theory is that adopting parents have the right to change the maternal lineage of the *tama kokoti* to that of one of the adopting parents. Some informants thought the change should be to the lineage of the adopting mother. If the *tama kokoti* is a girl, according to these informants, her children will all belong to the maternal lineage of the adopting mother, unless at the time of the adoption an agreement is made with the adopted child's blood mother that some of the *tama kokoti*'s children will revert to the blood mother's maternal lineage. In this agreement covering the adoption, the number of children and their sex who are to revert to the blood mother's lineage are specified so that no confusion later arises. Census material, however, includes three adopted children (in households 3, 5, 6), each a female, who became members not only of the adopting father's paternal lineage but of his (not his wife's) maternal lineage as well.

Two of these adopted girls are still unmarried and have no children. The third (household 3) is a widow whose own daughter, never adopted, is a member of the mother's own mother's maternal lineage, and not of the mother's adopted (father's) maternal lineage. Here the effect of lineage change is purely temporary, a matter of added membership to the father's maternal lineage during the adopted child's life. This enables her to share in the food and land divisions of the adopted lineage, but it will not by itself add to the vitality of the father's maternal descent line. That her children revert to the maternal lineage of their maternal grandmother repairs the break of one generation in that line of descent.

In theory, if his maternal lineage is dying out, a father may adopt one of his blood daughters into his own lineage. In this event, an arrangement would be made such that half of her children would continue to belong to the father's maternal lineage, while the other half would revert to the

maternal lineage of the maternal grandmother. I have on record no actual instances of this arrangement, for which informants could give no native name.

The status of an adopted child in a family is the same as that of a blood child. The precise kinship terms applied to the parent-child relationship are *tama kokoti* or *tama wāngai*, and *matua kokoti* or *lave* or *matua wāngai*. These are rarely used save for the sake of pedantic exactness in the discussion of genealogies. In fact, the *tama kokoti* is considered to be the child of the adopting parents in everything save the accident of conception and parturition, though here the fiction is that the adopting parents are sociologically the parents even during gestation. The adopting parents are *matua*, and the child is *tama*, in the full sociological sense of the kinship terms. The child loses all status, kinship and sociological, in relation to his blood family. All kinship ties established by birth are broken, and new kinship obligations are formulated according to the relationships of his adopting parents. As the child grows up, he may be permitted to visit his blood parents, whom of course, he soon learns to know; he may help with their work, or care for them in sickness. But it is to the adopting parents that the child owes primary obligations, and on whom he is supposed to lavish his care and affection.

Because of the complete sociological break brought about by adoption it is regarded as the blackest treachery for the blood parents, through motives of natural affection or economic advantage, to encourage the child to visit them. Some parents are known to do this by petting the child when he visits them, by saving choice tidbits for him, and by treating him with a more lavish display of affection than he receives from his adoptive parents. Such actions are resented by the adoptive parents who expect the blood parents to do nothing to revive blood ties. If a child goes to them they should send him away, resorting to violence if necessary, to show the child that he is unwanted. Similarly, adoptive parents are fully justified in severely whipping an adopted child who persists in visiting his blood parents. No punishment less than manslaughter is considered too drastic for the child who deserts his adoptive parents. If, in spite of punishment, ties of blood and affection are so strong that the child ultimately deserts his adoptive parents, as in fact sometimes happens, then there is nothing for the adoptive parents to do but to moralize on the iniquity of human nature or try adopting another child.

KINSHIP

Pukapukan kinship terms are listed in table 7. Beyond the fact that there is much confusion in the minds of informants today as to the exact extension of certain terms, particularly of those characterizing avoidance

relationships, the system is essentially simple and presents few complexities. Dual lineage organization has had no effect observable today upon the kinship system or terminology. Terms follow the usual Polynesian system of stratification. It may be stressed again that the distinction between blood and kin relatives called by the same term is always and easily kept in mind by the native, and there is never any confusion as to the proper emotional attitude or behavior due to the various relatives. The intension of kinship feelings, that is in terms of formal pattern, varies directly with the extension of the application of the kinship terms. Terms are not used in direct address, but as terms of description, save in mourning ceremonies, when a mourner addresses the corpse by the appropriate kinship term; at all other times, personal names are used in address, including that of child to parents.

Table 7. Kinship Terms

STRATUM	COLLATERAL	LINEAL	AFFINAL
2	Tupuna tane (great uncle) Tupuna wawine (great aunt)	Tupuna (grandparent)	Tupuna (spouse's grandparent)
1	Matua tane (uncle) Matua wawine (aunt)	Matua tane (father) Matua wawine (mother)	Matua angavai tane (father-in-law) Matua angavai wawine (mother-in-law)
0	Cousins of same sex as speaker, taina; cousins of opposite sex to speaker, kainga waka or wale atua	Siblings of same sex as speaker, taina; siblings of opposite sex to speaker, tua tane (w. s.), tua wawine (m. s.), kainga (m. or w. s.)	Taokete tane (brother-in-law), taokete wawine (sister-in-law). Affinal relatives generally, tao tangata
-1	Tamatane (nephew), tamawawine (niece)	Tamatane (son), tamawawine (daughter)	Unaonga tane (son-in-law), unaonga wawine (daughter-in-law). Affinal relatives at this level generally, konga tangata, as, tua konga tane, brothers of son- and -daughter-in-law.
-2	Makopuna tane (great nephew) Makopuna wawine (great niece)	Makopuna tane (grandson), makopuna wawine (granddaughter)	Descriptive terms, as, wawine na taku makopuna tane, wife of my male grandchild.

One important characteristic of the Pukapukan system is the absence of special terms to express seniority among lineal descendants of the same stratum. This is done only by the addition of descriptive terms. A younger brother calls an older brother *taina maa*. By the use of the terms *mua*

(before, first), *loto* (middle), *muli* (behind, after) it is possible sufficiently to indicate seniority differences according to the Pukapukan pattern. The word *tautua* is occasionally applied by an older brother or sister to a younger sibling of the same or opposite sex. There are no special terms other than the descriptive words just given indicating seniority in cross sex reference; thus a younger brother calls an older sister *tua wawine mia*. Today, with the breakdown of the native system, Rarotongan kinship terms indicating seniority are commonly used. Sex differences on the zero stratum are indicated by the use of the terms *taina* between siblings of the same sex, *tua tane* or *tua wawine* between siblings of the opposite sex. Some informants tend to apply the term *kainga* (to be distinguished from the term *kainga wakama*, which indicates cousins of opposite sex) to siblings of opposite sex. In this sense the term is constantly used in folk stories, but one at least of our best informants did not agree with this use of the term, and others changed their opinion several times during the course of temporally separate discussions about the matter. Sex differences for other terms are indicated by the words *tane* and *wawine* for male and female respectively.

Descriptive terms are used to indicate remote relationships on each stratum if exactness of reference is required. Affinal relatives generally, at the zero and minus one stratum, are called *tao tangata* and *konga tangata* respectively. These words refer to close relatives by marriage connection, not by blood. A child of an unmarried mother is a *tama to taka*; spouse's child by another man or woman is *tama tau tokalua*. Conversely, blood mother or father's mate is *matua tau tokalua*. Blood parents are *matua wanaui* as opposed to adoptive parents, *matua laae*.

The eldest child, male or female, in a family is called the *uluaki*. *Ngaloto* is applied to the second child in a family of three or four children; to the second and third children in a family of five children; to the second, third, and fourth children in a family of six children. *Taina* is used for the next to last child in a family of more than three children. *Wakamuli* is the last child in any family. *Aukimua* is the heir apparent in the chiefly family, the boy either chosen by the father or generally reckoned to be the child likely to succeed to the title. *Angawale* (grandchild) is a term with more affectionate feeling tone than the colorless word *makopuna*.

In spite of the strong matriliney in Pukapukan society, there is no special term for mother's brother, nor any indication of special obligations or privileges between mother's brother and sister's child, corresponding to the *lamata* or *vasu* relationships of Samoa and Fiji. The word *ilamutu*, however, has meaning for the Pukapukan:

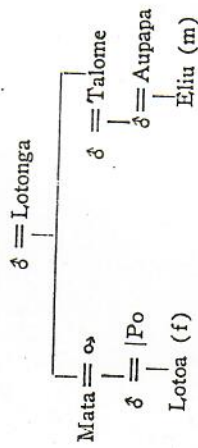
It is now an archaic word, found only in old chants, and not in current usage. A man's adopted child (*tama kokoti*) of either sex who is the blood child of a female blood relative of his own generation—that is, of his older or younger blood sister, or of his

cousins-in-avoidance—is the man's *ilamutu*. The father calls the child my *ilamutu*; the child calls the father my *matua*. No such term would be applied to the child of a brother adopted by the brother's sister, nor to a grandchild adopted by grandparents.

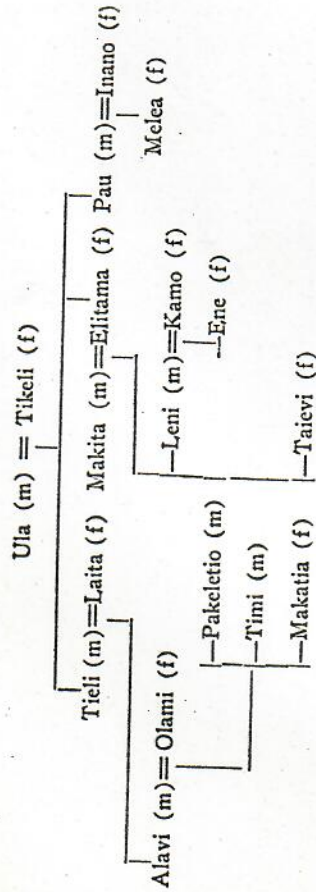
Hutchin (18) is the authority for the statement that *inakava* (*sic*) is the term applied to the daughter of a sister. What this means is not clear. The word *yinakava* is archaic and is found only in old chants. It is applied to anything or anybody which is tapu. Hence the god house on a double canoe or a sacred structure is *yinakava*. Similarly one who stands in the relationship of cousin-in-avoidance to the speaker is *yinakava* to the speaker. A man might call his cousin-in-avoidance my *yinakava*, but only under stress of emotion as in mourning ceremonies; in a love chant one's cousin-in-avoidance may be addressed, by poetic metaphor, as *yinakava*.

Avoidance relations hold between those who are related to each other as *kainga wakama* or as *wale atua*, and differ in intensity for the two types of relationship. The *wale atua* relationship involved more complete avoidance. But what constituted the difference between the two relationships is hard to distinguish at this date, as both have largely disappeared under missionary influence. Groups of informants were decidedly unclear on the subject, some giving as *wale atua*, for instance, the names of people who did not themselves recognize their *wale atua* relationship to the others. Pau gave the clearest definition of both terms:

First cousins of opposite sex, whether cross or parallel, stand to each other in the relationship of *kainga wakama*. In the next generation, children of opposite sex of these *kainga wakama* are *wale atua* to each other. In the next generation children of opposite sex of *wale atua* are also *wale atua*, and so on, theoretically as long as the common bond of descent is remembered. Children of the same sex of *kainga wakama* are *taina* to each other. Children of these *taina*, as also children of *taina*, themselves the children of brother and sister, if of opposite sex, are *wale atua* to each other. Similarly, children of the same sex, of *wale atua* are *taina* to each other, but children of opposite sex, of these *taina*, are *wale atua*, because, in both cases, the remembered ancestors two generations back were either *wale atua* or *kainga wakama* to each other. This is illustrated in the genealogy:



Mata and Talome are brother and sister. Their children, cross cousins of the same sex, are *taina* to each other. The children of these *taina*, Lotoa and Eliu, are *wale atua* because they are related through *taina*, first cousins of the same sex, who again are descended from blood brother and sister. Children of Eliu and Lotoa, of the opposite sex, are *wale atua* to each other.



In the above genealogy, the three children of Ula and Tikeli, Tielu, Ejitama, and Pau are brothers and sister. Their children of opposite sex are *kainga wakahama*. Melea is a *kainga wakahama* of Alavi and Leni; Taievi is *kainga wakahama* to Alavi. In the next generation, children of these four are *wale atua* if of opposite sex, *taiua* if of the same sex. Hence, Pakeletio and Timi are *wale atua* to Ene; Makatia and Ene are *taiua*. Children of these last two, if of opposite sex, will be *wale atua*, because their parents are one generation below those who are *kainga wakahama* to each other.

Midst the general confusion, Veti and other informants believed that the *wale atua* relationship arose only when there was a first-born female with brothers and sisters in the generation level from which descent was traced. This characterization would have more weight if there were other patterns in Pukapukan society pointing to the importance of the first-born female in the formulation of kinship patterns and practices. Since there are no such patterns, it is best to regard Veti's belief as incorrect and merely an example of the confusion that holds today regarding kinship structure.

Kinship tapus and avoidances may be summarized as follows:

Kainga wakahama may not marry or have love affairs with each other. They may talk together at a family meeting or when others are present, but such talk must be brief, and must be done with downcast eyes. They may talk together privately only under extreme provocation, as, for instance, to warn one another of impending danger; yet even in such an instance the rule is not often broken. They may sleep in the same room with other relatives, but not on the same mat or under the same mosquito net. They may eat together publicly, provided they eat from different food platters. Some informants say *kainga wakahama* may pass each other on the road, perhaps with a brief greeting; others believe they should not pass on a path.

Wale atua tapus are more stringent, demanding a total avoidance. *Wale atua* may never communicate or talk directly to each other. They may never be in the same house together. They must avoid each other on a public road. They may be together at a public meeting, but must occupy places as far apart as possible. This tapu includes the husband or wife of a *wale atua* in relation to the reciprocal *wale atua*. Thus, the husband may talk to, but not wrestle with, the *wale atua* of his wife. He may go in a fishing canoe with her *wale atua*, provided a third party is present. He may not talk privately to his wife's *wale atua* to proffer requests for fishhooks or gear, but must wait patiently until the *wale atua* notices his need. Children of *wale atua* may speak to their parents' *wale atua*. If, while a husband is beating his wife, her *wale atua* appears, the husband desists immediately because of the tapu relation between the two people. A whipped wife might take refuge from her husband with her husband's *wale atua*, knowing

that the husband would not dare to come to her as long as she remained with his *wale atua*.

In the relationship of two *wale atua*, the wish of one is always acted upon by the other; it is even equivalent to a command that may not be disobeyed. A sure way for a boy of former times to get an unwilling girl to marry him was for the boy to work for the girl's *wale atua*. No word was said about courtship, but the male *wale atua* knew that the boy wished to marry his female kinswoman. If he was pleased with the boy, he sent a message to the girl, telling her to marry the boy; a girl would rarely disobey this command from her *wale atua*. A girl might similarly court a boy by working for his female *wale atua*. Even today, where a boy or girl voluntarily works for *wale atua*, people know he or she is trying to force a marriage with the related *wale atua*, though today the wish of the *wale atua* is not so unhesitatingly obeyed as formerly.

The death of one *wale atua* is the occasion for the display of unceasing affection by the surviving *wale atua*. Some of this affection may be real, brought to high tension by the repression of strong avoidances; some of it may be due to cultural fiction. When the *wale atua* is dying the other *wale atua* may be present and is allowed to talk to, embrace, and weep over the dying relative. (See p. 299.) It is appropriate for a surviving *wale atua* to mourn for a deceased *wale atua* for a period that would be considered extreme for other relatives. As informants put it, the surviving *wale atua* mourns more for a dead *wale atua* than for husband, wife, father, or children, and this is not considered excess of emotion. There is no ideology, however, of the relationship of *wale atua* in the Underworld, and informants were at a loss to know how they would behave to each other when they met there. Similarly, at parting, when one *wale atua* leaves the island to go away, it is considered proper for the *wale atua* to break the tapu at this time, to embrace and mix their tears. The parting may be until death, hence an approximation to death behavior is in order.

The tapus between *wale atua* come into operation when the young people become sociological adults (*wakatane* and *wakawarawine*). Before this time the two kinsfolk are considered children unable to understand the kinship tapus. Hence they may eat, live, and sleep together in the same house. In theory, the two *wale atua* are taught at the time of puberty the kinship tapus that they must observe toward each other, but presumably the educational process is spread out over a longer period—otherwise the validity of the tapus have little opportunity to be established. A grown female may be present at the birth of her younger male *wale atua* and take care of him during infancy and childhood; similarly the older male *wale atua* may care for his younger female relative. Friendly, non-tapu relations are maintained between the two until the younger of the pair reaches puberty, when all connection between them ceases and the strictest tapu is established.

When the adopted (*kokoti*) child joins his new household group, he becomes a *wale atua* of the children of the adopting parent's sibling's descendants. Other things being equal, he ceases to regard as *wale atua* those children who would have been his *wale atua* had the adoption not occurred. This follows from the fact that the *kokoti* child is in the "as if" relation of blood child to the adopting parents.

The actual operation of the *wale atua* relationship was observed in the case of Eliu and Lotoa (p. 259):

Lotoa is some years older than Eliu. She lives directly opposite him, across the village road. The two never come closer to each other than the width of the road. They never talk to each other. Should both be sitting outside their houses, they never look at, or face, each other. We asked Lotoa to cross the road one day to the rear of Ehu's house where light was favorable for taking photographs. She refused for a long time, and only came, in the end, when Ejiu retired to a safe distance, and her husband persuaded her that it would not matter for once. Immediately the snapshot was taken she hurried back to her own house and sat with her back to us. Veti, Lotoa's husband,

visits at the house of Eliu, and Molingi, Eliu's wife, visits with Vetu. Neither Eliu nor Lotoa visits the opposite house, even when he knows the *wale atua* is absent, through fear of inadvertently touching objects belonging to the other. All communication between the two is carried on through a third person.

The resident agent remarks on the difficulty of court work when *wale atua* are involved in a case. Neither *wale atua* will appear in court to act as witness or plaintiff but insists on sending a proxy. If the agent insists that both *wale atua* shall be present in his court, they turn their backs on each other, keep as far apart as possible, and direct all questions to each other through intermediaries.

The intense tapu that exists between *wale atua* relatives is supported by the cultural fiction that they are potentially and actually more interested in each other emotionally than in other members of the opposite sex:

Sometimes in spite of the tapu *wale atua* become so shameless as to consummate an emotional attraction. Formerly, where this actually happened and was discovered, the couple were rendered outcasts by their families, who prayed to their family gods to punish with sickness the terrible sin. The common punishment asked for was filarial infection of the two *wale atua* and their descendants for ever and ever. Some informants tended to take the incidence of filaria today as due to forgotten or half-forgotten *wale atua* incest in the families of those affected. One well-remembered case is that of Pokula who married his *wale atua*, Woctau, just after the mission was established. Husband and wife, their twelve children, and numerous grandchildren all suffered and continued to suffer to this day from filarial infection. One old man, a good Christian, calmly assured me that his filaria was due to the fact that his first wife was his *wale atua*, whom he married in an excess of Christian zeal with an idea of proving that old tapus were worthless. He expressed no regret at his hasty action.

The attraction of *wale atua* for each other is mentioned many times in the old love chants (*kupu*), many of which seem to have their origin either in a hopeless or in a consummated affection of one *wale atua* for another. When asked for rationalizations for the *wale atua* tapus, informants could only quote the two following sections from *kupu*. The rationalization is obscure and can not now be clarified, but there is no mistaking the intensity of emotion that finds expression:

Ko Mataliki koe, ko Tolu au
Ya nono ma lua pulotu
Wuli mai, e toku wale atua
E yinakava, e konga tatapu
Na wakawowo oku manako;
Tuki toku puna pe te puna o te tawola tu.

You are Mataliki (the Pleiades), I am Tolu
(We lived) like two beauties together (as do these stars)
Turn to me, oh my *wale atua*
You are sacred, you are the tapu place
(For which) my heart has longed;
(When I see you) my pulse pounds like the breathing (blowing) of the Right whale.

The second chant runs:

Na wakavinanai oki ai au,
Ma yuke maya i te uluaki,
Wakangakau mate ai au
Kon wano i taku kai hunauga,
Ma taku kai walenga kia koe;
E kiai na toka toki manako,
Ko tuaki au no mai ma,
Niko pili au ma ke ngutuala,
Wuli mai koe ke talafala,
Wunaki atu niau niuna: wakaipo mo ko tana?

I had fixed my desire (on my *wale atua*),
The first-born opens (herself to me) and satisfies my desire,
Dead is my heart (with shame),
I go to my shameful food,
With my incest for you;
Unquenchable is the desire of my heart,
(I am) dragged back (by it) to where you sit,
I return near (this place) by the main road,
You turn to me that we may talk,
I hide our secret understanding: we shall have intercourse, shan't we?

The consciousness of the breaking of a tapu is clear from the man's remark in this chant that his love for his *wale atua* is *kai lumanga* (food of shameful abnormality) and, further, *kai walenga* (incest).

No reference to *wale atua* incest is found in any of the myths or folktales recorded. The kinship tapus are best preserved today among the older people. Among the younger generations, several *wale atua* have married:

In one such marriage, the husband had to trick his protesting relatives by being secretly married. This was only possible because the Cook Islands Act allows *wale atua* to marry, and the resident agent had to perform the civil rite. Another marriage occurred just before we left Pukapuka. The bride's mother's brother refused to attend the marriage or to have anything further to do with his classificatory daughter. The groom's father at first objected because he feared the marriage would be sterile, probably owing to the breaking of the tapu, and his descent line depended on issue to the marriage. His fear was increased by the fact that though his son had been courting the bride for several years, no child had been born. The father finally yielded to the entreaties of missionary friends. Wiseacres predict that the marriage will be sterile, which is the very best that can be hoped for, apart altogether from visitations of sickness.

No purpose is served by traversing at this stage the actual functioning of the kinship system. It presents no features that call for special comment. Economic obligations associated with kinship relationships are discussed elsewhere. Similarly the importance of the kinship group in personal ceremonial is mentioned in the description of rites at birth, marriage, and death.

THE LIFE CYCLE

BIRTH

CONCEPTION

Conception is known as *te wakatitinga o te tama* (the placing in of the child). The period of gestation is called *te wakaikianga* or *te ikonga*. The primary meaning of the word *iko* is "to germinate" as in the sentence: "Ko te nene ko iko ai te tama" (it is the semen which makes the child germinate). The following is a typical explanation of conception given by a woman informant:

Conception involves an organ (*mama*) in both the male and female (*mama* is given elsewhere as meaning "lung"). The male secretion enters the female *mama*, the female secretion enters the male *mama*. The informant was unable to specify the exact location of this organ, though she thought the native practitioners would know. On being pressed to indicate the locus of the *mama* in her own body, she pointed to her stomach and said the *mama* was close to it. She knew that it is the semen that germinates the ovum, but could give no rationalization as to the method. She also said that it is the *mama* which generates the male and female secretions, and should this organ dry up, as it often does, then the person affected becomes thin and sickly, suffering from debility. This is a common disease in Pukapuka according to informant, one cause of which is too frequent copulation. Five or six times in succession on the same day or night, informant explained, would be too frequent.

The theory of conception was discussed with Pau, a native medicine man. His theory is that the semen of the man congeals the blood in the uterus of the woman. This

stops the monthly period and creates the fetus. If the fetus is male, it is formed mainly from the semen. If the fetus is female, it is formed mainly from the blood of the female. If the child when born partakes strongly of the likeness of the father and the mother, then it has been formed equally from the semen and the blood of the mother. The best time for conception, according to Pau, is immediately after the menstrual period, never before; common opinion, however, has no ideas as to whether one part of the monthly cycle is more or less favorable to conception than another.

The recognized sign of conception is cessation of the menses, invariably accompanied by the mother's having a *miti wakatiti tangata* (conception dream) of a coconut tree full of nuts, or of a fruitful talo patch, or of blossoming flowers or blooming trees. A later indication recognized is the darkening of the nipples. The sign for the father is a *miti wakatiti tangata* of a flock of birds. When a man has this dream he tells his wife of it and asks her to confirm the fact of her pregnancy. Pau said that the god of the lineage sends these dreams to the parents or to relatives of the couple, and they are sure signs of pregnancy.

Gestation is reckoned as taking ten full moons to complete. Delivery is to be expected on the tenth moon after conception takes place. A woman refers to the moon in which she expects confinement as her *wakangautu* (tenth). No mnemonic device is used in the moon count.

No contraceptive methods are known, nor is there a belief in the possibility of contraception.

No medicine or therapy is known that will enable a sterile woman to have children. The only cause of sterility and hence the only cure is psychological:

All the reasons adduced for specific cases of sterility relate to the primary cause that the woman, or her husband, has a bad heart (*ngakau kino*). In order to have children, the woman must be humble and obedient to her husband, faithful in thought and deed, not given to affairs with other men, and sincerely anxious to have children, upon which she must concentrate all her thoughts, during all her waking life. From this point of view, a Pukapukan woman is considered sterile (*wawine punga*, woman of stone) not only if she has not had children, but if she has borne no more than one or two, or again, if, having had a child by a first marriage, she has remarried and has had no more children. According to informant's classification, the cultural ideal may be carried so far as to consider sterile a woman who has had four children, all by her first husband, and all of whom have died. The cultural attitude to sterility is best illustrated by the remark made by a young man (*lopa*) to a sterile woman. It was on the evening following a big food division, when a group of young people were sitting about discussing the way the food had been divided. Chiding a childless woman of 35, the young man said: "What a pity to make a division of food for a woman without children. All she is good for is to *titiiko* (evacuate)." It is good to give a full division to a woman with children, because then the food goes to make more children, but if the woman is sterile, the food is wasted.

PREGNANCY

Nausea after eating is common at the beginning of pregnancy. Another illness that marks pregnancy is the formation of an abscess on the abdomen. This is likely to occur in the second month. Not only is the pregnancy the

cause of the sickness, but the sickness itself is proof positive of the pregnancy.

The parents may continue to have intercourse right up to the time the child is delivered, without causing any injurious effects either to mother or child. No new position is adopted in intercourse, but the husband takes care to lighten his weight (*wakamana*) on the woman as much as possible.

Many tapus are observed by the pregnant woman. When she becomes pregnant for the first time, her mother or other female relative warns her about the various restrictions: "Obey these and your child will be born well and in good health; disobey them and you will have a hard labor and the child will be physically disfigured or a weakling." Inadvertence or lack of knowledge is no excuse for the breaking of these tapus. Only rarely could violations be set right by special intercessions directed to the goddess Taua.

The following behavior tapus do not greatly restrict the everyday activities of the pregnant woman:

A pregnant woman may not spit out in quick succession any food, fish bones, or indigestible food scraps. If she does, her child will be born with a mouth that is continually drooling and dribbling saliva. If she needs to clear her mouth she is commanded vigorously once and once only. A pregnant woman must not work in the talo fields, not because of possible injury to the child, but because it is likely to cause hemorrhage at delivery. This tapu is rarely observed today. A pregnant woman should not adorn herself with wreaths (*yel*), decorative kilts, or other ornaments that are round around the body. If she does, her child will be born with the umbilical cord twisted around its neck, and as likely as not choked to death. A pregnant woman may not wind up hanks of fishline, or sennit of any sort, nor may she wring out coconut cream, wash dyes, or clothes after washing, nor may she have anything to do with twisted materials of any nature lest her child have its cord twisted about its neck. Mat making is not fraught with any harmful consequences, provided the woman does not roll her flaxing materials in the first place. If a woman quarrels with her husband, she will have a miscarriage, or else her child, when born, will be troublesome and hard to manage.

A woman who dislikes her favorite foods during pregnancy and longs for special dishes such as nuts with sweet husks, pandanus keys, flying fish, or *Tritidana* shellfish, may safely indulge her tastes provided she does not eat the following foods which will have disastrous results:

Eating *kaveu* crab meat gives her child crooked legs; eating *tupe* crab meat gives her child bow legs. The body of the *kaipea* crab may be eaten, but not the legs. Again, eating the abdomen of the *kaveu* crab results in red testicles in the male child or large red *labia majora* in the female child. Eating fish caught by spearing produces little peck marks or abscesses on the skin of the child. The fact that husbands are not careful about the way they kill fish is given as the reason for the wide prevalence today of chronic skin sores on many babies. These sores break out on the child in places corresponding to the places where the barb of the spear entered the skin of the fish. The pregnant woman may not eat any fish killed by a thrown stone or club, lest her child have a bad, injured foot or be born with the back of its skull soft and squashed in. Whether the fish is killed by her husband, by male relatives, or by unrelated men makes no difference to the incidence of the result. Hence a woman must be careful of the food she eats from a food division or feast.

Eating fish with small mouths, such as *manini* or *kaletau*, produces a small mouth in the child. Eating the head of a fish with a large mouth, like the groupers, produces a large mouth. Eating a horned fish, like the *une*, unicorn fish, or the *kolili*, produces a bump on the forehead of the child or a horn on its back (*tala tua*) similar to the "horn" on the back of the *kolili*. Certain other fish, like the *akuaku*, needle fish, the pregnant woman may eat with safety, provided she does not touch the head or the long tail. Eating a flat fish, such as the *ali* or the *paupangai*, varieties of flounders, makes the baby grow long and flat. Eating the head of a fish with large teeth produces a baby with two very large incisor teeth. Eating a fish that has poison bars or fins produces two bony nodules on the ankles of the child. *Pala* (*Acanthocybium*), albacore, bonito, red mullet, and snappers are considered good for the pregnant woman, but she must be careful to eat no fish which is beginning to spoil or has soft flesh, lest the skin of the child be soft and partly rotten.

In general, coconuts are good for the pregnant mother provided they are freshly picked from the tree. Eating or drinking nuts that are a day or more old produces sore spots on the skin of the child, for there is the presupposition that there are slightly affected spots on the shell or flesh of a nut one day old. If the drinking nut is very old, the skin of the child will be similarly rotten. Eating a very large nut produces a child with an abnormally large head. Drinking misshapen coconuts, of which a part of the shell is concave, produces concavities on the skull of the baby. Eating or drinking of a nut from the center of a large cluster of nuts, where the nuts have been tightly packed together in growing, compresses tightly or crushes the baby's head.

Eating the young shoots of the talo plant produces in the male child a birthmark on the forehead, in the female child a birthmark on the *labia majora*. Eating talo corns with large protuberances on them produces warts on the head of the child. Eating a tuber with a double root produces a male child with two membranes (*kalara*) on the scrotum, a female child with two membranes joining the *labia majora* to the anus. Eating rotten talo causes the eyes and navel of the child to be infected with disease, and gives the child a general physical weakness. Eating talo tubers that have been gnawed by a rat or *kaipea* crab produces sores on the skin of the child.

Eating the bud shoots on the side of the pandanus tree produces a child with two *piti wala* (cartilaginous protuberances—tragi) in front of the ear. Eating over-ripe pandanus keys produces sores on the body of the child. Eating crooked or misshapen bananas produces a male child with a very big penis or a female child with a very wide membrane between *labia majora* and anus.

Eating a bird whose wing was broken when it was caught produces a baby with weak arms; a bird whose chest was injured in the catching gives the baby a weak and diseased chest; a bird with prominent breast bones produces a pigeon breast in the child. Uninjured birds in perfect condition are suitable food.

A final class of foods that must be eaten with care is shellfish and turtle. Eating periwinkles (*alili*) produces warts (*ikonga alili*) on the top of the baby's head. *Tedacua* seems to be the only safe shellfish that the mother may indulge in. Eating the head of the turtle produces two scars on the mesial sagittal plane of the head like the marks on the head of the turtle. Eating the plastron of the turtle makes the child suffer from respiratory defects and breathe in a noisy, labored fashion after the manner of the turtle. Eating the carapace of the turtle produces a hunch-backed child. Eating turtle eggs produces a child born with a hernia. Eating the green fat of the turtle renders the child liable to be born with a perennially running nose and eyes. With the above exceptions, the flesh of the turtle is a good food for the mother to eat.

From the list of foods that she must take care not to eat, it is evident that the ideal diet for the pregnant woman consists of the general foods of the Pukapukan diet, with the caution that they must be fresh and sound in shape. Foods that have special peculiarities of shape are undesirable because

of possible contagious influence on the shape of the child growing in the womb.

The pregnant woman should be careful not to bring on miscarriage after the fourth month of pregnancy. Though there is no record of deliberate attempts to produce miscarriage by physical means, miscarriage is easily produced by psychological means. When a woman is dissatisfied with her husband, or commits adultery in thought or deed, or does not love her husband as she ought, or does not desire a child by him, or is in general mental distress, a miscarriage is likely to follow. No preventive is known to ward off the possible effects of such a psychological upset, save only the counsel to the married woman to be of good cheer and of easy heart.

As to the frequency of abortion, it was impossible to gain any information. There is a fairly well established technique for securing abortion, however, and informants could give many cases where it might be desired:

If the child is the result of incest; if the woman is tired of the man who is the father of her child and wishes to marry another man; if the woman fears that her husband will not wish to be the sociological father of her child or will despise her because she is pregnant by another man; if a married woman becomes pregnant by another man, and is afraid that her husband will thereby discover her intrigue; if a woman is pregnant by a man who is ugly or physically deformed, and is afraid her child may be born with the deformities of its father. For all these reasons a woman might decide on an abortion. A well-informed woman informant knew of none of her friends who had had an abortion, but she thought it occurred nowadays among unmarried girls.

The method of securing abortion is by physical manipulation, called *loni te wita* (pressure on the fetus) or *loni yafu* (pressure on the pregnant woman). A medicine is rarely employed because it is shameful to get an outsider to do this. The father or mother of the pregnant woman gives her a prolonged and severe *lonilomi* (deep pressure) using the *wakatele* technique (pp. 338), rubbing from the top of the abdomen toward the thighs. "The blood inside gets all mixed up, it flows outward from the body, and carries the child with it", is the rationalization given by Pau. He said this *lonilomi* method would be sure to work up to the fourth month of pregnancy. Another informant believed that the efficacy of the *lonilomi* would be improved if the hands were dipped in hot water before being applied to the abdomen. This informant also recommended that the pregnant woman should drink plenty of hot water.

Death during pregnancy or confinement is considered a particularly bad death (*mate yiti*), whether the child lives or dies. A deceased pregnant woman is buried in the condition in which she died; no attempt is made to remove the fetus from the womb to bury it separately. No special ideas of fear are associated with the ghost of an unborn child. Informants were very vague as to its exact status in the Underworld.

In general, the social attitude toward the pregnant mother is matter-of-fact. There are no tapus on her participation in social events. Tapus on her diet and behavior are all destined to protect her baby's health or bodily form; they are not a matter of social pride or shame in her. Her husband, if she has one, treats her with especial consideration during this period by provid-

ing her with more fish than he otherwise would. But her work is not lightened by outside assistance during her pregnancy.

SEX OF THE CHILD

Methods of determining the sex of a child before its birth are based on observations of the mother's abdomen and on dreams. If the pregnant woman's abdomen is small and extends outward in front, she is thought to be carrying a female child. If her abdomen is large and fat at the sides with predominant lateral extension, her child is a male child. If the mother or any of her relatives has a dream of talo during the period of gestation, it is taken as a sign that the child will be a girl. But if the dream is of a coconut tree, a male child is to be born. Somewhat similarly, a dream of a beautiful bird means that the child, male or female, will resemble the bird in beauty; a dream of a white man means that the child will be of fair skin.

There seems to be no cultural pattern of sex preference either for the first-born or for later children. A man wants his first-born to be a son; a woman wants a daughter. A family of children of alternating sexes (*poli toreviloviloaki*), with either a boy or girl as the first-born is generally preferred to a family of boys only (*poli tane*), or to a family of girls only (*poli zavavine*), or to a family of first boys and then girls, or vice versa. The prospect of having more boys than girls, or more girls than boys, were discussed by informants Veti and Talainga in a sort of informal debate. Veti is the father of three boys and a girl, all adult. Talainga, having had no children of his own, adopted a little girl (despite his alleged preference for sons). Their discussion is summarized thus:

Talainga speaks first: The desirable children are sons. I would not like to have daughters because they stop for only a short time beneath the roof of the father. When a girl marries, her husband takes her away to another house, and she is so caught up in the ties of the other household that she is lost to her father for good. On the other hand, a son stays at home, and when the father is old and weak the son will take care of him. The son's wife comes as a new person to the house. Where there are many sons, there are many wives who, with all their relatives, make many hands to assist in the work of the household. When the father is dead, it is the son who carries on the family line, whereas the daughter's children belong to the paternal lineage of another. Most men prefer their first-born to be a male. This gives much certainty to succession, it means that the paternal descent line will not be lost, whether the following children are male or female. It continues—bar accidents—the genealogical record, whereas daughters break the record and continue another line. Because of accidents, it is always well to have more sons than daughters. The descent line would be lost by a generation of daughters only, for the children of daughters go to the lineage of their father.

But something must be said for the point of view of the mother: she would be glad to have the first child a female, for this increases her status with the maternal lineage, assures continuation of descent within the lineage, and finally, gives the mother more help about the house as long as the child stays at home.

By having more sons than daughters, a man gets more food shares from various

types of food divisions (for work activities) than by having plenty of daughters to share in the wealth of the maternal lineage.

Veti says on this matter: my ideal family would be composed of equal numbers of male and female children. I would like daughters to assist in the work of the house while they are young and unmarried. I would like them for the food shares they bring in. Even though daughters are nominally lost to the family when they marry out and go to live elsewhere, nevertheless the system is so flexible that their husbands can eventually be relied on to help with food and work when the occasion demands. A son is necessary, especially a first-born son, so that the name of the family can be handed down to later generations.

As long as the daughters do not marry early, the father is assured that their food shares will be brought into the house for a reasonably long time. Whereas the adult son may get independent, go to live elsewhere, and take his food shares away from the house from an early age, a daughter would rarely be so independent. If the unmarried daughter has children, these remain with their mother's father if he so desires and insists, even though the daughter later goes elsewhere to live with the man she marries. These "illegitimate" children bring in more food shares to his household, and thus increase his wealth and status in the community.

Whatever prospective parents may prefer their child to be, no method is known to influence its sex. They can only fervently hope that the child will be what they desire. They may express their hope aloud in such words as, "Pi pe ta taua tama e vai tamawaine!" (If only our child will be a girl!)

DELIVERY

The pregnant woman continues to live in the house of her husband or father, if she is unmarried, up to the time of her confinement. When she feels labor pains (*wakatinga* or *wakatakataka*) she goes outside to the back of the house, if this is a quiet place, and lies down on a mat or coconut sheet placed on the ground.

No coconut cream or other purgative is given before labor to clear the lower bowel. In delivery, the parturient woman sits on the ground with her legs stretched out and apart in front of her. Should this position become uncomfortable, she changes to a squatting position. But she soon resumes the preferred sitting position. A medicine man specializing in obstetrics (*taugata wakarawanu*) or, failing him, any close male relative, sits in the same position behind her; she may also sit on his outstretched legs. The parturient woman is further assisted by another adult, usually a woman, mother or mother's sister, who squats in front of her and leans forward, usually a woman, mother or on the parturient woman's knees, thus giving her support in her straining movements (*kokononga*). When the baby comes (*to*, falls) it is taken either by the mother herself or else by the attendant in front of her. To help the woman in delivery, the *taugata wakarawanu* applies physical therapy (*papangi te tau muti*), pushing with the heel or the palm of the hand on the small of her back. If the baby appears to be coming out feet first, it is turned (*avavuti*) before delivery, by external digital manipulation of the abdomen.

Delayed childbirth or prolonged labor pains (*yapu lakata*) are believed to result from the woman's having copulated with another man after she became pregnant by the blood father of her child. When relatives hear of the hard labor, they gather about the parturient woman and urge her to confess (*tiiti*) all her sexual sins (*yala*). She is expected to confess in great detail from the first to the latest sexual irregularity. Only then can the child be delivered. An unmarried mother is also expected to confess all her sexual irregularities, giving the names of all the men with whom she has had intercourse, together with a list of all other sins she has committed. Confession is followed

with physical treatment. Formerly, a medicine man (*tangata yila*) was consulted. He diagnosed the case, then went to his god house, performed the pigeon-calling *lupe* ritual to his god, and received from the god advice on the treatment of the trouble. The man return to have been of a stereotyped nature, the suggestion that the medicine the back at frequent intervals. Today this procedure is followed as of rote. The parturient woman is not allowed to swim, but she is encouraged by her attendants to get up and walk about in the hope that the gentle exercise will encourage delivery. If this has no effect, *niri kalokalo* is prepared and given to the mother to drink: the grated flesh of a young nut is mixed with the liquid of the nut. The patient drinks about one pint at a time, repeating the dose at intervals if necessary. This medicine (*lakau*) is considered slightly laxative and is also supposed to cool the blood. Another recommended medicine, also taken at intervals, is coconut cream mixed with the expressed juice of pandanus keys. No other method is known to hasten delivery or ease the pain. Neither chants nor genealogies were recited to assist delivery.

Pukapukan theory is that children born during the night come out head first, and those born during the day come out feet first, in spite of the efforts of attendants to change the position of the child. No explanation could be offered for the case of a child recently born during the day with its head first. A day-born child is reputed to have a short expectation of life, it is likely to die even before it starts to walk. Apela, a young man rapidly making a name for himself as a baby specialist, was in attendance at the birth of a child one afternoon, the third to be born to the parturient woman, the first children having been still-born. Labor was not prolonged. After one *kokononga* (exertion of pressure) attendants saw the infant's head appear. The child did not come out. Five minutes later, the head again appeared, but still the baby did not come. After a further ten minutes of labor, the child appeared feet first, and was thus delivered. Apela plainly felt that the child would not survive infancy, because of its inauspicious introduction to the world.

It is related that formerly the birth of a child later to become a man of supernormal strength, caused the death of the mother. The child sprang from the womb with such force as to injure fatally the mother's internal organs. Thus were born Wattu-manava-nui (p. 379), Kui, and some of Kui's descendants (1).

When the child has been delivered, the blood is massaged into the cord (*pito*) and along the cord to the navel (*pito*) of the child. Without waiting for the expression of the placenta (*avenua*), the cord is then cut (*kokoti*) by the male attendant or the father with a sharp *valuyi* shell about 5 or 6 inches from the umbilicus, in no prescribed manner. A slip noose is made in a short length of sennit fiber (*pula korua*), slipped over the end of the cord, and passed to a point about 2 inches from the distal end. The cord is not folded back. The noose is pulled tight and knotted with half hitches.

The placenta usually comes away almost immediately without any difficulty. Mrs. Henry reports no failure in the expulsion of the placenta during the seven years she has been in Pukapuka. But should the expulsion of the placenta be delayed even as much as one half hour the parents confess to attendants any sins they have committed. Confession procures immediate expulsion.

The placenta falls into a hole (*Iua*) previously dug beneath the mother. Placenta and cord are immediately taken by an attendant to a section of the beach owned by the father's paternal lineage and buried in the ground. Clothes badly soiled in parturition may also be buried in the same hole. A *puahua* tree (later to be used for a canoe), a *puka* tree (the leaves to be used later for talo fertilizer), or a coconut tree is planted over the hole. Such a tree is referred to as *te avenua o Mea* (the after-birth of So-and-so). But informants suggested no connection between the life of the tree and the life of the child.

The parturient blood (*oto*) is tapu. It is allowed to drop into the hole under the mother which is finally covered with sand but not concealed in any other way. No rationalization could be obtained for the belief that the blood is tapu, nor were any con-

sequences enumerated that would follow if this blood came into contact with the clothes of attendants.

CARE OF THE MOTHER

The delivery completed, one or more attendants take care of the mother. The others look after the child. The mother's head was formerly covered with a piece of *weo* bark as soon as the child was born, in order to prevent her hair from falling out, a precaution not adopted today.

The mother's abdomen is massaged by her husband or other male attendant, who presses out the blood. Then the mother stands and walks to the beach supported by attendants. No portion of the beach is reserved for use in confinement. The mother wades into the shallow water, sits down, and expresses blood by exerting downward pressure on her abdomen. She remains only a few minutes in the sea, and then returns to the house, seating herself on coconut husks arranged to provide a comfortable seat. Attendants apply pads of coconut fibers, which are kept in position by a strip of *lauwitu* fiber, called for this purpose *tu*, passing first round the waist, then down over the pads between the legs, to be tied in the middle of the back. For the mother's comfort and support, a maternity band (*pale manava*) is passed round the abdomen and tied tightly at the back. This is generally not applied until the second day after delivery. It is not made in advance of the confinement, but is plaited by a female relative of the mother soon after delivery.

The mother sits with her legs folded under her, her knees propped up about 4 inches with coconut husks. This is believed to ease the flow of blood. With her arms tightly folded under her breasts, she presses upwards to hasten the flow of milk. In this position, called *kokowi* (to be cuddled up), the mother sits and sleeps for five nights and five days. She may lean back against a wall post or the house frame, but she may not lie down or release her tight hold on her breasts. She is allowed to stand and leave the house for the purposes of evacuation, but must continue to hold her breasts tightly. There is no prescribed place for her to evacuate; the blood in the feces is not considered tapu. At the end of the five night period (*lima po*) the milk will have begun to flow, and the mother may release her arms (*wiwe na keke*, expose the armpits). She takes up plaiting and other sedentary activities, not fully resuming active work until ten or more days have passed.

CARE OF INFANT

As soon as its cord is cut, those present inquire as to the sex of the newborn child, "E tama wea te tama nei?" (What child is this child?), and the attendant announces, "E ule (e wu) te tama nei" (This child is a penis, or a vagina). The terms *ule* and *wu* to denote the sexes of the child were formerly commonly used; a father, asked the sexes of his children, might reply: "I have two *ule* (sons) in my family, and three *wu* (daughters)."

The child is taken to the sea and washed. Then it is taken inside the house, rubbed with oil and wrapped (*laukango*) in soft pandanus mats. It is immediately fed with coconut cream (*lolo*) in order to loosen its bowels. Later it is placed beside the mother. For at least two days the child is fed by women of the house on coconut cream whenever it cries. When the mother's milk (*yua wu*) comes, the child is immediately given the breast (*wa wu*). Should the milk not flow by the second day, the child is fed on *lolo* until it does flow. Informants could recall no case where milk did not come by the

end of four nights after delivery. They said a child was never given to a woman other than the mother to be nursed.

Twice daily, morning and evening, the infant is bathed either in the sea or in fresh water, and then rubbed with coconut oil. When the cord falls off, coconut oil is spread on the navel. If the navel is sore, a *puka* leaf may be placed over it and tied with sennit fiber. The child is kept wrapped in a soft kilt or in soft pandanus mats.

There is no difference in treatment for the boy and the girl. No public announcement was made of the birth of the first-born child. Birth customs were the same for members of the chiefly families as for the ordinary populace.

A prematurely born child (*tama yuaia*), if it is born alive, has all the usual care devoted to it. Jealousy of her husband on the part of the mother is believed to cause the death of a premature child; her bad heart (*ngakan kino*) kills the embryo. A still-born child (*tama na mate i loto o te manara*) is considered tapu and must be buried in the appropriate cemetery, no matter how immature, deformed, or mutilated it may be. Not to bury the child with care would render the mother unable to bear another child. Such children were not named before burial.

Infanticide is unknown today; there is no record of its having been practiced in earlier times.

Twins (*vayanga*) are extremely rare. No ideas are entertained about their desirability. There is no formulated belief as to which of twin children is to be considered the older. Most informants agreed that the first-born would rightly be held the older of the two, though a minority felt that the larger child, irrespective of the order of birth, should be considered the older. No beliefs are held as to the magical powers of twins, nor are any special abilities attributed to them.

PATTERN VARIATIONS

Extremely realistic attitudes toward childbirth are held by Pukapukans. No sense of mystery surrounds the event. It is considered interesting to the whole community, as natural as any other fact of life. Anyone who feels inclined, man, woman, or child, has the fullest liberty to be present. Long hours of waiting are helped along with gossiping, joking, and laughter, while the children play about until late hours of the night. But, though the patterns of childbirth are firmly fixed and can be given by most informed adults, nevertheless in specific instances all sorts of confusion and inefficiency may be displayed, some procedures being forgotten, others performed out of order. Each birth is unique in its emotional overtones. A child may be born under matter-of-fact circumstances with hardly a person in the village aware of the fact. In contrast, a birth was witnessed in which the child was a long time being delivered, all those present becoming angry with the par-

turient woman because she would not help by confessing her sins, the final arrival of the baby finding all present quite unprepared:

The patient was a young unmarried Ngake woman, in severe labor. She was a *imavine zvon* (new to childbirth). Sitting outside the house at about 7 o'clock in the evening on some low, flat blocks of wood which were covered by a bundle of copra sacks, she was bracing herself by pushing down with stiff arms on coconut husks covered by mats piled on either side. She was assisted by five other women, her mother, her older sister, and three relatives. Other people came and went. The sister sat in front supporting the patient's feet under her legs, which gripped the patient's knees and held them tight. The other women held her limbs, her knees or legs, wherever there was room. From time to time the patient's father and classificatory brother came and supported her back, pushing down on her head, shoulders and back. When the labor pains came on, everyone present called out loudly: "Kokono, kokono ke ongo, kokono ke to!" (Bear down, bear down till it aches, bear down till it falls!) Everyone who could reach a hand to the woman gripped her limbs or body and pushed her legs downward and inward to her body, taking care to keep her legs well apart. Some pushed vigorously on her head and shoulders. At times there were at least ten persons all pushing parts of her body and calling to her to push the child out. She was accused of being afraid to press down and was continually scolded for not telling her attendants when the pains came on. The crowd not only remonstrated with her but also with each other, demonstrating in turn how the pushing should best be done and what type of groaning and grunting best helped the act of bearing down. Men made witticisms at every opportunity. Children became sleepy and drifted off to their homes. Gradually the crowd dispersed.

In the intervals between pains, one of the men or her sister sat behind the patient to hold her shoulders and support her back. For the rest of the time her back was unsupported, for she had been made to sit just far enough away from the framework of the house to be unable to lean against the house walls. She occasionally rose and walked to the beach, supported by her sister; her mother usually remained behind, giving those near by an opportunity to shout to her for not helping. Standing up brought on mild labor pains. The patient's hands and arms became very tired from leaning on them so long, but no change of position was suggested. She would squat low on her legs however or sit on her sister's knees for a change. Mosquitoes began to worry her until one of the attendants thought to fan her. At about 5 a.m. she went off to sleep.

In the morning an old woman of Loto who was reputed to possess special abilities for speeding up delayed deliveries arrived and everyone became noticeably more cheerful. She made up some special remedy for the patient, who refused to drink the rather muddy looking liquid. Later she yielded to pressure and swallowed several gulps. Then she was moved to a shady place on the beach under some coconut trees. The medicine woman placed her hands on the patient's abdomen and shook it up and down; she also exerted pressure with her finger tips on the abdomen in several places. Each time the patient pressed down she had vomiting fits, so she refused to bear down as much as the attending group thought necessary.

There was a constant coming and going of people at this time. There had been a death in Yato early in the morning and the group was constantly changing as women went off to attend the death ceremonies, or returned from them bringing all the news. Children played round the group on the beach. When they became noisy, they were ordered away to play elsewhere or told to go to Yato to see the death.

Noon came with no sign of the baby. The women decided that the patient should confess her sins as the only remaining method of speeding up delivery, but she would say nothing. Soon it started to rain and the patient was removed to the veranda of the house. She drank coconut liquid and ate *utō*. About 4 p.m., after repeated urgings to eat, the girl broke down, burst into tears, and in a low voice interrupted by sobs, talked freely. One woman said she confessed to having sinned against her mother, but

another said the girl had cried she was too weak to strain any more and could not bear the child. Her mother and sisters were sobbing violently, and all the women had tears in their eyes. Later all cheered up, ate *uto*, and then the patient fell asleep.

At about 6 p.m. the patient, in severe labor, crying out with real anguish, was sitting on the knees of an old man, attended in front by her mother and sister. The two women were pushing on her body so strenuously that when the child suddenly appeared they did not realize it. A girl among the observers cried out, "Na to!" (It's fallen!). Then everyone, men, women, and children, began screaming with a deafening uproar. Each person shouted just what should be done, but no one moved and the child lay on the ground where it had fallen. The sister jumped up and began to run to and from the house, until she realized that fresh water was the first thing needed. She ran off to a well close by on the beach (nothing had been prepared for in advance) and came back with water which the parturient's mother put in her mouth and spat out several times over the baby's head as it lay on the ground, to ensure that it would open its eyes. The sister rushed to the house and came back with a spool of thread, which was what the crowd was now screaming for. She handed the spool to a third woman near by, one of those who had been shouting loudest, but this woman refused to take it, saying she did not know what to do with it anyway. Then the sister ran back for a pair of scissors, and finally the patient's mother cut the cord and tied it with the thread. Then she picked up the baby and started off to the beach, but she was recalled by the shouts of onlookers, who told her to care for her daughter. She gave the infant to her other daughter, who sat with it on the veranda of the house. Everyone wished to know whether it was male or female, but the girl was fearful of uncovering the child now wrapped in rags. Finally she turned the rags back, mistook the cord for a penis, and said it was a male child. Noticing the mistake, she looked a second time, and announced definitely the child was female.

Meanwhile the old man massaged the new mother, and the placenta came away. The baby's grandmother helped the mother to her feet and supported her to the beach. When the grandmother stooped to pick up a comb she had dropped, the mother tottered and would have collapsed had someone else not run to her support. When she got to the beach she was washed as far up her body as her navel, was given a change of dress and made to sit down on the beach upon a pad of coconut fiber. She commenced to hold in her breasts tightly, but was allowed to lie down on a mat and rest for a short while. She was given a drink of warm coconut liquid while the men dug a hole on the beach and buried the placenta and cord. The infant had opened its eyes and moved its hand to its mouth. It was wiped with soiled rags and then covered with a piece of rag that its mother had been using all day as a handkerchief. The sister opened a mature coconut, scraped some flesh into a cloth, which was squeezed into the mouth of the child by the grandmother. Meanwhile the mother was taken inside the house. The grandmother continued to hold the baby in her arms all night, feeding it occasionally with coconut cream. Next day, the mother was sitting up, tightly clasping her breasts, while the grandmother was starting to make a mat for the baby. The child lay face downward on a pillow close beside its mother.

FEASTS AND NAMING

The birth of a child introduces a new member to the various social groups of the community. This introduction is marked by the holding of two feasts and by the naming of the child:

Immediately upon the birth of the child, the bilateral kin groups of the chief's parents prepare food, first for the *puaki* feast. This is a small division of talo and fish occasionally also of pig, arranged by the father for all those relatives and friends present at the birth of his child. It constitutes payment for the services of those attending the

mother during confinement; others are included for showing interest in the family's affairs by being present at the time of delivery. If the child is the first-born (*uluaki*), the *puaki* feast is followed several days later by the *waele* food division. If the *uluaki* is a male child, the division is on a bigger scale than for a first-born female. The division is held five to ten days after delivery, usually coinciding with the time that the mother is allowed to open her arms after her five nights of breast confinement. In an undistinguished family, the food division is among the bilateral kinship groups of the parents and may be referred to as a mere *tamamayangā* (eating). For a more distinguished family, one that ranks through status or wealth, the *waele* may include a food division for every family on the island. In such families, *waele* feasts may be held to mark the arrival of subsequent children, especially the birth of a male child if the previous children in the family are female.

The father generally chooses the child's name (*ingoa*) which he announces at the birth feast. But the mother or other interested parties may also give the child a name (*tapa te ingoa*) or names. The child may thus be known by several names in different groups.

The choice of a name may be determined by a desire to refer to or honor the special skill or profession (*waiwā*) of the father. If the father is a skilled canoe builder, then he will name the child with reference to canoe building or parts of a canoe. The name of an ancestor, or else a reference to some incident or event associated with this ancestor may be chosen. A name may also be taken from a younger brother or sister of the father who is childless or may refer to some contemporary event or person affecting the island, a tidal wave, for example, or the presence on the island of white visitors.

If the first child dies, the second child may be given the name of the dead child. If the first-born dies after the birth of the second child, the name of the second child may be changed to that of its deceased sibling. No idea is held of the reincarnation of the soul of the dead child in the birth of the second child. The feeling seems to be that if one thinks so highly of a name as to give it to a child then if the child dies the same reason for giving the name holds for the second child. If a man wishing to hand down to posterity his skill as a carpenter, names his child accordingly, then if this child dies, the same desire operates when he comes to name his next child, so he gives it the name of the deceased. A child may similarly be renamed for any close relative, not a sibling, who dies during its childhood. A feast was formerly held to mark the assumption of the new name, and gifts were given the recipient of the new name.

The name or names given a child at birth remain his names throughout life. Later on, however, when a boy joins a young men's house (*wale lopa*) or a girl a girl's house (*wale tamawawine*), he or she is given a new name by his or her companions in the house. This name partakes of the nature of a nickname, or at least is the name used only by one small group within the community, whereas the birth name is the name whereby the individual is known to the community at large. This was well brought out when collecting genealogies.

There is no sex distinction in names, and no class of words set aside for exclusive use as personal names. According to the choice of the parents, any word or words, taken from any sphere of discourse or any context whatsoever, may be applied to a child as his name. I have not considered it necessary to present lists of personal names. As is evident from a comparison with genealogies, old Pukapukan names survive today with a tenacious persistence. Western and Biblical names rendered in Pukapukan, however, have a certain popularity. Such names as Miti Moa (derived from Mr. More, a missionary), Miti Mali (derived from Mr. Murray, a trader), Moni Kula (brown money, gold), Apaunu (from the English "half pound") are examples of modern names and show both an originality in naming for which the Polynesian may well be proud and an appreciation, however mistaken, for the symbols of an allegedly superior culture.

in later life is absorbed from his association with his elders in their everyday crafts and tasks. Boys and girls learn to climb coconut trees, and both accompany their elders to the talo beds where they learn talo culture. While the boy associates with his male elders and absorbs a knowledge of fish and fishing methods, the girl stays with her adult female relatives and learns the preparation of foods and the plaiting of baskets, food containers, mats, and clothing. No one particular relative is more concerned with the education of the boy or girl than any other relative. Due to the vagaries of household membership and adoption, a child will learn from any related adults in the household.

It may well happen that where there are no boys in the family, or where there are no girls of appropriate age, the roles of the boy and girl will be for the moment reversed.

Thus, Pita, the oldest son in a family of six children, performs more household tasks than most other boys of his age (10 years). His daily duty to feed the pigs is one usually performed by adults. On Saturday, the great day of the week for food preparation, Pita regularly grates coconut for his mother's Sunday talo pudding, doing this in the morning while his mother and his young sister are away in the talo beds. Similarly, because there are no boys in her household, the little girl, Akakino, often accompanies her grandfather when he fishes from his canoe in the lagoon, helping him to bait the hooks, and takes a boy's share in the fishing activities of the household.

The use and control of fire is learned very early. Almost from the time they start to walk, little children carry burning coconut spathes from one cook house to the next.

One woman sends her grown daughter to get fire. The girl is accompanied by her brother, just learning to walk. When she lights the torch, he cries out for it. She gives it to him, and holding it at the proximal end, with the distal end resting over his shoulder, the little boy toddles home with the flaming brand. Three-year-old children are ordinarily sent off to get fire. They confidently put their piece of dried leaflet in any fire that is already burning, wait till it ignites and then stroll home very nonchalantly, carrying the torches over their shoulders or waving them in the air to produce a shower of sparks. The children have certainly no fear of fire and show great confidence and skill in its use.

In the more skilled men's crafts—the making of hooks, houses, canoes, nets, and fishlines—a boy learns today as he learned in the past, through watching and imitating an expert, either someone in the same household, often his grandfather, or one of the older men of the village group. The older men, being largely released from the necessities of daily fishing, have time for crafts. An interested boy or youth watches the older person at work, and is given at first simple tasks, later graduating to the more difficult skills under the tutelage of the old master. During the days when a village is preparing for a fishing contest, the boys and men sit about together and make or repair in common the fishing gear to be used for the contest. In this way the young people learn all there is to know about the making of fishline, anchor lines, and fishhooks, and are told whatever else of the art:

of fishing there is in tales and chants. Similarly, in the learning of the old chants and songs, practices are held before some village contest, and the village group of men and women, young and old, sit up throughout the night repeating time and time again the songs and chants which are to be sung at the conclusion of the contest. At the present time, when the villages go to the reserves to make copra, the opportunity is taken to alternate nights devoted to the practicing of chants with the nights devoted to the customary hymn practices.

PUBERTY

No surgical operation or physical manipulation was performed on the Pukapukan boy or girl. A foreskin naturally stretched back from the glans was considered a shameful abnormality (*huma*) because it gave the appearance of circumcision. It was a matter for joking among the girls and caused much sorrow to the boy affected. One reference only to circumcision occurs in the folk tales (p. 54).

The occurrence of the first menses is spoken of as the opening or piercing of the body (*na pu*).

Though her mother does not tell her in advance what to expect, a girl is nevertheless well informed from discussion with her older girl friends. When she finds herself menstruating (*toto*) for the first time, she says to her mother, "I aku na toto" (I am bleeding). Informants say that a girl is naturally frightened (*mataku*) or ashamed (*taukama*) when she first discovers she is menstruating. Cramps are common in both stomach and back. Periods range in length from three days to a week. The menstrual pad (*pu'u tauitape*) consists of several coconut husks pounded soft and tied with a piece of coconut fiber. Each pad is disposed of in a separate hole dug on the beach for the purpose. There is no fear of the blood. The method of disposal is merely a convenient way of getting rid of soiled objects. A woman does not have sexual intercourse during the menstrual period, on pain of becoming ill from having the blood "pushed up into her chest"; but there is no tapu on her activities or contacts with members of the household. No physical explanation is given for the facts of menstruation. If a young girl commences to menstruate before her mother considers that other signs of physical maturity warrant it, the mother is angry with the girl because this indicates that she is already having a love affair with some man or is, at least, already interested in the opposite sex. Molingi said, "Girls who do not interest themselves in men do not start to menstruate until later on when they are older and ready to marry. Girls who menstruate too early have an undue fondness for men."

Two types of physical therapy are used in cases of menstrual trouble. For menstruation prolonged beyond the average four days, the blood is washed away from the pudenda, and the parts bathed in hot water. For delayed menstruation marked by pain, the body is bathed in cold water, either fresh or salt, to cool off the body; and the abdomen is then pressed (*lomilomi*) until menstruation commences.

Informants could not explain the recognized connection between the cessation of the menses with pregnancy, nor could they explain the physiology of the menopause. This is referred to as the closing of the blood flow by the

phrase *koa punia* (it is closed). According to Molings, old women who have had all the children they desire simply stop (*mutu*) having further pregnancies by making up their minds that they do not want them. Informants said that the period of the menopause involves no physical or mental sickness, nor even inconvenience. A woman passes through the menopause as easily and naturally as the average woman bears children.

ACQUISITION OF ADULT STATUS

The rite by which the adolescent becomes an adult is known simply as *wakatane* or *wakarawaine* (to become a man or woman). It symbolizes to the community the sexual and social maturity of the individual. Pre-adolescent boys and girls formerly went naked. Though they indulged in no formal sex life, they acquired, through general education and sex plays, full knowledge of sexual behavior. When they have decided the time of maturity has come, the parents of the child formally report the matter at the village meeting. If a boy should try to wear a malo or a girl a kilt (*titi*) before the parents consider them mature, the parents would tear the garment off and make the young persons wait. The parents judge maturity by the secondary sex characteristics or by comparison with the other children of the same birth class (*tai tangata*).

The occasion for the *wakatane* or *wakarawaine* rite depends on the operation of the *tai tangata* system. When it is decided that certain members of a particular birth class are mature, all the boys and girls born in the same six-months period are also considered mature. Informants said that formerly boys and girls would be about 20 years old before they were judged ready to become men and women. If this figure is valid there has been considerable change, for children now become adults at the age of about 15 years. At the time that one group of children attains adulthood, the parents of the next birth class begin to make clothes for their children, six or seven pandanus malos for the boys and many kilts for the girls.

The adulthood rite was generally held during the first new moon of each six-months period. Announcement was made in each village of the names of the children graduating. Without ceremony and in their own house, the parents then formally dressed these children in malo or kilt. This is known as the *tau malonga* or *tau titinga* (putting on malo or kilt). One informant from Yato village said, however, that the men gathered for the *tau malonga* in the reserve of Niua, bathed the boys, took them to a watch house in the reserve, called for this occasion a *wale liakinga malo* (house for tying on the malo), and there dressed them in their first malos. No women were allowed to be present. This perhaps constitutes a local village variation on the more customary practice.

Girls had no further duties or activities to perform after they had been

dressed in their kilts. They remained at home and helped with general domestic tasks and in the preparation of the food to be given each day to the old men (*tupete*). The boys, however, went to the reserves on each of two days to get nuts.

In the big canoes of the old men all the graduating boys from the three villages went together on the first day to Motu Ko, on the second day to Motu Kotawa. At the reserve they got enough nuts to fill their canoes, at the same time being permitted to eat all the reserved foods they wished: nuts, birds, talo, crabs, and other foods. In the evening the boys sailed the canoes back to Wale. As they neared the beach at Wale, the champion wrestler of the graduating group stood in the bow of the foremost canoe. A champion wrestler from the young men's group (*lopa* or *muliraka*) stepped forward on the beach. The wrestler in the canoe performed the *tupe* ritual (p. 322) to challenge the man on the beach, who then made *tupe* in counter-challenge. When the canoes grounded on the beach, the graduates' champion leaped ashore, and the two wrestlers engaged on the beach before the assembled people. Several bouts might be held between graduates and the men's groups. The graduate champion who defeated the village champion gained great renown from this encounter and the right to call himself champion of the island. The evening wrestling on the second day concluded the rite of adulthood and the boys were now considered young men.

After attaining adulthood young men or women were eligible to marry, to receive adults' food shares, and to perform all the duties of adult members of the community.

YOUNG MEN'S FISHING GROUP

Having become adults, the young men of a *tai tangata* (birth class) next graduated to the *tanganga* fishing group. Some informants said that the boys belonged to this group for two years, but membership of the *tanganga* group was normally for six months, until the boys of the next birth class were ready to take their place. If, however, the succeeding group was small, the preceding group would continue to help with the *tanganga* fishing until successive graduating groups became sufficiently numerous to enable them to retire from the daily fishing expeditions.

The *tanganga* fishing group was arranged at a meeting of the old men (*tupete*) held immediately after the adulthood rites were finished. Some informants thought that all the new adults went fishing together in one or more canoes, depending on the number of graduates. Others believed that each boy chose a crew from among his male relatives so that, if there were seven boys in a birth class, there would be seven canoes fishing each day. Probably this second belief is mistaken. But if there were only two or three boys in a birth class and if it was impossible to draw on preceding age groups, these boys would call on their relatives to make up a crew. The nominal leader of the *tanganga* group was the member of the birth class after whom the birth class was named. He was responsible for the conduct of each day's fishing operations, arranged for fishing gear, canoes, and bait, and attended to the handing-over of the fish to the old men.

The *tanganga* fished for such deep-sea fish as bonito, turtle, albacore, and other *tau waiwa* (large deep-sea) fish. They went out over the reef each day it was possible to make the passage. After catching enough fish for the

day (one or two *pala* or albacore would be sufficient) the boys returned to the village and took the fish to the old men, who divided them primarily among themselves and secondarily among the people of the island if the catch was large. Reef fish, rock fish, and other non-deep-sea fish caught by the *taunganga* were kept by the boys for their own food. The old men gave some of the talo they received each day in the form of gifts and contributions from the old men's households to the *taunganga* boys to eat on their fishing expeditions. It was this food which the graduated girls helped the women of their households to prepare. After returning from fishing, the boys were free from formal duties for the rest of the day.

SECLUSION

Some time after a group of boys and girls had attained adulthood a paternal lineage (*po*) might decide to hold a *kaitau waakayawi*, an institutionalized seclusion period intended to fatten their bodies, whiten their skin, and so make good marriages for the children of the *po*:

Any number of boys and girls, generally from one to six from a lineage, might be selected. There were separate houses of seclusion (*waite kaitau*) for each sex. The *waite kaitau* (any house chosen for the purpose) was made quite dark by covering the walls (*piipui te waite*) with several layers of overlapping wall sheets and mats. The floor was first covered with mats, then with *puhaka* and *lau kotarua* fern leaves over which coconut oil was liberally spread. The secluded children were made to lie on the leaves, their bodies and heads completely covered with mats. They might eat, lie, or sleep in any position provided they kept well covered. They were given especially fattening foods in large quantities. The food for the following day was pushed into the house at night under the lowest wall sheet so that no light might leak in. Two male relatives guarded the boys' house, and two female relatives the girls' house. The guards (*tanit*) remained continuously outside the house to see that no prowlers entered. Accompanied by a guard, the children, covered tightly with mats bound with semit, left the house at night to evacuate. The beach they went to was referred to as the *nuku waite*, which was also the special term for defecating used only in reference to *kaitau* children. The guards made sure the children did not stray abroad but returned to the house immediately. The young people were kept thus in seclusion for one moon.

When the house was opened up, the children, fat and fair, were taken to the beach to bathe. After being inspected by the members of the paternal lineage, each girl was dressed in two kilts, each boy in a new malo. Decorated with pearl-shell and flower ornaments, they were paraded through the village for all to admire. All the people came to see their beauty, expressing admiration in such terms as, "How beautiful, how fat, how fair", and wondering what men or women would be lucky enough to get such husbands and wives. Only a man who was a good fisherman and rich in nuts and talo could hope to get a fat, fair wife, and only a fat woman would be able to get a *kaitau* husband. The parade over, the girls returned to normal life with the expectation of making a desirable marriage. For the boys there was often a further ceremony (*kaitau lukipoko*):

When several paternal lineages had been holding a period of seclusion at the same time, the boys' parade took them to the god house of one of the lineages, where a *kaitau lukipoko* contest was held. Each boy of the home lineage knelt with his back to a post of the god house and performed the *lupe* ritual (p. 322), beating his thighs with his hands. When the people of the other lineages heard the boys at their ritual, they sent their own *kaitau* boys to the same god house. On arriving, each boy of the second group crouched down in the customary half-bent position, beating his knees and thighs, and making the sound "br-r-r" with his lips, advanced to one of the kneeling boys from the two locked shoulders. The challenger tried to push the kneeling boy away from the post, while his opponent tried to push him over and still retain his position by the post. The boy pushed away lost the contest and retired. The winner of a contest might go to the help of another boy of his lineage still engaged. He helped his friend, grasping him round the waist from behind and pushing with all his strength so that their combined weight might overcome the opponent. Insofar as the opponent might also be supported, strenuous contests resulted. The *kaitau* group that vanquished the most boys of the opposing group won the contest for their lineage. The defeated lineage had to wait till a later *kaitau lukipoko* to avenge its disgrace. The struggle over, the boys returned to normal group life.

Informants were vague as to the significance of the *kaitau lukipoko*. It is likely that values besides the mere sporting ones have a place in its symbolism. The significance of its association with the god house where the priests were accustomed to worship the gods, and the employment of the *lupe* technique customarily reserved for putting the priest *en rapport* with his god, is obscure, and I have no cultural rationalization to offer other than my own speculation that the contest was originally a feature of religious initiation following on the initiation into manhood, which has been lost to the present generation of Pukapukans.

YOUNG MEN'S AND YOUNG WOMEN'S HOUSES

In everyday activities there is little difference between the life of the youth and that of the young adult. Young men and women are expected to engage more seriously in work, the boys fishing, the girls helping consistently with household duties. In the realm of sex they are now considered mature enough to lead sexual lives. For this and other purposes they might formerly leave the family house and live in *waite lopa* or *waite taniarvine* (young men's or young women's houses) with companions of their own age and sex. It does not appear that these houses had the institutional character associated with the bachelor houses of Melanesian communities. There was nothing obligatory about membership in them. The way in which a young men's house might be formed was explained by informants as follows:

A boy or girl might invite one or more friends to come and live with him at his parents' house. Some parents might not object, as living in the house implied obligations to assist in providing food and brought extra food shares to the household. On the other hand, a parent might object to having several young men (*lopa*) or women (*taniarvine*) around his house, especially if they were lazy, and would tell his son or daughter to go build a house elsewhere, where he or she could live with friends without annoying anyone. The house was built on any convenient site—on land owned by the

child, the parent, or one of the friends. The young men or women used their house as a lounging and sleeping house while continuing to eat their meals with their parents, to assist them in the general tasks of food getting. A parent who did not want his child to leave home would tell his child's friends to betake themselves elsewhere.

For the most part, young men and women stayed at home, lived with their parents, and assisted with the tasks of the family. A child who stayed at home was a *tama pili matua* (child close to parent). A favorite child (*tama wakaruaema, tama yele, or mayi*) was never permitted to live in a young men's house, especially if the parents, wishing to make a good marriage for the child, had gone to the trouble of graduating it from the house of seclusion. On the other hand, wayward children were not hindered if they wished to live with their friends. Residence in a young men's or young women's house was continued until marriage or until vagaries of personal choice sent the young person back to live with relatives. The present resident agent in the interests of morality does not allow unmarried young people to reside in young men's or women's houses, and this type of living arrangement has been officially discarded.

CULTURAL ATTITUDES TOWARD SEX

Once a Pukapukan boy or girl has attained adult status, he or she is at liberty to have sexual experience irrespective of marriage, which indeed usually comes much later in the life of the adult and only when he is ready to assume the specific economic responsibilities that marriage entails. It is a matter of no importance that a girl or a bride should be a virgin. There is no word in the language to characterize such a physiological state. Rather has a woman who has borne a child out of wedlock by this act proved herself able to bear her husband heirs to carry on his paternal descent line. A girl for whom parents wished a particularly good marriage found a certain but minor emphasis on the importance of preserving virginity, but this was more a matter of preventing her from attaining a reputation for being promiscuous than a matter of interest in her virginity. That the sacred maid (*mayakitanga*) of the chief was barred from sexual intercourse of any nature throughout her life was perhaps due to the religious functions she had to perform and was, at any rate, exceptional.

For the ordinary girl there is nothing in Pukapuka approaching the institutionalized rupturing of the hymen by an elder which occurs elsewhere in Polynesia, nor is there any institutionalized instruction of the adolescent in sex matters. Knowledge was obtained by the boy or girl through personal experimentation with members of the opposite sex. Informants remarked that a virgin who wishes to save her lover the trouble will digitally rupture her own hymen before going to him. But this is a matter of individual choice.

The cultural attitude is that the man is and should be the aggressor in initiating sexual experience, the woman the passive agent. Molingi, the informant consulted most freely about these matters, expressed the feeling of cultural disapproval when she stated that most girls of her acquaintance are bad (*kimo*) because they are *wia eia* (run after men). She stated that some of these girls have sexual intercourse before the menses occur, but they are exceptional. Molingi distinguished between those girls who are really promiscuous (*wia eia*) and those who have but one or two lovers. She attached no moral blame to married men who cohabit with unmarried girls, but placed all the blame on the girls. Whereas the term *wia eia* is theoretically applicable to men, it is in fact applied only to women, which again indicates that the man is the rightful aggressor. If the role is reversed by a woman, the man is considered helpless and blameless; disapproval is reserved for the woman, and no regard is paid to deviant personalities which may be unable to conform to the cultural standard.

The story of Wanguna (p. 386) tells of a woman who led all the men of the island astray through her aggressive sexual behavior and thus provoked the wrath of the gods to send the seismic wave. Where historical narrative notes that a man led the women of the island astray (story of Waletiale, 1), there is no mention of the anger of the gods being directed against him, even though he is eventually killed by a group of irate husbands. The periods of license that sometimes accompanied the chanting and dancing after fishing and wrestling competitions of former days were excused by some informants on the grounds that it was invariably the women who became worked up to such a pitch of emotional excitement that they would tear off the garments of the men. This is commented on by passages in the chants.

The general attitude toward sex on the part of both children and adults is that it is a pleasurable play activity. Save obscurely in the case of the sacred maid, there appears to be no connection between sexual practices and typical religious complexes, nor is there any association between ideas of fertility and patterns of religious behavior. The word for copulation among animals is the same as the common word applied to humans, *konikoni*. Attention is frequently directed by adult and child to the copulation of domestic animals, particularly ducks or chickens. A group of people sit and watch the behavior of these animals, not with curiosity, but with an attitude of sympathetic interest and a realistic appreciation of what is happening. A typical comment made after ducks have copulated is the call to the male duck: "Te mokola e, to ule ko tautau ki te kilikili (O duck, your penis is dragging on the ground). Both children and adults laugh heartily at this witticism.

Though in general there is no fear attitude associated with relations between the two sexes, nevertheless sickness may be transmitted from one

person to another in sexual intercourse. If a sick woman has intercourse with a man she gives him her sickness because, in native theory, her secretions (*vale wai*) enter into his internal organs by absorption through the penis. Diseases that are spread in this way are mainly swelling in various parts of the body, but pains in the stomach and other minor ailments may also be communicated. A married couple with children rarely have intercourse within the sleeping house, not because they object to the children's seeing them, but because of the danger in possible contact of the child with secretions on mats, which would give the child illness and limb swelling.

Various terms are applied to individuals who show peculiarities in sexual behavior. An impotent individual is a *taugata matuka*, which also means a person lazy or slow in economic activities. A man who changes mistresses frequently is a *taugata maka wawine* (thrower away of women). It is said of him: "I te wakapau wawine" (He is a woman waster or finisher). An over-sexed man or woman is *nio toto* (bloody teeth) or *kai vaka* (canoe eater). Of the promiscuous (*wia eia*) woman it is said: "Ko tuku wua i tona wu yaka yua" (She places her vagina at anyone's disposal to be poured into). A husbandless woman who runs after married men is *lakan taatar* (stick or penis gatherer). A man or woman who settles down after a period of freedom to a monogamous existence is described as *na waiu* (having had enough).

Perversions, in the sense of sexual practices that take the place of sexual intercourse, are probably unknown in Pukapuka. This is without prejudice to acts or feeling attitudes that may accompany ontogenetic character development in the strict analytic sense but which, even if they occur, may not properly be classed as perversions. There is no word in Pukapukan speech to indicate homosexuality, nor could informants say that it ever occurred. At present there is one youth in Yato village who is said to *wakawawine* (be like a woman):

Between 16 and 17 years old, he appears fully developed physically but has a rather effeminate high-pitched voice. He wears men's clothes. He does not stroll about the village as do other young men who congregate first in one open house, then in another, for gossip. He keeps very much to his own house lot, where he is often in the company of women. He performs general women's work, makes plaited and beaded objects, sews more than is usual for a male, and cooks. He also does a little men's work, fishing, nut gathering, and husking, and semit making. He occasionally wrestles with other men but does not participate in most sports. Peculiarities in his behavior are noticed by fellow villagers but not commented upon openly. He still attends school and is popular with his schoolmates. He showed the greatest possible reserve in our presence and we were unable to become friendly with him.

There is no evidence of the use of love magic. Informants with whom the matter was discussed thought the idea absurd. Their attitude was that it was not difficult for any man to secure a mistress; there was then no use for special magical techniques. With their concept of sex as a play activity,

informants felt any woman is just as interested in playing as a man, and apart from natural antipathies no difficulty arises in securing favors from the woman of one's choice.

The only account in the folk tales of what may be interpreted as the use of love magic occurs in the story of an oversexed and greedy man named Vavaka, priest of the god Te Atua Vaelua:

Vavaka was extremely fond of grated green nut flesh (*niiu kalokalo*) and spent each day making large quantities of the food. This became a matter for ridicule by the women and girls of the community, who would pass by his door making fun of him and his food. Vavaka resolved to have his revenge upon the women. When night fell, he went to gather *nanu*, *weetan*, *kupua*, and *tiale* flowers, brought them to his house, and made "the thing" for his god (*wai ake te nua a toa atua*). He gave the preparation (*awingae*) to his god and prayed: "O Vaelua, take you the spirit of the woman here, she is a difficult woman, a woman besides, who dislikes me. You take her to your fragrant isles (*o nuku kakata*) to tame her spirit (*wakalata i tana mauiti*) so that your priest here may go and try to wake her by his shaking, and if she wakes not, then let your priest have intercourse with this woman." Later in the night Vavaka went to the woman. He enjoyed her and when he left he said, "Ongalonga!" (There, I have got even with you). On other nights Vavaka visited other women who had shamed him. Then he desired married women, and again he prayed to his god to take the spirit of the married woman and her husband to the fragrant isles, so that he could sleep with the woman without her knowledge. Vavaka finished his prayer and ran to the house of the woman. With his knife of *hala* jawbone he slit the mosquito net in the region of the woman's genitals and enjoyed her. Then he boasted as before, "Ongalonga e te tama kaugata" (I have got even with the difficult child). Then in after days Vavaka would sneer and taunt the women saying, "Even though you just walk on the land, my fishhook (for catching women) is large enough to catch you."

The magic employed in this story seems to have consisted of a gift of fragrant flowers to the god, the implication being that the god would lull the senses of the intended victim with the scent of the flowers, or else, more obscurely, that the god would transport the spirit of the victim to an island where the scents were as fragrant as the flowers. The lovemaking of Vavaka was crude and wild, but he was animated only by motives of revenge for ridicule cast at him.

A study of the chants (1) indicates that although sex is treated in Pukapuka with extreme realism, nevertheless the sexual relation is not one of crude realism. Feelings of affection and beauty enter into relations between the sexes, and in the love chants (*kupu*) the composer is always at pains to indicate his feelings for his mistress by a variety of metaphors:

The woman, for example, is compared to beautiful white pearl-shell fishhooks, she is as straight and beautiful as a perfect canoe log, she is as handsome as foreign people and as fair, she is as beautiful as the flowering buds of the coconut tree or the scarlet flowers of the *wakauara* tree; her body is fat as the delicious albacore fish. Again, her skin is as smooth and shiny as the side of a new canoe adzed by the expert, the *tinea* marks on her skin are like the rows of morning stars, her eyebrows are fashioned smooth as the feathers of the tropic bird, the inside of her thighs is bright as the flash of lightning or the gleam of the moon, her voice is like the beautiful crying of the white "rat" (cat). Associations of the genitals of the man or the woman with beautiful objects