

Spinning

The Navaho still use the same type of spindle they learned to make ~~from~~ their Pueblo teachers. Since the American occupation of the Southwest, traders and others have tried to introduce the spinning wheel, but the Navaho women have always rejected it, preferring to use their spindles of ancient origin. Wool is spun two or three times, occasionally more, until the desired fineness of thread is achieved, through the process of twisting and pulling the loose fibers until a firm, strong thread is produced.

Dyeing

Using a wide variety of native plants, the Navaho produce dyes of many colors and shades. There are two exceptions, indigo and black; the wool from black sheep is never a true black, ^{but} ~~tending~~ ^s to a brownish tinge. Good black dye is made from a mixture of twigs and leaves of sumac boiled four or five hours, then added to a mixture of powdered native yellow ochre and an equal amount of pinon gum, stirred together over a fire until a fine black powder is formed. The tannic acid of the sumac acts as a mordant to produce a rich, permanent black. Indigo was imported ^{in lumps} by the early traders and was used extensively until the end of the 1890s. (Occasionally some of this dye is still made.) The indigo, tied in a cloth was suspended in a large jar of urine which acted as a mordant. The wool was placed in the jar and left until the desired ^{depth of color} ~~shade~~ was obtained. The mordant used with most native plants is an impure alum found in limited quantities in certain regions on the reservation, while certain plants require moss or lichen.

piece is laced to the top cross beam by a rope, using large loops by which the tension of the weaving frame can be adjusted. Again care is used to see that all cross pieces are parallel.

The next procedure is the ¹tying in of the healds(or heddles) to form the shed through which the weft is passed. The healds are tied to every other warp thread for ^{plain} simple ^(every other thread) basket weave, or to ~~other~~ combinations of threads for any other weaving pattern the weaver desires. Sometimes several healds are used in ^{as diamond or herring bone weaves.} intricate patterns. The loom is now set to commence weaving the rug. Everything about the loom has been made of simple native material and is completely functional.

Weaving

The simple tools used in weaving number only two, the comb and the batten, though every weaver will have several sizes of each. The comb is made of a hard wood into which tines have been cut, like a fork, perhaps three inches in length, with a handle carved out at the opposite end. The comb is used first to beat down the weft as it is passed through the shed. The batten, also made of hard wood, is a slightly curved piece of wood about thirty inches long and three wide, though smaller sizes are also used. The batten has two purposes, first to open the shed by inserting it between the lines of warp, then turned edgewise, to make a space in the shed for the insertion of the weft threads; second to press down firmly the weft when the width of the line is completed, the degree of firmness struck with both the comb and the batten assures the tightness of the weave. A true shuttle has never been used

the ~~lower~~ stick, then over and under the top stick, continuing until the sufficient number of threads have been wound. The winding of the warp is most carefully done, the weaver making certain that the threads are straight, the tension even, and that there are no twists or ~~crossed threads~~. She ties the last thread at the diagonal of the first tie.

Next she adds the edge cords. These consist of two or three ply twisted strands of weft threads which have been measured twice the width of the rug, so that they will make a double edging. The edging is woven in and out of alternate warp threads, keeping the spacing and tension even, for both the top and bottom edges. Next comes the preserving of the shed- the cross formed at the center of the warp by the over and under winding of the warp threads. She places a small reed (the length of the rug width) on each side of the cross, ^{tying} tying them to hold this cross in place. The four ~~temporary~~ poles of the warping frame are then removed, leaving a mass of warp threads, but in which the shed is preserved by the reeds, and the top and bottom edges holding the ~~ends of the~~ warp in place. ~~The edges are~~ ^{then} then tied to the weaving frame cross bars, by weft threads which wind around the bars holding the edges securely to it. ^{front} Sometimes this winding thread is placed between every two warp threads, sometimes three or six, depending on the size and whether the rug will be woven of coarse or fine material. The bottom ^{cross} ~~cross~~ piece of the weaving frame is then tied to the bottom cross beam of the stationery loom, and the top

also this is the twill weave, unique to Navaho weavers.

by the Navaho, as they insert the weft with their fingers or, when weaving plain long stripes, a small stick is used, around which weft thread has been wound. But as so many of the designs require only a few inches of a given color at a times, the nimble fingers of the weavers seem very adequate. As weaving is done in a sitting position, many weavers do not complete a whole line at a time when this would require moving, so they will ~~will~~ weave several inches from the position before moving on to complete the line. The shed is changed with the shed rod and the healds.

The variety of weaves attained by the Navaho are many. From ~~simple basket~~ ^{plain} ^{to tapestry weave} weave, to the diagonal and ^diamond twills, and the rare ~~two-faced~~ ^{double weave} blanket which has a different design on each side. Add to this, the variations of color and pattern and the weavers choice is great.

Most of the designs are carried in the weavers mind. She does not use a diagram or drawing or counting of threads. The exceptions are some of the very intricate patterns of ^{Tapestry} sand painting rugs, or some of the early classical designs. Then the weaver makes a sketch in the sand. This is a remarkable feat, for the weavers have many interruptions, and are sometimes away from the loom for days at a time, yet they know at just what stage of the design they left when called away. Skillful hands and ^fretentative minds quickly resume an interrupted task.