SMITHSONIAN INSTITUTION.
UNITED STATES NATIONAL MUSEUM.

DIRECTIONS FOR COLLECTORS OF AMERICAN BASKETRY.

BY

OTIS T. MASON,
Curator, Division of Ethnology.

Part P of Bulletin of the United States National Museum, No. 39.

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The sallow knows the basket maker's thumb.—*Emerson.*

INTRODUCTION.

The following instructions are published for the great number of persons who are interested in the collection and preservation of American basketry. Besides the æsthetic elements involved and the pride of saving the best examples of a rapidly vanishing industry, there is a vast deal of culture study which ought not to be neglected.

In every collection, public or private, there are opportunities for special investigation that should not be in the possession of only a single individual. If all who are gathering baskets would preserve such information as they are able to obtain, the bringing together of the results of all this study would be a monument to our American aborigines. The perfect understanding of a basket involves a knowledge of the following subjects:

I. Materials.—Natural and prepared.

1. List of plants, animals, minerals, etc.
2. Indian name, giving the tribe.
3. Common name.
4. Scientific name.

The following label of a specimen in the Hudson basketry collection will serve as a model to guide the collector in saving information about his specimens.

BASKET JAR of the Cĕĕko Indians (Kulanapan stock). Made from the prepared root of Kahum, or California sedge (*Carex mendocinensis*), throat and scalp feathers of Katátch, or woodpecker (*Melanerpes formicivorus*), breast feathers of Jucil, or meadow lark (*Sturnella neglecta*), scalp feathers of Kayán, or mallard (*Anas borchas*), plumes of Tchikáka, or crested quail (*Lophortyx californicus*), neck feathers of Tsawálu, or jay (*Cyanura stelleri*), and Káya, or prepared clam shell (*Saxidomus gracilis*), in a style of coiled sewing called Tsai, in which a single rod constitutes the warp. The sewing passes over this rod, under the preceding one, and locks in the stitch immediately underneath. Ornamentation, a row of shell disks around the margin and another row serving as a handle.

Diameter, 5 inches.

RUSSIAN RIVER, CALIFORNIA, 1896. 203,415.

FROM THE BUREAU OF AMERICAN ETHNOLOGY, COLLECTED BY DR. J. W. HUDSON.

II. Basket making.—Under this head are included all the activities involved in construction, namely:

1. *Harvesting the materials.*—This embraces descriptions of places, the times and methods involved, as well as the tools and apparatus used in gathering.

2. *Preparing materials.*—Frequently the raw materials are stored away until required. When the time comes for their use special manipulations are necessary, such as peeling, splitting, making splints, yarning or twisting, twining, braiding, soaking, gauging, coloring. These should be noted carefully and described.

3. *Processes of manufacture.*—The materials being ready, the maker seats herself in the midst and begins the technic operations that should be minutely watched, and photographed, if possible. Collections should be made also of tools, apparatus, and patterns. The processes of basket weaving are making braid, checker, wicker, twilled, wrapped, twined, and coiled work, in checks, decussations, meshes, stitches, overlaying, etc.

III. Ornamentation.—This may be either in material, processes of making, or in added substances.

1. *Form.*—Especial attention should be paid to the aboriginal shapes, since they express the Indian mind, and everything possible should be done to discourage modern innovations.

2. *Color.*—This may be either natural or artificial. Since the introduction of modern dyes, the old methods of coloring are being abandoned. The raw material of basketry and the processes of adding color both demand attention.

3. *Designs.*—This refers to all figures on the surface, whether in color, in technic, or however produced. In fact, basketry is mosaic; the elements are always geometric figures, those of the coiled type are vertical, while those of other types are horizontal.

IV. Symbolism and patterns.—Students of basketry have shown that almost every design serves as a key to Indian lore. The story, if such exist, can not be made up from the elements as in hieroglyphics, but must be taken down from the lips of the basket maker. How important it is, therefore, that those collectors who are in touch with basket makers should secure from them the precious information.

V. Uses.—Baskets are used in food, dress, house, furniture, arts, and industries, as expressions of æsthetic culture, in social customs, and religion. From the cradle to the grave they are present. Only the observer on the spot can be trusted to gather such information fully.

VI. Ethnic varieties and culture provinces, ancient and modern.—It will be of great value to the student of technology to give the names of the tribes making basketry and to associate with each example the name and locality of its maker's tribe. Also a list of the varieties of basketry made by any tribe is of the utmost importance in arriving at a correct opinion concerning the simple or composite

character of that tribe. The Pomo, the Twana, and the Hopi, make each half a dozen styles of baskets.

VII. Collections.—Those collections that have been made with a view to permanence should be kept so that they will suffer least from damage. The dust may be blown from the specimens with bellows. Those containing remnants of vegetable matter, berries, food, and so forth, should be carefully scrubbed with soap and water, and rubbed down with a very small portion of oil and dryer. Above all they should be poisoned with a weak solution of corrosive sublimate or arsenic dissolved in alcohol. A card catalogue giving the legend and history of each piece would add much to the value of the collection.

VIII. Bibliography.—Every contribution to the literature of the subject should be sent to the Division of Ethnology in the United States National Museum for safe-keeping and ready reference.

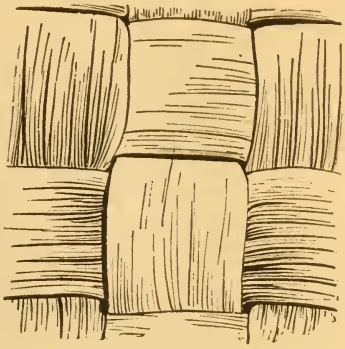

Fig. 1.
COARSE CHECKERWORK.
Report U.S.N.M., 1884, pl. 57, fig. 95.

PROCESSES OF MANUFACTURE.

The various processes of manufacture will now be explained more definitely, and also illustrated.

A. *Checkerwork.*—This occurs especially in the bottoms of many North Pacific coast examples, and also in the work of eastern Canadian tribes (fig. 1); in matting its use is well-nigh universal.

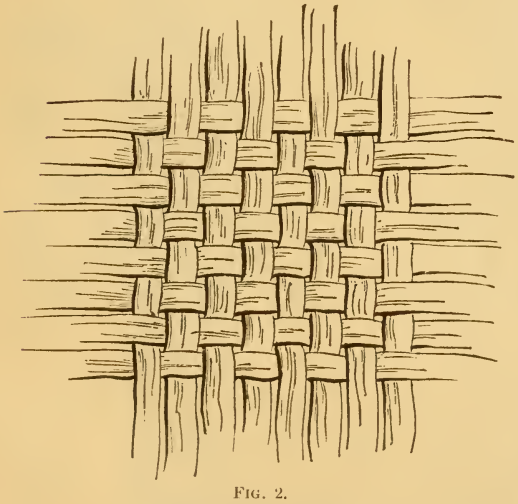

Fig. 2.
FINE CHECKERWORK.
Report U.S.N.M., 1884, pl. 57, fig. 95.

In this ware the warp and the weft have the same thickness and pliability. It is impossible, therefore, in looking at the bottoms of the cedar-bark baskets and the matting of British Columbia (fig. 2), or Eastern Canada, to tell which is warp and which is weft. In very many examples the warp and weft of a checker bottom are turned up at right angles to form the warp of the sides, which may be wicker or twined work. A great deal of bark matting is made in this same checkerwork,

but the patterns run obliquely to the axis of the fabric, giving the appearance of diagonal weaving. When warp and weft are fine yarn or threads, the result is the simplest form of cloth in cotton, linen, piña fiber, or wool. The cheap fabrics of commerce are of this species of weaving. In art, latticework frequently shows the bars intertwined as in checker basketry (fig. 3).

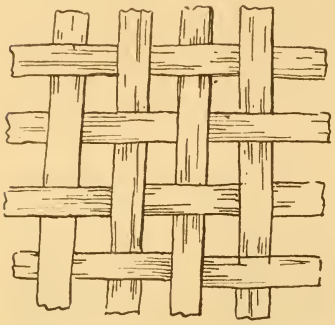

FIG. 3.
OPEN CHECKERWORK.
6th An. Rept. Bur. of Ethnol., fig. 291, after W. H. Holmes.

B. *Diagonal or twilled basketry.*—This is seen in those parts of the world where cane abounds. In America it is common in British Columbia, Washington, Southern United States, Mexico, and Central America, and of excellent workmanship in Peru, Guiana, and Ecuador. The fundamental technic of diagonal basketry is in passing each element of the weft over two or more warp elements, thus producing either diagonal or twilled, or, in the best samples, an endless variety of diaper patterns (figs. 4 and 5). See Sixth Annual Report of the Bureau of Ethnology, p. 216, figs. 316–318, for excellent examples of this.

The North Americans of antiquity were very skillful in administering the twilled technic. From examples reproduced by W. H. Holmes it will be seen that in the ancient

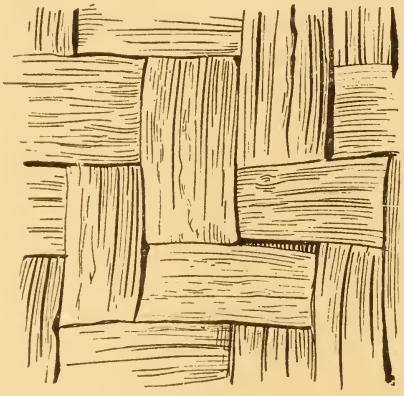

FIG. 4.
DIAGONAL OR TWILLED WORK.
Report U.S.N.M., 1884, pl. 15, fig. 28.

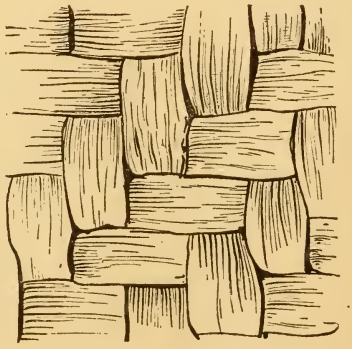

FIG. 5.
DIAGONAL OR TWILLED WORK.
Report U.S.N.M., 1884, pl. 57, fig. 93.

weaving of the Mississippi Valley, in its southern portions, the weft would not pass over the same number of warp elements that it passed under. On the specimens shown the weft goes over one and under three, or the opposite, each time and each way (figs. 6 and 7). Wonderful effects in this variation of the numbers of elements included are to be seen on Fijian basketry (fig. 8).

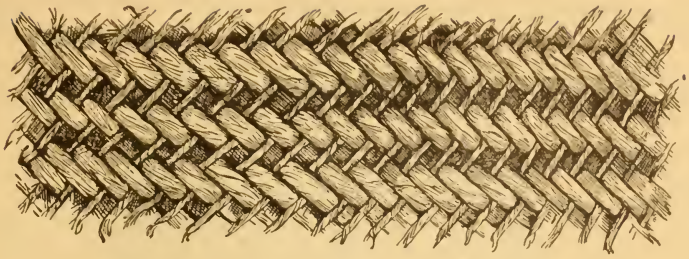

FIG. 6.

DIAGONAL OR TWILLED WORK.

Pressed on ancient pottery of Tennessee. 3d An. Rept. Bur. of Ethnol., fig. 98. After W. H. Holmes.

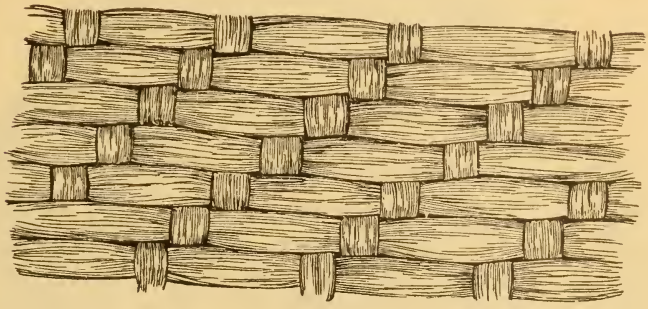

FIG. 7.

DIAGONAL OR TWILLED WORK.

Pressed on ancient pottery of Alabama 3d An. Rept. Bur. of Ethnol., fig. 99. After W. H. Holmes.

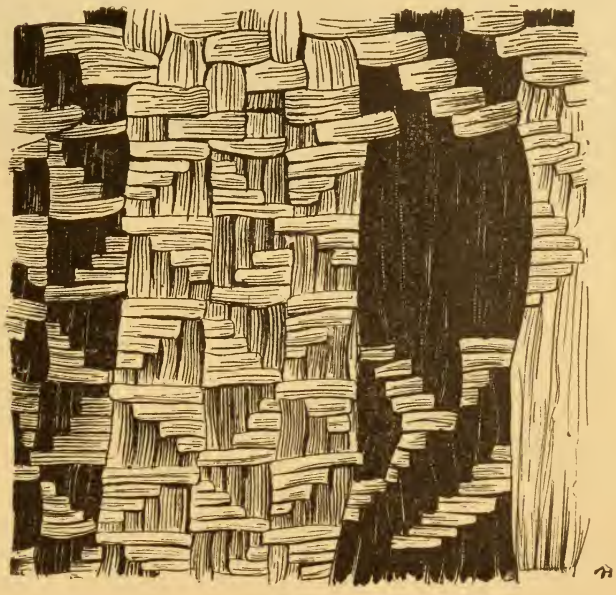

FIG. 8.

DIAGONAL WORK OF FIJI.

Report U.S.N.M., 1884, plate 55, fig. 91.

Excellent variety is produced in this kind of weaving by means of color. Almost any textile plant, when split, has two colors, that of the outer or bark surface and that of the interior woody surface or pith. Also the different plants used in diagonal basketry have great variety of color. By the skillful manipulation of the two sides of a splint, by using plants of different species, or with dyed elements, geometric patterns, frets, labyrinths, and other designs in straight line are possible (fig. 9). Examples from the saltpeter caves and modern pieces from the Cherokee, both in matting and basketry, are

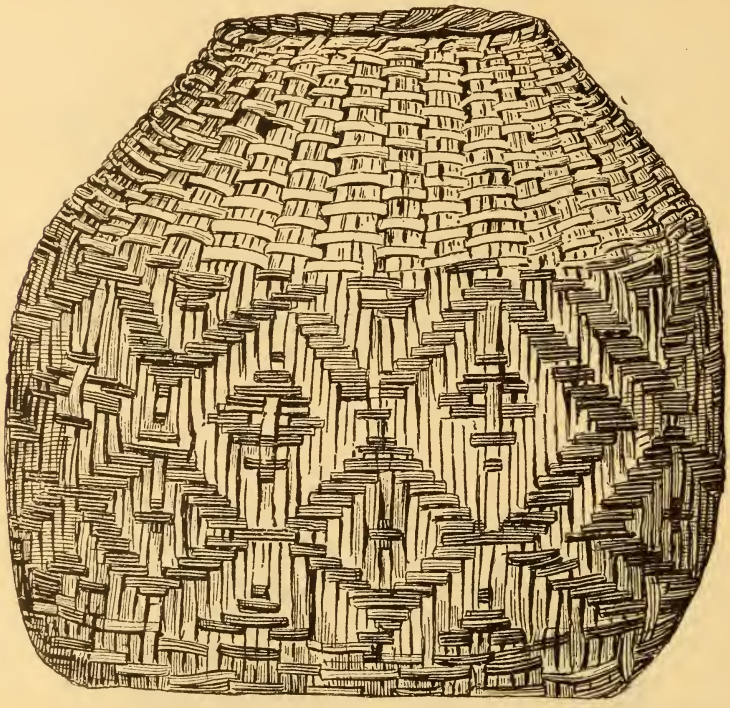

FIG. 9.
DIAGONAL WEAVING OF THE CHEROKEE.
Rept. U.S.N.M., 1884, pl. 53, fig. 89.

double. By this means both the inside and the outside of the texture expose the glossy siliceous surface of the cane.

C. *Wickerwork.*—Common in eastern Canada, it is little known on the Pacific coast and in the Interior Basin, excepting in one or two pueblos, but is seen abundantly in southern Mexico and Central America. It consists of a wide or a thick and inflexible warp, and a slender flexible weft (fig. 10).

The weaving is plain and differs from checkerwork only in the fact that one of the elements is rigid. The effect on the surface is a series

of ridges. It is possible also to produce diagonal effects in this type of weaving.

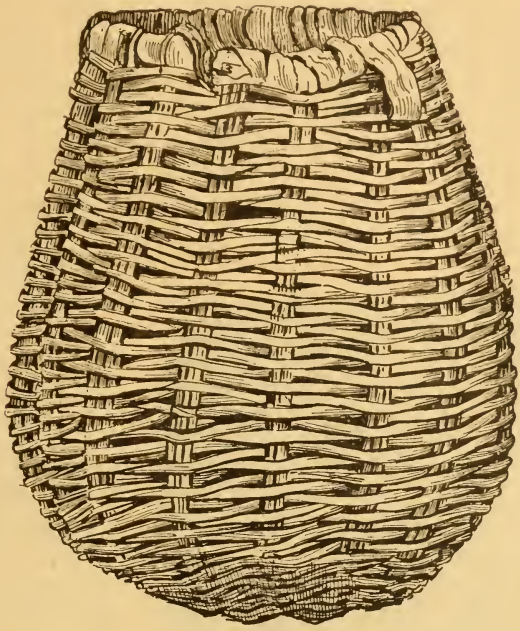

FIG. 10.
WICKER BASKET OF THE ZUÑI.
Rept. U.S.N.M., 1884, pl. 48, fig. 80.

Wickerwork must have been a very early and primitive form of textile. Weirs for stopping fish are made of brush, and wattled fences for game drives are set up in the same manner. A great deal of the coarse basketry in use for packing and transporting is made in this fashion. The Zuñi Indians make gathering baskets of little twigs after the same technic, the inflexible warp being made up of a small bundle of twigs of the same plant. The transition from checker to wicker in some examples is easy. The moment one element, either warp or weft, is a little more rigid than the other, the intersections would naturally assume a wicker form.

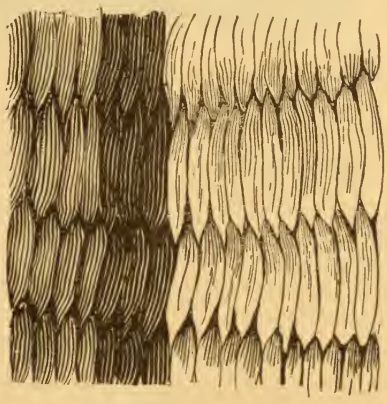

FIG. 11.
CLOSE WICKER WORK OF THE HOPI.
Rept. U.S.N.M., 1884, pl. 42, fig. 74.

The finest specimens in America are the very pretty Hopi plaques made of *Bigelovia graveolens*. Short stems are dyed in various colors, worked into the warp, and driven tightly home so as to hide the ends and also the manner of weaving (fig. 11).

Various patterns are effected on the surface—clouds, mythical birds, and symbols connected with worship. Wickerwork has pleasing effects combined with diagonal and other work (fig. 12). It has passed into modern industry through the cultivation of osiers, rattan, and such plants, for market baskets, covers for glass bottles, and in ribbed cloth, wherein a flexible weft is worked on a rigid warp. Also, good examples are now produced by the Algonkin tribes of New England and eastern Canada.

For commercial purposes, wicker baskets precisely like those of the Abenaki Indians are thus made.

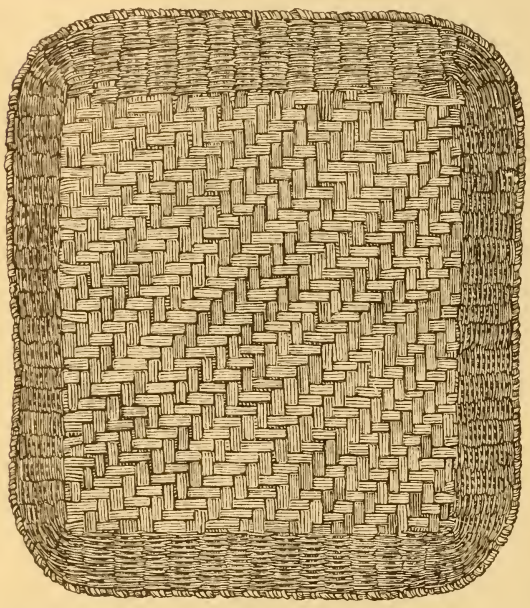

FIG. 12.

MAT OF THE HOPI IN DIAGONAL AND WICKER.

6th An. Rept. Bur. of Ethnol., fig. 286, after W. H. Holmes.

The white-oak timber is brought to the yard in sticks running from 6 to 40 inches in diameter, and from 4 to 18 feet long. It is first sawed into convenient lengths, then split with a maul and wedges into fourths or sixteenths. The bark is then stripped off with a drawing knife.

The next process is cutting it into bolts at what is called the splitting horse. These are taken to the so-called shaving horse, to be shaved down with a drawing knife into perfectly smooth, even bolts, of the width and length desired. These are then placed in the steam box and steamed for a half hour or so, which makes the splints more pliable; they are taken thence to the splint knife, which is arranged so that one person, by changing the position of the knife, can make splints of any desired thickness from that of paper to that of a three-fourth inch hoop.

The oyster baskets and most small baskets have the bottom splints laid one over another, and are plainly woven.

But the round-bottomed baskets, used for grain and truck, are made by taking from 10 to 18 ribs and laying them across each other at the middle in radiating form, and weaving around with a narrow thin splint, until the desired size for the bottom is reached, when the

splints are turned up and set in other baskets, about a dozen in a series, for twenty-four hours.

They are then woven around with a fine splint and placed on a revolving drum or form and filled up the required height and set in the sun to dry for six hours. They are then shaken hard by striking the bottom on the floor, which causes the splints to settle tight together, and prepared for the rim. They next proceed to fasten the handles to the sides and put the rims or hoops on by fitting them into the notches made in the handles and binding them tightly with fine splints. The different styles are made by using different shaped drums and variously colored splints, the latter being done by dipping the splints, before weaving, into dyes.

The more curiously made baskets are those for the charcoal and eelpots.

The charcoal baskets are shaped like a tray and are carried on the head by the coal carriers.

The eelpots are used as traps for catching eels. The wood is prepared for them in the same manner, and they are made on a form about 40 inches long and in the shape of a bottle minus the bottom, and have a funnel arrangement at either end which is detachable.

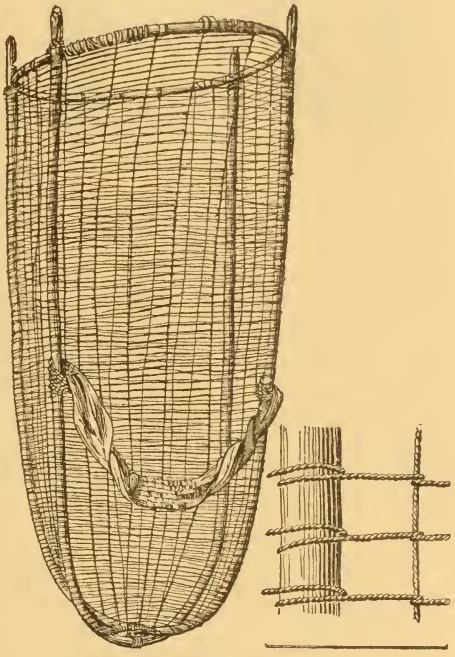

FIG. 13.

CARRYING-BASKET, WRAPPED WEAVING, USED BY THE MOHAVE INDIANS OF ARIZONA.

Cat. No. 24145, U.S.N.M. Collected by Edward Palmer.

D. *Wrapped weft.*—Wrapped basketry consists of warp and weft. Examples of this technic are to be seen in America at the present time among the Indians of southern Arizona, the Mohaves, for their carrying frames (fig. 13). The warp extends from the rigid hoop, which forms the top, to the bottom where the elements are made fast. The weft, usually of twine, is attached to one of the corner or frame pieces at the bottom and is wrapped once around each warp element. This process continues in a coil until the top of the basket is reached. In some of its features this method resembles coil work, but as a regular warp is employed and no needle is used in the coiling, it belongs more to the woven series. This method of weaving was employed by the mound builders of the Mississippi Valley.

Markings of wrapped weaving on pottery are to be seen in the Third Report of the Bureau of Ethnology (fig. 14). This style of weaving had not a wide distribution in America, and is used at the present day only in a restricted region. When the warp and the weft are of the same twine or material and the decussations are drawn tight the joint resembles the first half of a square knot. The Mincopies of the Andaman Islands construct a carrying basket in the same technic.

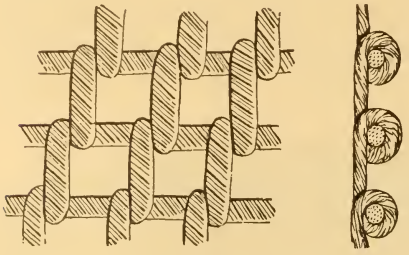

FIG. 14.

WRAPPED WEAVING.

Pressed on ancient pottery, from a mound in Ohio. 3d An. Rept. Bur. of Ethnol., fig. 70. After W. H. Holmes.

E. *Twined or wattled basketry.*—This is found in ancient mounds of Mississippi Valley, in bagging of the Rocky Mountains, down the Pacific coast from the island of Attu, the most westerly of the Aleutian chain, to the borders of Chile, and here and there in the Atlantic slope of South America. It is the most elegant and intricate of all in the woven or plicated species. Twined work has a set of warp rods or rigid elements, as in wickerwork; but the weft elements are commonly administered in pairs, though in three-ply twining and in braid twining three weft elements are employed. In passing from warp to warp these elements are twisted in half-turns on each other so as to form a two-ply or three-ply twine or braid. According to the relation of these weft elements to one another and to the warp, different structures result as follows:

1. *Plain twined weaving, over single warps.*
2. *Diagonal twined weaving or twill, over two or more warps.*
3. *Wrapped twined weaving, or bird-cage twine, in which one weft element remains rigid and the other is wrapped about the crossings.*
4. *Latticed twined weaving, tee or Hudson stitch, twined work around vertical warps crossed by horizontal weft element.*
5. *Three-ply twined weaving and braiding in several styles.*

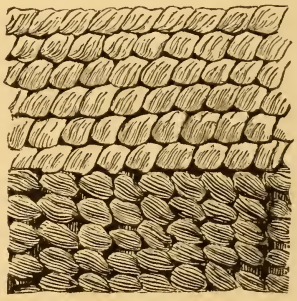

FIG. 15.

TWINED WEAVING IN TWO COLORS.

Rept. U. S. N. M., 1884, pl. 20, fig. 39.

1. *Plain twined weaving.*—Plain twined weaving is a refined sort of wattling or crating. The ancient engineers, who built obstructions in streams to aid in catching or impounding fish, drove a row of sticks into the bottom of the stream, a few inches apart. Vines and brush were woven upon these upright sticks which served for a warp. In passing each stake the two vines or pieces of brush made a half-turn

on each other. This is a very primitive mode of weaving. Plain twined basketry is made on exactly the same plan; there is a set of warp elements which may be reeds, or splints, or string, arranged radially on the bottom and parallel on the body. The weft consists of two strips of root or other flexible material, and these are twisted as in forming a two-ply string passing over a warp stem at each half turn (fig. 15). Pleasing varieties of this plain twined weaving will be found in the Aleutian Islands. The Aleuts frequently use, for their warp, stems of wild rye or other grasses, in which the straws are split and the two halves pass upward in zigzag form; each half of a warp is caught alternately with the other half of the same straw and with a half of the adjoining straw, making a series of triangular instead of rectangular spaces (fig. 16). A still further variation is given to plain twined ware by crossing the warps.

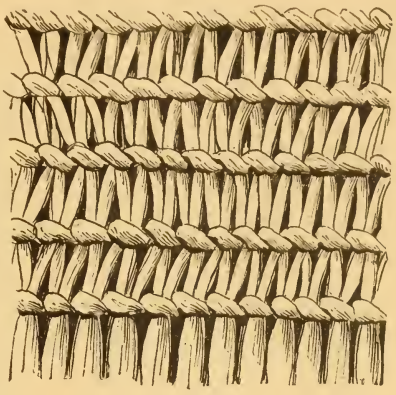

FIG. 16.

TWINED OPENWORK OF THE ALEUTS.

Rept. U.S.N.M., 1884, pl. 1, fig. 2.

In bamboo basketry of eastern Asia these crossed warps are also interlaced or held together by a horizontal strip of bamboo passing in and out as in ordinary weaving. In such examples the interstices are triangular, but in the twined example here described (fig. 17) the weaving passes across between the points where the warps intersect each other, leaving hexagonal interstices. This peculiar combination of plain twined weft and crossed warp has not a wide distribution in America, but examples are to be seen in southeastern Alaska and among relics found in Peruvian graves.

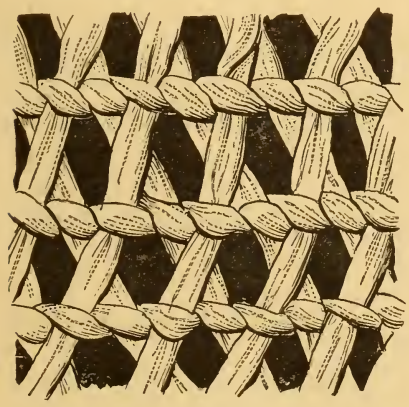

FIG. 17.

CROSSED WARP TWINED WEAVING OF THE MAKAH INDIANS, WASHINGTON STATE.

Rept. U.S.N.M., 1884, pl. 16, fig. 31.

2. *Diagonal twined weaving.*—In diagonal twined weaving the twisting of the weft filaments is precisely the same as in plain twined weaving. The difference of the texture on the outside is caused by the manner in which the wefts cross the warps. This style abounds among the Ute Indians and the Apache, who dip the bottles made in this fashion into pitch and thus make a

water-tight vessel, the open meshes receiving the pitch more freely. The technic of the diagonal twined weaving consists in passing over two or more warp elements at each half turn; there must be an odd number of warps, for in the next round the same pairs of warps are not included in the half turns. The ridges on the outside, therefore, are not vertical as in plain twined weaving, but pass diagonally over the surface, hence the name (fig. 18).

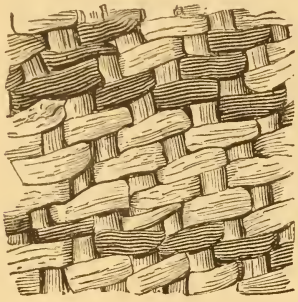

FIG. 18.
DIAGONAL TWINED WEAVING OF THE UTE INDIANS, UTAH.
Rept. U.S.N.M., 1884, pl. 21, fig. 41.

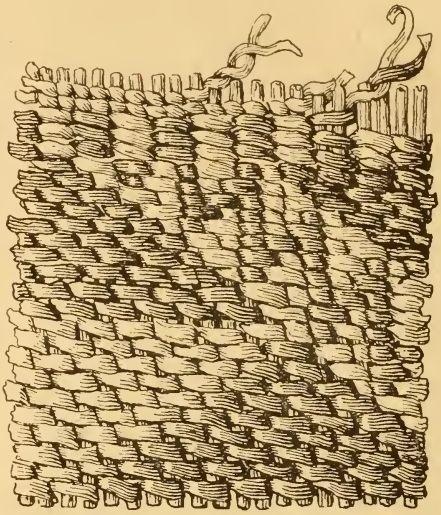

FIG. 19.
VARIETY OF TWINED WORK, OUTSIDE.
Am. Anthropologist, new. ser. 3, 1901, fig. 18.

This method of manipulation lends itself to the most beautiful and delicate twined work of the Pomo Indians. Gift baskets holding more than a bushel and requiring months of patient labor to construct are thus woven.

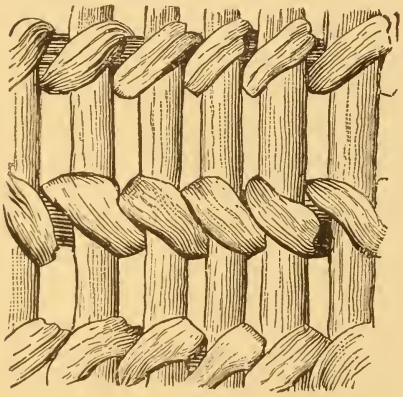

FIG. 20.
WRAPPED TWINED WEAVING.
Rept. U.S.N.M., 1884, pl. 13, fig. 23.

Fig. 19 shows how, by varying the color of the weft splints and changing from diagonal to plain weaving, the artist is enabled to control absolutely the figure on the surface.

3. *Wrapped twined weaving.*—In wrapped twined weaving one element of the twine passes along horizontally across the warp stems, usually on the inside of the basket. The binding element of splint, or strip of bark, or string, is wrapped around the crossings of the horizontal element with the vertical warp (fig. 20). On the outside of the basket the turns of the wrapping are oblique; on the inside they are vertical. It will be seen on examining

this figure that one row inclines to the right, the one above it to the left, and so on alternately. This was occasioned by the weaver's passing from side to side of the square carrying basket, and not all the way round as usual. The work is similar to that in an old-fashioned bird cage where the upright and horizontal wires are held in place by a wrapping of finer soft wire. The typical example of this wrapped or bird-cage twine is to be seen among the Indians of the Wakashan family living about Neah Bay, Vancouver Island, and southwestern British Columbia (fig. 21).

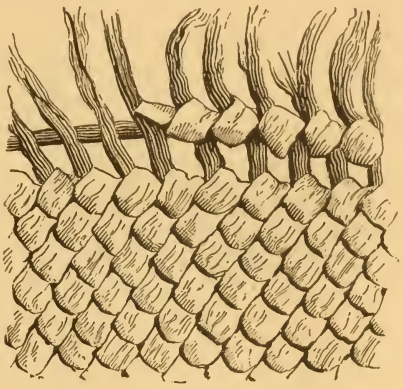

FIG. 21.

WRAPPED TWINED WEAVING.

Rept. U.S.N.M., 1884, pl. 14, fig. 25.

In this type the warp and the horizontal strip behind the warp are both in soft cedar bark. The wrapping is done with a tough straw-colored grass. When the weaving is beaten home tight the surface is not unlike that of a fine tiled roof, the stitches overlying each other with perfect regularity.

Fig. 22 shows a square inch of the inside of a basket, with plain twined weaving in the two rows at the top; plain twined weaving in which each turn passes over two warp rods in four rows just below. In the middle of the figure, at the right side, it will be seen how the wrapped or bird-cage twined work appears on the inside, and in the lower right-hand corner is the inside view of diagonal twined weaving. In the exquisite piece from which this drawing was made, the skillful woman has combined four styles of two-ply twined weaving. On the outside of the basket these various methods stand for delicate patterns in color (fig. 19).

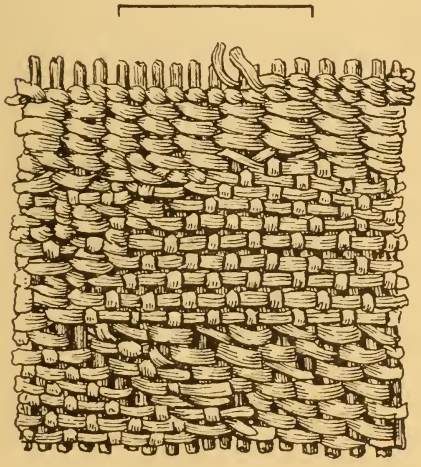

FIG. 22.

TWINED WEAVING, INSIDE.

Am. Anthropologist, new ser. 3, 1901, fig. 21.

4. *Lattice-twined weaving.*—The lattice-twined weaving, so far as the collections of the U. S. National Museum show, is confined to the Pomo Indians, of the Kulanapan family, residing on Russian River, California. Dr. J. W. Hudson calls this technic *tee*. This is a short and convenient word, and may be used for a specific name. The *tee* twined weaving consists of four elements—(*a*) the upright warp

of rods, (*b*) a horizontal warp crossing these at right angles, and (*c*, *d*) a regular plain twined weaving of two elements, holding the warps firmly together (fig. 23).

In all the examples in the U. S. National Museum the horizontal or extra warp is on the exterior of the basket. On the outside the *tee* basket does not resemble the ordinary twined work, but on the inside it is indistinguishable. Baskets made in this fashion are very rigid and strong, and frequently the hoppers of mills for grinding acorns, and also watertight jars, are thus constructed. The ornamentation is confined to narrow bands, the weaver being greatly restricted by the technic.

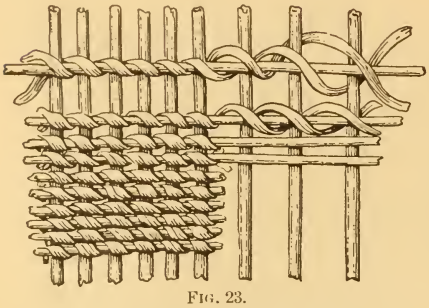

FIG. 23.

TEE LATTICE OR TWINED WEAVING
Of the Pomo Indians, California.
Am. Anthropologist, new ser. 3, 1901, fig. 22.

5. *Three-ply twined weaving.*—Three-ply twined weaving is the use of three weft splints and other kinds of weft elements instead of two, and there are four ways of administering the weft:

a. *Three-ply twine.*
b. *Three-ply braid.*
c. *Three-ply, false embroidery, Tlinkit.*
d. *Frapped, Skokomish.*

(*a*) *Three-ply twine* (figs. 24 and 25).—In this technic the basket-

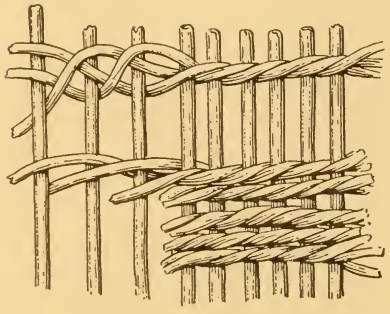

FIG. 24.

THREE-PLY BRAID AND TWINED WORK, OUTSIDE.
Am. Anthropologist, new ser. 3, 1901, fig. 23.

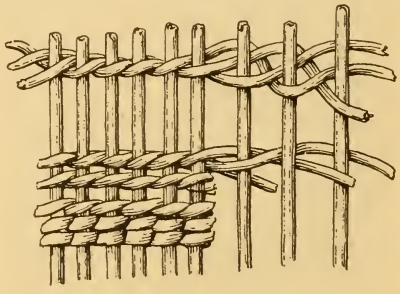

FIG. 25.

THREE-PLY BRAID AND TWINED WORK, INSIDE.
Am. Anthropologist, new ser. 3, 1901, fig. 24.

weaver holds in her hand three weft elements of any of the kinds mentioned. In twisting these three, each one of the strands, as it passes inward, is carried behind the warp stem adjoining; so that in a whole revolution the three weft elements have in turn passed behind three warp elements. After that the process is repeated. By referring to the lower halves of figs. 24 and 25, the outside and the inside of this technic will be made plain.

On the outside there is the appearance of a two-ply string laid along the warp stems, while on the inside the texture looks like plain twined weaving. The reason for this is apparent, since in every third of a revolution one element passes behind the warp and two remain in front.

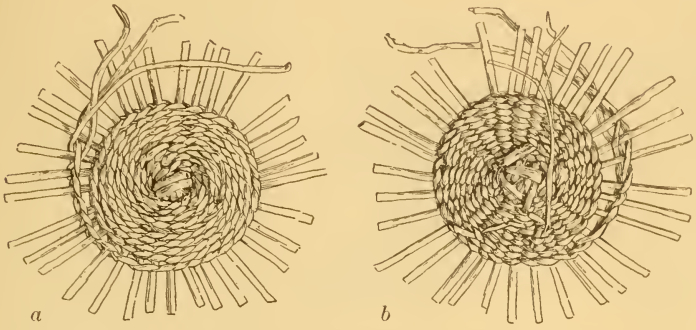

FIG. 26.
THREE-PLY BRAID; *a*, OUTSIDE; *b*, INSIDE.

(b) *Three-ply braid.*—In three-ply braid the weft elements are held in the hand in the same fashion, but instead of being twined simply they are plaited or braided, and as each element passes under one and over the other of the remaining two elements, it is carried inside a warp stem. This process is better understood by examining the upper parts of figs. 24 and 25, and 26 *a* and *b*. On the surface when the work is driven home, it is impossible to discriminate between three-ply twine and three-ply braid. The three-ply braid is found at the starting of all Pomo twined baskets, no matter how the rest is built up.

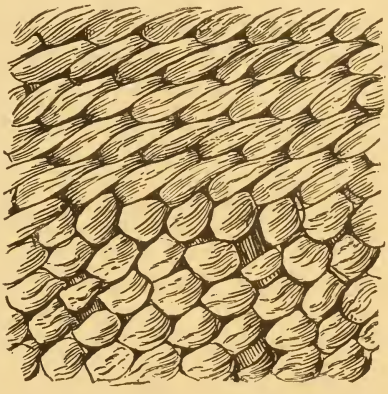

FIG. 27.
THREE-PLY AND PLAIN TWINED WORK.
Report U.S.N.M., 1884, pl. 38, fig. 67

Fig. 27 shows a square inch from the surface of a Hopi twined jar. The lower part is in plain twined weaving; the upper part is in three-ply twine. Philologists have come to the conclusion that the Hopi are very mixed people. The three-ply work shown in this figure is a Ute motive. The U. S. National Museum collections represent at least seven different styles of basketry technic practiced among the Hopi people of Tusayan.

(c) *Three-ply, false embroidery.*—In Tlinkit basketry the body is worked in spruce root, which is exceedingly tough. The ornamentation in which mythological symbols are concealed consists of a species

of false embroidery in which the figures appear on the outside of the basket but not on the inside. In the needlework of the civilized woman the laying of this third element would be called embroidery, but the Indian woman twines it into the textile while the process of basket making is going on; that is, when each of the weft elements passes between two warp rods outward, the colored or overlaid element is wrapped around it once. Straws of different colors are employed (fig. 28).

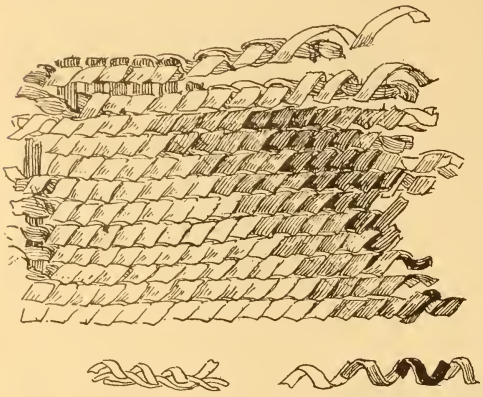

FIG. 28.
OVERLAID TWINED WEAVING.
6th An. Rept., Bur. Ethnol., p. 230, fig. 336, after W. H. Holmes.

(d) *Frapped basketry*, Skokomish type.—An interesting modification of this Tlinkit form of overlaying or false embroidery occurs occasionally among the Pomo Indians under the name of *bog* or *bag*, and it is fully explained and illustrated by James Teit in his Memoir on the Thompson River Indians.[1] In this Thompson River example the twine or weft element is three-ply. Two of them are spun from native hemp or milkweed, and form the regular twined two-ply weaving. Around this twine the third element is wrapped or served, passing about the other two and between the warp elements, and then the whole is pressed down close to the former rows of weaving. On the outside of this bag the wrapping is diagonal, but on the inside the turns are perpendicular. The fastening off is coarsely done, leaving the surface extremely rough. I am indebted to Dr. Franz Boas for the use of Mr. Teit's figure. This combination is extremely interesting. The author says that it "seems to have been acquired recently through intercourse with the Shahaptins." A little attention to the stitches will show that the bags and the motives on them are clearly Nez Perces or Shahaptian, but the wrapping of corn husk outside the twine are not done in Nez Perces fashion, but after the style of the Makah Indians of Cape Flattery, who are Wakashan (fig. 29).

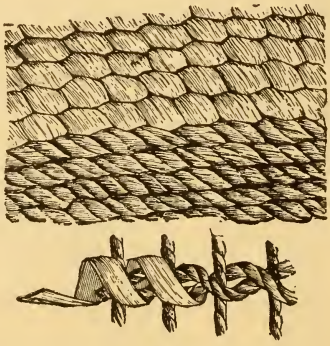

FIG. 29.
FRAPPED TWINED WORK.
Thompson River Indians, British Columbia, after James Teit.

[1] Memoirs of the American Museum of Natural History, II, New York, 1900, fig. 132, p. 190.

II. COILED BASKETRY.

Coiled basketry is produced by an over-and-over sewing with some kind of flexible material, each stitch interlocking with the one immediately underneath it. The exception to this is to be seen on Eskimo and Digger baskets, in which the passing stitch is driven through the wood of the stitch underneath and splits it. The transition between lace work and coiled basketry is interesting. In the netted bags of pita fiber, common throughout middle America, in the muskemoots or Indian bags of fine caribou skin thong from the Mackenzie River district, as well as in the lace-like netting of the Mohave carrying frames and Peruvian textiles, the sewing and interlocking constitute the whole texture (fig. 31, A), the woman doing her work over a short cylinder or spreader of wood or bone, which she moves along as she works.[1] When the plain sewing changes to half-hitches—or stitches in which the moving part of the filament or twine is wrapped or served one or more times about itself—there is the rude beginning of point lace work. This is seen in Fuegian basketry as well as in many pieces from various parts of the Old World (fig. 41).

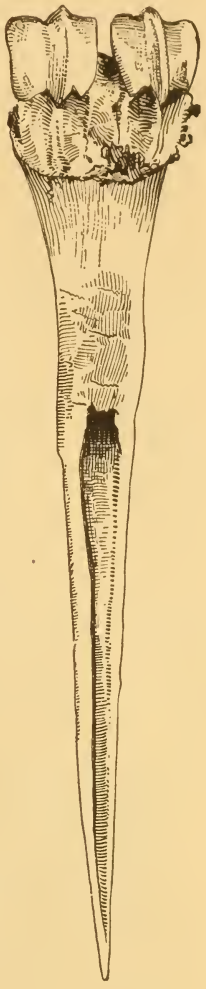

FIG. 30.

BONE AWL FOR COILED BASKETRY.

Report U.S.N.M., 1884, pl. 64, fig. 108. Collected by Edward Palmer.

The sewing materials vary with the region. In the Aleutian Islands it is of delicate straw; in the adjacent region it is spruce root; in British Columbia it is cedar or spruce root; in the more diversified styles of the Pacific States every available material has been used—stripped leaf, grass stems, rushes, split root, broad fillets, and twine, the effect of each being well marked. In all coiled basketry, properly so called, there is a foundation more or less rigid, inclosed within stitches, the only implement used being originally a bone awl.

Fig. 30 shows the metatarsal of an antelope, sharpened in the middle and harder portion of the column, the joint serving for a grip to the hand. Mr. F. H. Cushing was of the opinion that the bone awl was far better for fine basket work than any implement of steel; the point, being a little rounded, would find its way between the stitches of the coil underneath and not force itself through them. The iron awl, being hard and sharp, breaks the

[1] See Scientific American, July 28, 1900, and American Anthropologist (new ser.), April, 1900.

texture and gives a very rough and clumsy appearance to the surface, as will be seen in fig. 37. In every culture province of America wherever graves have been opened the bone stiletto has been recovered, showing the widespread use of threads or filaments employed in joining two fabrics, or for perforating those already made to receive coil work and other embroideries.

Coiled basketry in point of size presents the greatest extremes. There are specimens delicately made that will pass through a lady's finger ring, and others as large as a flour barrel; some specimens have stitching material one-half inch wide, as in the Pima granaries, and in others the root material is shredded so fine that nearly 100 stitches are made within an inch of space. In form, the coiled ware may be perfectly flat, as in a table mat, or built up into the most exquisite jar shape, in design the upright stitches lend themselves to the greatest variety of intricate patterns.

VARIETIES OF COILED BASKETRY.

Coiled basketry may be divided into nine varieties, based on structural characteristics. The foundation may be (1) a single stem or rod; (2) a stem with a thin welt laid on top of it; (3) two or more stems over one another; (4) two stems laid side by side, with a welt; (5) three stems in triangular position; (6) a bundle of splints or small stems; (7) a bundle of grass or small shreds.

The stitches pass around the foundation in progress (1) interlocking, but not inclosing the foundation underneath; (2) under one rod of the coil beneath, however many there may be; (3) under a welt of the coil beneath; (4) through splints or other foundation, in some cases systematically splitting the sewing material underneath. With these explanations it is possible to make the following nine varieties of coiled basketry, matting, or bagging:

A. *Coiled work without foundation.*
B. *Simple interlocking coils.*
C. *Single-rod foundation.*
D. *Double-stem coil, two-rod foundation.*
E. *Packing inclosed, rod and welt foundation.*
F. *Packing inclosed, two-rod and splint foundation.*
G. *One rod inclosed, three-rod foundation.*
H. *Splint foundation.*
I. *Grass-coil foundation.*
K. *Fuegian coiled basketry.*

These will now be taken up systematically and illustrated (fig. 31).

A. *Coiled work without foundation.*—Specimens of this class have been already mentioned. The sewing material is babiche or fine rawhide thong in the cold north, or string of some sort farther south. In the Mackenzie Basin will be found the former, and in the tropical and subtropical areas the latter. If a plain, spiral spring be coiled or hooked into one underneath, the simplest form of the open coiled work

will result. An improvement of this is effected when the moving thread in passing upward after interlocking is twined one or more times about its standing part (fig. 31 A).

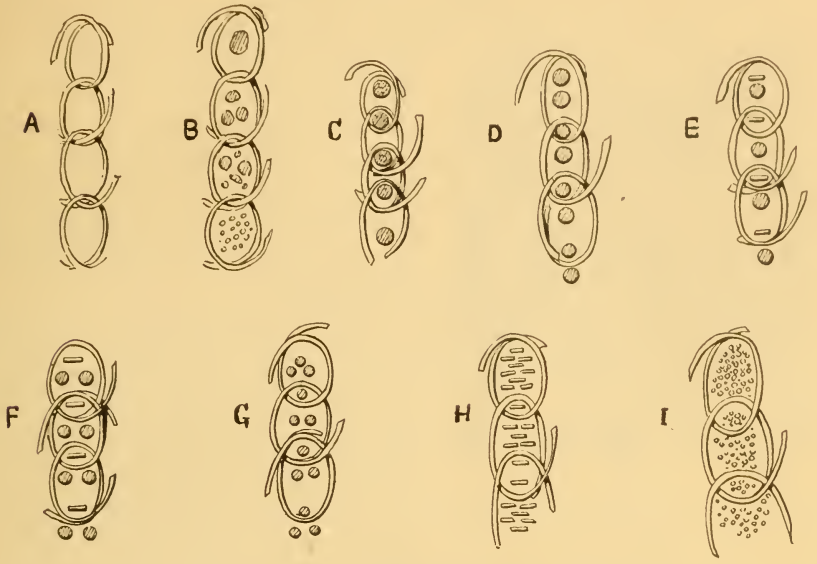

FIG. 31.
CROSS SECTIONS OF VARIETIES IN COILED BASKETRY.

B. *Simple interlocking coils.*—Coiled work in which there may be any sort of foundation, but the stitches merely interlock without catching under the rods or splints or grass beneath. This form easily passes into those in which the stitch takes one or more elements of the foundation, but in a thorough ethnological study small differences can not be overlooked (fig. 31 B). Fig. 32 represents this style of workmanship on a coiled basket in grass stems from Alaska, collected by Lucien M. Turner. The straws for sewing merely interlock without gathering the grass roll.

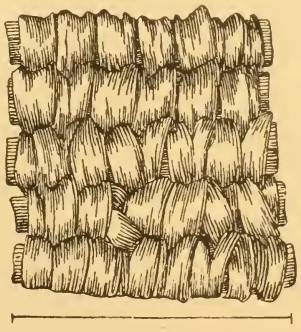

FIG. 32.
DETAIL OF INTERLOCKING STITCHES.

C. *Single-rod foundation.*—In rattan basketry and Pacific coast ware, called by Dr. J. W. Hudson *Tsai* in the Pomo language, the foundation is a single stem, uniform in diameter. The stitch passes around the stem in progress and is caught under the one of the preceding coil, as in fig. 31 C. In a collection of Siamese basketry in the U. S. National Museum the specimens are all made after this fashion; the foundation is the stem of the plant in its natural state, the sewing is with splints of the same material,

having the glistening surface outward. As this is somewhat unyielding, it is difficult to crowd the stitches together, and so the foundation is visible between.

In America single-rod basketry is widely spread. Along the Pacific coast it is found in northern Alaska and as far south as the borders of Mexico. The Pomo Indians use it in some of their finest work. The roots of plants and soft stems of willow, rhus, and the like are used for the sewing, and being soaked thoroughly can be crowded together so as to entirely conceal the foundation (fig. 33).

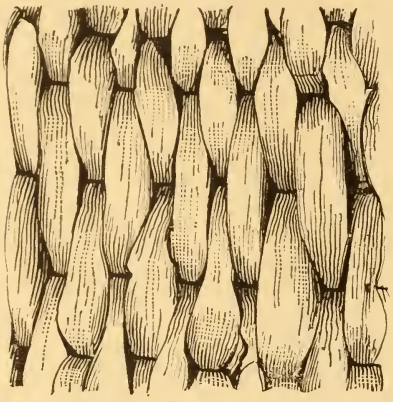

FIG. 33.

DETAIL OF SINGLE-ROD COIL IN BASKETRY.

Rept. U.S.N.M. 1884, pl. 5, fig. 8.

D. *Two-rod foundation.*—One rod in this style lies on top of the other; the stitches pass over two rods in progress and under the upper one of the pair below, so that each stitch incloses three stems in a vertical series. A little attention to fig. 31 D will demonstrate that the alternate rod or the upper rod in each pair will be inclosed in two series of stitches, while the other or lower rod will pass along freely in the middle of one series of stitches and show on the outer side. Examples of this two-rod foundation are to be seen among the Athapascan tribes of Alaska, among the Pomo Indians of the Pacific coast, and among the Apache of Arizona. An interesting or specialized variety of this type is seen among the Mescaleros of New Mexico, who use the two-rod foundation, but instead of passing the stitch around the upper rod of the coil below, simply interlock the stitches so that neither one of the two rods is inclosed twice. This Apache ware is sewed with yucca fiber and the brown stems of other plants, producing a brilliant effect, and the result of the special technic is a flat surface like that of pottery (fig. 34). The U. S. National Museum possesses a single piece of precisely the same technic from the kindred of the Apache on the Lower Yukon.

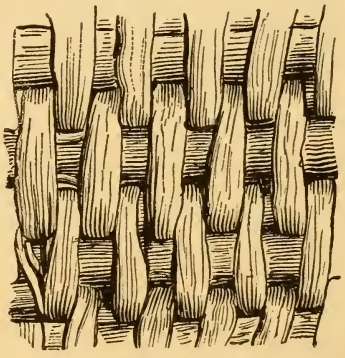

FIG. 34.

FOUNDATION OF TWO RODS, VERTICAL.

Rept. U.S.N.M. 1884, pl. 50, fig. 84.

E. *Rod and welt foundation.*—In this kind of basketry the single-rod foundation is overlaid by a strip or splint of tough fiber, some-

times the same as that with which the sewing is done; at others a strip of leaf or bast. The stitches pass over the rod and strip which are on top down under the welt only of the coil below, the stitches interlocking. The strip of tough fiber between the two rods which serves for a welt has a double purpose—strengthening the fabric and chinking the space between the rods (fig. 31 E and fig. 35). This style of coil work is seen on old Zuñi basket-jars and on California examples. The type of foundation passes easily into forms (fig. 31) C, D, and F.

FIG. 35.
ROD AND WELT COILED WORK.
Rept. U.S.N.M. 1884, pl. 49, fig. 82.

F. *Two rod and splint foundation.*—In this style the foundation is made thicker and stronger by laying two rods side by side and a splint or welt on top to make the joint perfectly tight. The surface will be corrugated. Tribes practicing this style of coiling generally have fine material and some of the best ware is so made up.

G. *Three-rod foundation.*—This is the type of foundation called by Dr. J. W. Hudson *bam-tsu-wu*. Among the Pomo and other tribes in the western part of the United States the most delicate pieces of basketry are in this style. Dr. Hudson calls them the "jewels of coiled basketry." The surfaces are beautifully corrugated, and patterns of the most elaborate character can be wrought on them. The technic is as follows: Three or four small, uniform willow stems serve for the foundation, as shown in fig. 36; also in cross section in fig. 31 G. The sewing, which may be in splints of willow, black or white carex root, or cercis stem, passes around the three stems constituting the coil, under the upper one of the bundle below, the stitches interlocking. In some examples this upper rod is replaced by a thin strip of material serving for a welt (see fig. 31 F). In the California area the materials for basketry are of the finest quality. The willow stems and carex root are susceptible of division into delicate filaments. Sewing done with these is most compact, and when the stitches are pressed closely together the foundation does not

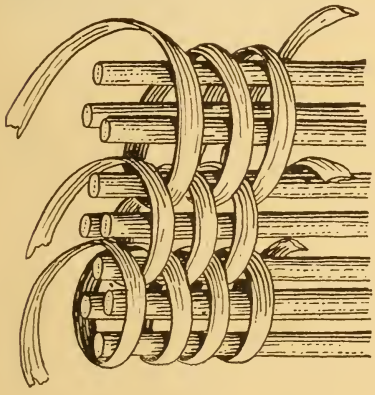

FIG. 36.
FOUNDATION OF THREE RODS.

appear. On the surface of the bam-tsu-wu basketry the Pomo weaver adds pretty bits of bird feathers and delicate pieces of shell. The basket represents the wealth of the maker, and the gift of one of these to a friend is considered to be the highest compliment.

H. *Splint foundation.*—In basketry of this type the foundation consists of a number of longer or shorter splints massed together and sewed, the stitches passing under one or more of the splints in the coil beneath (fig. 37). In the Pomo language it is called *chilo*, but it has no standing in that tribe. In the Great Interior Basin, where the pliant material of the California tribes is wanting, only the outer and younger portion of the stem will do for sewing. The interior parts in such examples are made up into the foundation (fig. 31 H). Such ware is rude when the sewing passes carelessly through the stitches

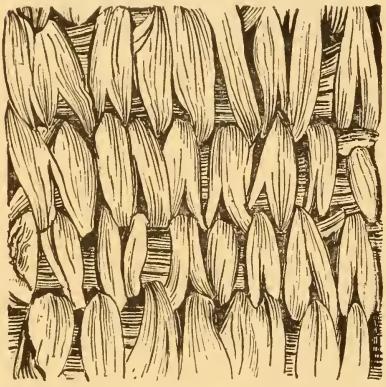

FIG. 37.

FOUNDATION OF SPLINTS.

Rept. U.S.N.M., 1884, pl. 4, fig. 6.

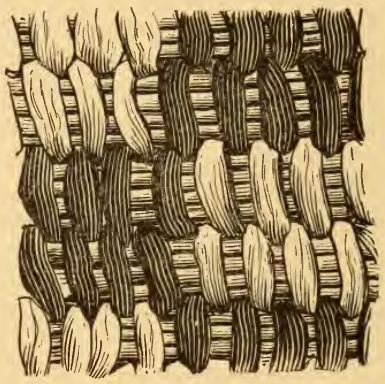

FIG. 38.

INTERLOCKING COILS, STRAW FOUNDATION.

Rept. U.S.N.M., 1884, pl. 27, fig. 51.

below; in others the splitting is designed and beautiful. In the Klikitat basketry the pieces of spruce or cedar root not used for sewing material are also worked into the foundation.[1]

I. *Grass-coil basketry.*—The foundation is a bunch of grass or rush stems, of small midribs from palm leaves, or shredded yucca. The effect in all such ware is good, for the reason that the maker has perfect control of her material. Excellent examples of this kind are to be seen in the southwestern portions of the United States, among the pueblos and missions, and in northern Africa. The sewing may be done with split stems of hard wood, willow, rhus, and the like, or, as in the case of the Mission baskets in southern California, of the stems of rushes (*Juncus acutus*), or stiff grass (*Epicampes rigidum*). (See fig. 38 and the cross section given in fig. 31 I). In the larger granary

[1] Memoirs of the American Museum of Natural History, Anthropology, I, p. 189, fig. 131 a.

baskets of the Pima a bundle of straws furnishes the foundation, while the sewing is done with broad strips of tough bark, as in fig. 39. In the Fuegian coiled basketry, of which a figure is given, the sewing is done with rushes, but instead of being in the ordinary over-and-over stitch it consists of a series of half hitches or buttonhole stitches (fig. 41).

Among the basketry belonging to the grass-coil foundation type are the Hopi plaques, built upon a thick bundle of the woody stems of the yuccas, which furnish also the sewing material from the split leaf (fig. 40). If this be examined in comparison with a style of basketry found in Egypt and in northern Africa as far as the Barbary states, great similarity will be noticed in the size of the coil, the color of the sewing material, the patterns, and the stitches. The suggestion is here made that this particular form of workmanship may be due to

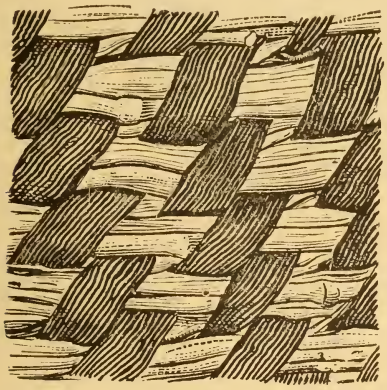

FIG. 39.
OPEN COIL INCLOSING PART OF FOUNDATION.
Rept. U.S.N.M., 1884, pl. 37, fig. 38.

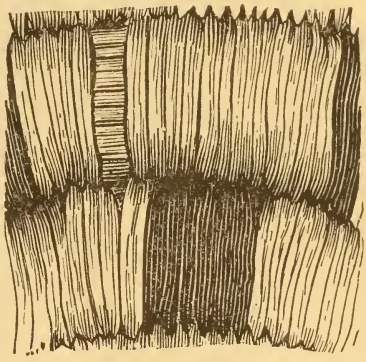

FIG. 40.
INTERLOCKING COILS, SHRED FOUNDATION.
Rept. U.S.N.M., 1884, pl. 39, fig. 69.

acculturation, inasmuch as this type of basketry is confined in America to the Hopi pueblos, which were brought very early in contact with Spaniards and African slaves.

K. *Fuegian coiled basketry.*—In this ware the foundation is slight, consisting of one or more rushes; the sewing is in buttonhole stitch or half-hitches, with rush stems interlocking. The resemblance of this to Asiatic types on the Pacific is most striking (fig. 41).

In a small area on Fraser River, in southwestern Canada, on the upper waters of the Columbia, and in many Salishan tribes of northwestern Washington, basketry called "Klikitat" is made. The foundation, as said, is in cedar or spruce root, while the sewing is done with the outer and tough portion of the root; the stitches pass over the upper bundle of splints and are locked with those underneath. On the outside of these baskets is a form of technic, which also constitutes the ornamentation. It is not something added, or overlaid, or

sewed on, but is a part of the texture effected in the progress of the manufacture (fig. 42).

The method of adding this ornamentation in strips of cherry bark,

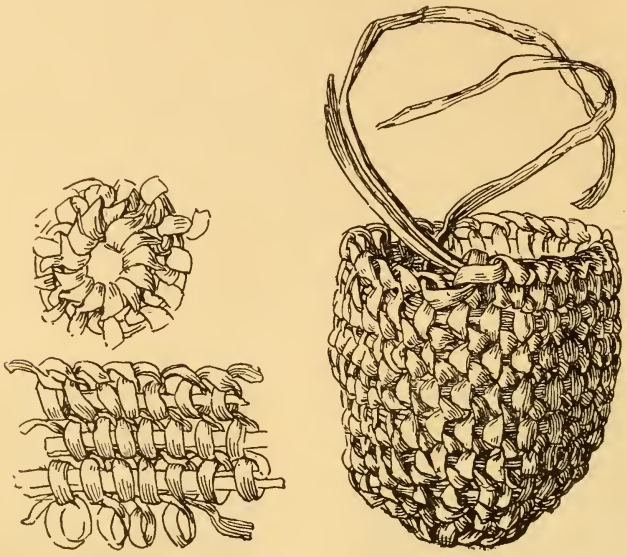

FIG. 41.
FUEGIAN COILED BASKET AND DETAILS.

cedar bast, and grass stems, dyed with Oregon grape, is unique, and on this account I have applied the term imbricated to the "Klikitat"

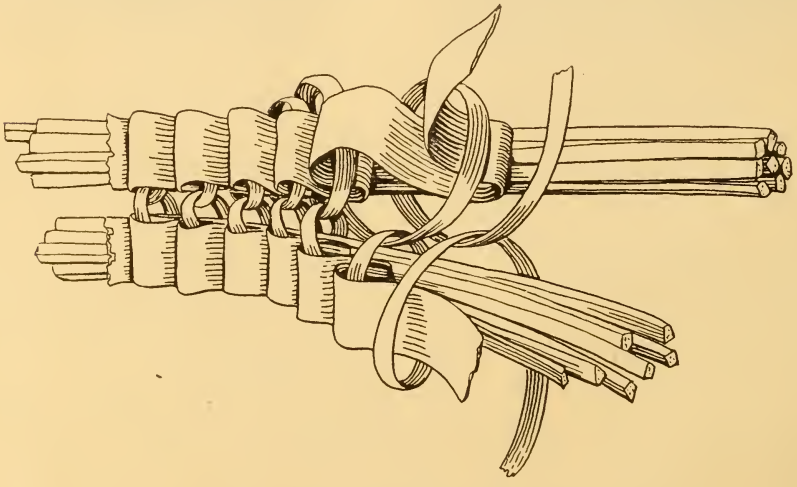

FIG. 42.
IMBRICATED WORK DETAIL, CALLED KLIKITAT.
Showing method of concealing coil stitches.

basket, as shown in fig. 44. The strip of colored bark or grass is laid down and caught under a passing stitch; before another stitch is taken this one is bent forward to cover the last stitch, doubled on

itself so as to be underneath the next stitch, and so with each one it is bent backward and forward so that the sewing is entirely concealed, forming a sort of "knife plaiting." In some of the finer old baskets in the National Museum, collected sixty years ago, the entire surface is covered with work of this kind, the strips not being over an eighth of an inch wide. Mr. James Teit describes and illustrates this type of weaving among the Thompson River Indians of British Columbia, who are Salishan. The body of the basket is in the root of *Thuja gigantea*, and the ornamentation in strips of *Elymus triticoides* and *Prunus demissa* (fig. 43).

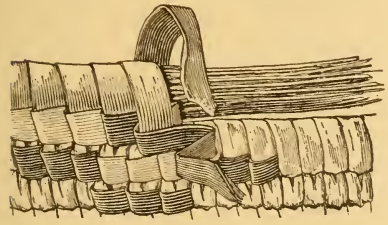

FIG. 43.
IMBRICATED BASKETRY DETAIL, FROM THE THOMPSON RIVER INDIANS, BRITISH COLUMBIA.
After James Teit.

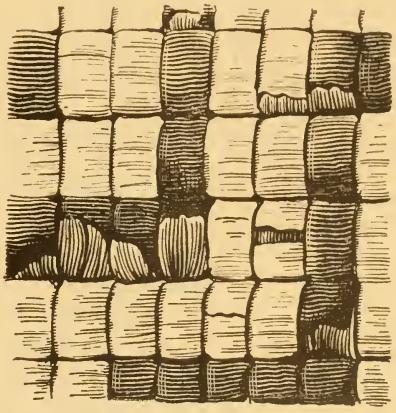

FIG. 44.
IMBRICATED COILED WORK, CALLED KLIKITAT.
Rep. U. S. National Museum, 1884, pl. 6, fig. 10.

Imbrication is one of the most restricted of technical processes. Eells says that some women in every tribe on Puget Sound could produce the stitch, and he names the Puyallups, Twanas, Snohomish, Clallam, Makah, Skagit, Cowlitz, Chehalis, Nisqualli, and Squaxon. It is understood that here it is a modern acquirement. It is the native art of the Klikitat, Yakima, and Spokanes, all of whom are of the Shahaptian family. The Thompson River Indians, who are Salishan, have long known the art.

LIST OF BASKET-MAKING TRIBES.

The following list includes the names of those tribes known to the author as makers of any kind of basketry, especially in North America, together with the linguistic families to which they belong, and their locations.

In a much fuller work, to be subsequently published, a larger list will be given, and it is desirable that those who are interested in the subject will supply to the author the names of those tribes not to be found here.

Tribe.	Family.	Locality.
Abnaki	Algonquian	Point Pleasant, Maine.
Aleut	Eskimauan	Aleutian Islands.
Algonkin	Algonquian	Northern frontier and Canada.
Apache tribes	Athapascan	Arizona and New Mexico.

Tribe.	Family.	Locality.
Arapaho	Algonquian	South Dakota.
Arikara	Caddoan	Fort Berthold, North Dakota.
Ashochimi	Yukian	near Healdsburg, California.
Attacapa	Attacapan	Southern Louisiana.
Attu Island, *see* Aleut.		
Auk	Koluschan	Gastineaux Channel, Alaska.
Bilhoola, Bellacoola	Salishan	Northwest British Columbia.
Calpella	Kulanapan	Ukiah, California.
Carriers, *see* Thompson River.		
Cayuse	Waiilatpuan	Walla Walla and Columbia River.
Chaves Pass Ruin	Hopian	Arizona.
Chehalis	Salishan	Washington State.
Chemehuevi	Shoshonean	Arizona and California boundary.
Cherokee	Iroquoian	North Carolina.
Chetimacha	Chetimachan	Louisiana.
Chevlon ruin	Hopian	Northeastern Arizona.
Chilcotin	Athapascan	British Columbia.
Chilkat	Koluschan	Southeastern Alaska.
Chinook tribes	Chinookan	Lower Columbia River.
Choctaw	Muskhogean	Louisiana.
Chuk Chanci	Mariposan	Sierra region, California.
Clallam	Salishan	Washington State.
Clatsop	Chinookan	Pacific Coast, Washington.
Coahuilla	Shoshonean	Southern California.
Coconinos, *see* Havasupai.		
Colville	Salishan	Colville Agency, Washington.
Concow	Pujunan	Round Valley, California.
Couteau, *see* Thompson River.		
Cowlitz	Salishan	North of Mount St. Helen.
Coyotero	Athapascan	Southern Arizona.
Creek	Muskhogean	Southern States and Indian Territory.
Diegueño (includes many scattered bands)	Yuman	Southern California.
Digger	Pujunan	Northern California.
Esak-tellar	Eskimauan	E. Prince William Sound, Alaska.
Eskimo	Eskimauan	Arctic America.
Flonho	Athapascan	Eel River, California.
Gallinomero	Kulanapan	Cloverdale, California.
Garotero	Athapascan	Same as Coyotero.
Gualala	Kulanapan	Gualala, Mendocino County, California.
Guthleuk	Koluschan	N. of Prince William Sound, Alaska.
Haida	Skittagetan	Alaska and British Columbia.
Hat Creek	Palaihuihan	Northeastern California.
Havasupai	Yuman	Cataract Canyon, Arizona.
Hoh	Chimakuan	Neah Bay, Washington.
Homolobi, ancient ruin		Near Winslow, in Arizona.
Hoochnom	Yukian	Round Valley, California.
Hoonah	Koluschan	Cross Sound, Alaska.
Hootzahtai	Koluschan	Admiralty Island, Alaska.
Hopi	Hopian	Northeastern Arizona.
Hualapai, *see* Walapai.		
Huicholes	Nahuatlan	Zacatecas, etc., Mexico.

Tribe.	Family.	Locality.
Hupa	Athapascan	Trinity River, California.
Iroquois tribes	Iroquoian	Northern frontier and Canada.
Jicarilla Apache	Athapascan	Northern New Mexico.
Kabinapo	Kulanapan	Clear Lake, California.
Kalispel	Salishan	Flathead Agency, Montana.
Karok	Quoratean	Klamath River, California.
Kaviagmiut	Eskimauan	Kadiak Island, Alaska.
Kawia, *see* Coahuilla.		
Klamath	Lutuamian	Northern California.
Klikitat	Shahaptian	Yakama Reservation, Washington.
Kohonino, see Havasupai.		
Kutenai	Kitunahan	Idaho and British Columbia.
Lillooet	Salishan	British Columbia.
Little Lakes	Kulanapan	Round Valley, California.
Lolonkuh	Athapascan	Eel River, California.
Luiseño	Shoshonean	San Luis Rey, California.
Lummi	Salishan	Northern Puget Sound.
MacCloud	Copehan	Northern California.
Maidu	Pujunan	E. of Sacramento River, California.
Makah	Wakashan	Washington State.
Makhelchel	Copehan	Clear Lake, California.
Maricopa	Yuman	Near Maricopa, Arizona.
Mattoal	Athapascan	California.
Maya	Mayan	Yucatan.
Melicite	Algonquian	New Brunswick.
Menominee	Algonquian	Northeastern Wisconsin.
Mescalero	Athapascan	Southern New Mexico.
Mexican, *see* under various families.		
Micmac	Algonquian	Nova Scotia.
Mission, a great many villages	Shoshonean and Yuman.	Southern California.
Miwok	Moquelumnan	California.
Modoc	Lutuamian	Klamath River, California.
Mohave	Yuman	Between Arizona and California.
Moki or Hopi	Shoshonean	Northeastern Arizona.
Mono	Shoshonean	Middle California.
Muckleshoot	Salishan	Puget Sound, Washington.
Napa	Copehan	Sacramento River, California.
Natano, band of Hupa.		
Navaho	Athapascan	Northern N. Mexico and Arizona.
Nez Percé	Shahaptian	Northern Idaho.
Nishinam	Pujunan	Sacramento Valley, California.
Nisqualli	Salishan	Puget Sound.
Nu cha a wai i	Mariposan	Tule River, California.
Numlaki	Copehan	Round Valley, California.
Nutka	Wakashan	Vancouver Island.
Ojibwa or Chippewa	Algonquian	Michigan.
Opata ruin	Sierra Madre	Sonora and Chihuahua.
Oraibi	Shoshonean	Hopi pueblo.
Paiute	Shoshonean	Western Nevada.
Panamint	Shoshonean	Death Valley, California.
Papago	Piman	South of Tucson, Arizona, and Sonora, etc.

Tribe.	Family.	Locality.
Patawat	Wishoskan	California.
Patwin	Copehan	Sacramento River, California.
Pawnee	Caddoan, *see* Arikara.	
Penobscot	Algonquin	Old Town, Maine.
Peruvian	Kechua	Highlands of Peru.
Pima	Piman	Southern Arizona.
Pit River	Palaihuihan	Pit River, NE. California.
Pomo (many subdivisions).	Kulanapan	Ukiah Valley, California.
Potter Valley	Kulanapan	Round Valley, California.
Pueblos	Tanoan, Keresan Zuñian, Shoshonean	New Mexica and Arizona.
Puyallup	Salishan	Puget Sound.
Queeto	Chimakuan	West Washington.
Quileute	Chimakuan	West Washington.
Quinaielt	Salishan	Western Washington.
Quinault, same as Quinaielt.		
Salishan tribes, great variety of technic.		
San Carlos (Apache)	Athapascan	Southeastern Arizona.
San Felipe Mission	Yuman	Southern California.
Santa Rosa.		
Santa Ysabel.		
Seminole	Muskhogean	Florida.
Shasta	Sastean	In Shasta and Scott valleys, California.
Shoshoni	Shoshonean	Great Interior Basin.
Shushwap	Salishan	British Columbia.
Sia	Keresan	New Mexico.
Sikyatki, ruin, ancient Tusayan.		Northern Arizona.
Sitka	Koluschan	Alaska.
Skagit	Salishan	Northern Puget Sound.
Skokomish	Salishan	Upper Puget Sound.
Snohomish	Salishan	Upper Puget Sound.
Solano, *see* Napa.		
Spokan	Salishan	Montana and Washington.
Squaxon	Salishan	Puget Sound.
Suisin, *see* Napa.		
Tarku	Koluschan	Tarku Inlet, Alaska.
Tatu	Yukian	California.
Tenaskot		Washington, border of British Columbia.
Thompson	Salishan	British Columbia.
Tinne	Athapascan	Alaska.
Tlinkit	Koluschan	Southern Alaska.
Tolowa	Athapascan	Crescent City, California.
Tonto Apache	Athapascan	Southern Arizona.
Tsinuks	Chinookan	Columbia River.
Tulare	Moquelumnun	Middle California.
Tule Rivers	Mariposan	Southern California.
Twana	Salishan	Puget Sound, Washington.

Tribe.	Family.	Locality.
Umatilla	Shahaptian	Oregon.
Utes, many divisions	Shoshonean	Utah.
Viard	Wishoskan	Eel River, California.
Waiam	Shahaptian	Des Chutes River, Oregon.
Wailaki	Copehan	Round Valley, California.
Walapai for Hualapai	Yuman	Northwestern Arizona.
Wappo	Yukian	Alexander Valley, California.
Wasco	Chinookan	The Dalles, Oregon.
Washoe	Washoan	Carson and elsewhere, Nevada.
White Mountain Apache	Athapascan	Eastern Arizona.
Wichumni	Mariposan	Sierra Region, California.
Wintun	Copehan	W. of Sacramento River, California.
Wushqum	Chinookan	Columbia River, Oregon.
Yakima	Shahaptian	Washington State.
Yakutat	Koluschan	About Yakutat Bay, SE. Alaska.
Yana or Nozi	Yanan	Near Redding California.
Yaqui	Piman	Sonora, Mexico.
Yo al man i	Mariposan	Tule River, California.
Yo er kal i	Mariposan	Tule River, California.
Yokaia	Kulanapan	Russian River, Ukiah Valley, California.
Yokut	Mariposan	Middle California.
Yolo		Northern California.
Yuki	Yukian	Round Valley, California.
Yuma tribes	Yuman	Southern Arizona and Lower California.
Yurok	Weitspekan	Klamath River, California.
Zuñi	Zuñian	Zuñi River, New Mexico.

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