

slanting board or rock, repeating until all the dirt, sand and grease have been removed. The wool is then spread out in the sun to dry, and finally stored in sacks ready for use.

Carding

When the weaver is ready to card her wool, she first loosens it by hand, then combs it between carding tools until the hairs lie all in one direction. The old cards consisted of burrs held in place by strips of leather mounted on small boards with handles at one side. These were replaced when metal cards of American manufacture were procurable at the trading posts. When a weaver wants to produce good grey color, she mixes wool from black sheep with that from white as she cards the wool. This method makes the finest grey used in many rugs, particularly those from the Two Grey Hills area.

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 twice, occasionally more, until the desired fineness of thread is achieved, through the process of twisting and pulling the loose fibres until firm, strong thread is produced.

Dyeing

Using a wide variety of native plants, the Navaho produce dyes of many colors and shades. The wool from black

replace with
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replace with
new copy
not same spindle -
more like pliers & up with

look like 10/15

the

THE BLANKETS

From the beginning of Navaho weaving, blankets and mantas were made for clothing. Beyond personal needs, as the chroniclers have told us, surplus blankets were made for trade. The great period, known as the classic period, was from approximately 1840 to the end of the nineteenth century. During the earliest part of this period, possibly even before, Spanish traders brought a fabric to trade to the Indians known as bayeta cloth. This was imported from England to Spain, thence to New Mexico, and ^{white} it was called by the Spanish name, it was in reality English Manchester cloth. Red color predominated, a special shade of red which took the fancy of the Navaho weavers, who, after careful scrutiny, ^{white} unraveled it, re-spun and re-wove it into the intricate patterns of these early blankets. Many of the finest examples of Navaho weaving contain the beautiful bayeta, merged into the textiles along with the native handspun wool. Many serapes and blankets of this period were so firmly woven that they were waterproof. They were in great demand and were highly prized.

change

From about 1890 until the early years of this century, Navaho weaving ^{change} deteriorated. The weavers commenced making coarser fabrics largely for sale to the tourist trade as floor rugs. To a considerable extent the traders were responsible for this change. With this making of rugs rather than blankets, borders were introduced with patterns of very different character from

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able to sell these at a higher price than those made of commercial dyes, and to sell them as fast as the weavers could produce them.* This was the beginning of another great change in the production of rugs, for other traders soon followed McSparron's lead, and today, thousands of these beautiful rugs are on the market.

The Two Grey Hills ^a ~~area~~ ^{region}, however, has continued the border patterned rugs which are woven with undyed wool, white, grey, brown, and black wool, the latter, however, is dyed with black dye to produce a true black. walnut too?

Occasionally very large rugs have been made on special order, measuring twenty or more feet wide by nearly forty feet long. Special looms had to be built to accommodate such size, but they were, or are, built to the traditional specifications. Rugs of extremely fine texture have appeared in recent years from the Two Grey Hills ^a area. One weaver, Daisie Tauglechee, spins strands so fine that her woven fabric counts 110 weft threads to the inch. Others are now following her lead, but so far, these are still bordered rugs and of the undyed wool except for the black.

Throughout the nearly 175 years that the Navaho women have been weavers, they have produced an extraordinary variety of products; moving quickly from the first simple striped blankets to the superb classic period, through a time of decadence, until in very recent years a new surge of fine quality has appeared. The variety of design seems endless in its use of geometric shapes, the spacing of line and color, and the harmony of the whole, for there are never two exactly alike.

* Navaho Blankets, Charles A. Amsden, p. 224.

The variety of weaving is also great, for following the old original clothes that were woven, there were shoulder blankets, ponchos, serapes, saddle blankets, both single and double weave, rugs, Yei blankets (sand-painting blankets), saddle girths, sashes, garters, hair-cords, stockings and leggings. Weaving is unquestionably the great craft of the Navaho. The finest examples are to be found in leading museums of the world, as well as in many private collections. The new building of the Navaho Arts and Crafts Guild at Window Rock, with its contents of weaving, silver jewelry and other crafts, is evidence of the vigorous production of the craftsmen of today. ~~When the~~ quantity of crafts of all kinds sold by the many traders and shops all over the ^Southwest and elsewhere, the aggregate is most impressive.

and copy

The quality of the products depend ^{in some degree} upon the standard of the current managers.

When the volume of ^{the} all handicrafts which are sold by the many traders and shops all over the Southwest & elsewhere, is added up, the aggregate is most impressive.

W. & K. K. K.
K. K. K. P. Davis?

probably made by Spanish, Mexican, or even Pueblo people. The Spanish brought silver ornaments to New Mexico where the Navaho doubtless saw them, and they may have purchased, traded for, or even stolen some of these. Many of the designs later adopted by the Navaho were of Spanish origin, such as the so-called Squash Blossom, which in reality is the pomegranate blossom, long used by the Spanish in Europe, fashioned for buttons of brass or silver, and in iron for ornaments for spurs.

One of the early Navaho to ply the blacksmith's trade was Atsidi Sani, who became known as a maker of bridle bits and knife blades. In his authoritative book, The Navaho and Pueblo Silversmiths, John Adair tells of Atsidi Sani learning the silversmith's art from Nakai Tsosi, a Mexican craftsman who lived near Mount Taylor.

As there seems to be no record of any silver work by the Navaho prior to the exile to Fort Sumner, it must have been after their return in 1868 that practice of the art commenced. That it spread rapidly is evident from all the early records of the period between 1870 and 1880, for by the time that Dr. Washington Matthews was stationed at Fort Wingate at the latter date, there were a good many proficient craftsmen. Dr. Matthews employed two Navaho silversmiths whom he established near his residence where he might observe them at their work, and he left for posterity a detailed account of the art as practiced by these two men. Some fifty years later, Father Berard Haile also left a similar record of his findings over a wider area, for he had been making this study as well as many others during his long years on the reservation.

were used. After the coming of the railroad, pieces of rails were used and still are used by many smiths. An anvil was fastened to the top of a large log cut to the right height for comfortable work.

Crucibles

The early crucibles for melting silver were made of clay and baked hard in a fire. They were about three or four inches in diameter and had an outward curved rim and one or more spouts. These were not very durable and were replaced by commercial crucibles when these became available. Some smiths have found that cup-shaped pieces of prehistoric pottery from a ruin, served the purpose and were more durable than any.

Molds

Some molds are made of ingots for casting a bar of silver to be worked into a bracelet or other ornament. Molds for making casts are incised in a soft stone, preferably pieces of volcanic tuff, a very light pumice-like stone which is found in several places on the reservation. ~~All~~ molds for casting are greased with mutton tallow. Molds for beads are cut into iron or hard wood, smooth surfaced, so that the silver coin or sheet can be pounded into the depression, making a spherical half of a bead. Later two of these are soldered together to make the round bead.

The incised pieces of tuff for casts are cut to approximately the right size and shape and the surface perfectly smoothed. A cover piece is then fitted to each mold,

making as tight a fit as possible. Grooves are cut at one end of the incised piece to permit the entry of the molten silver, while two or more grooves are cut for air passages.

Smelting Fuel

Charcoal has always been used for smelting fuel. It is prepared during the summer months by making a large fire of pifon or juniper branches. After the flames have died down and only glowing embers remain, the coals are smothered with earth and allowed to cool.

Blowpipe

Originally the blowpipe was hammered out of a piece of brass or copper wire, bent into a tube with a curved, tapering end. It was used in soldering with a lamp or wick of twisted cotton soaked in tallow. The modern blow torch is a highly prized tool used today by most smiths. Some ingenious individuals have fashioned torches from cans by fastening a spout on one side and an opening on the opposite side into which a rubber tube was fastened. Blowing through the tube produced enough pressure to blow the flame out of the spout.

Solder

^{Silver}
Solder is used with borax as flux to make it flow more smoothly.

Materials

Some of the very early smiths worked in copper and brass, making rings and bracelets. The first silver to be used was American coin silver, melted and fashioned to the desire of the craftsman. When the United States Government put a stop to the use of coins for this purpose, some time

in the 1880s, the traders soon procured Mexican pesos in their place. The Navaho smiths preferred the peso silver, for it had less alloy and was somewhat softer. As the traders began to buy jewelry to sell, they provided silver in one-ounce slugs in quality of fineness approximately that of the coins.

Stones

Turquoise first was used in the 1880 period. The traders procured stones from the mines near Santa Fe, and later from mines in Colorado and in Utah. Sometimes ^{the traders} there ^{supplied that were} ~~were~~ stones already cut, sometimes in chunks that must be shaped and polished. Early stones were set in deep bezels, with the edges coming slightly over the top of the stones, holding them securely in place. As craftsmen acquired greater skills they were able to set stones in a lower setting. Other kinds of stones also were used, malachite, garnets, cannel coal.

Cleaning

The Navaho like their silver well polished. Cleaning used to be done with native alum, then polished with buckskin, but today it is cleaned by dipping in a diluted solution of nitric acid, then put in a bowl of water and brushed with a wire brush. It is buffed either by hand or with a buffing pad attached to a grindstone, with the pad well covered with jeweler's rouge.

The skill of the Navaho craftsman lies in his ability and judgement in all phases of his work. Sprinkling a little borax on the silver as it melts, reduces the melting point; it

never wastes anything; he always seems to find a way to put worn out scraps to use. And seldom does he ever make two pieces alike; there is always a difference, giving his work that unmistakable quality of hand work, and the uniqueness of Navaho design.

The Navaho learns the techniques and methods of his craft from watching another smith. This is usually a relative, and an apprentice pays for his instruction by helping his teacher as soon as he is able. In rare cases when a man is learning from a non-relative, he pays for his apprenticeship in sheep, or cash, or some other way. The Navaho, when he does not have the money to buy the tools he needs, shows great ingenuity and resourcefulness in his ability to fashion such tools from old or other material.

ARTICLES OF JEWELRY

Conchas

The round or oval disks ^{are} made for ornamenting belts and bridles. Sometimes ^{these are} very simple, sometimes ornate with design or turquoise studding.

Buckles

Silver buckles ^{are made} for belts and bridles; ^{other} metal ^{are used for} buckles for girths. ^{buckles}

Bridles

Headstalls ^{are} mounted with silver bars with various degrees of ornamentation. Conchas are sometimes used at joints with larger bars, sometimes a pendant from the cross piece over the head of the horse.

There are many other types of necklaces; strings of turquoise, of shell ground into very fine beads; strings of coral.

Rings

The earliest rings were plain silver bands; soon some had simple incised designs. The use of turquoise appeared in the early 1880s. Some cast rings are made. Most rings now have insets, usually turquoise, but also malachite and garnets, or cannon coal, occasionally polished petrified wood.

Pins

There are pins of many shapes and designs, both with and without turquoise.

Earrings

Several types of earrings are made, ^{such as} round circular hoops with unfastened silver beads ^{move} strung on the hoops which Flat slightly decorated rings; pendants, narrow cone-shaped with spreading flowerlike petals at the ends. The most widely used earrings for men are pieces of turquoise, drilled at one end for the insertion of string to be attached to the ear.

Buttons

The variety of buttons is great, both hammered silver as well as cast. There are many sizes and many shapes, ^{such as} Buttons with small turquoise insets; plain silver disks, some with incised designs. Coins are often used which have loops soldered on one side. Buttons are used as ornaments of collars, cuffs, blouses, leggings, moccasins; on pouches and narrow leather straps.

Unusual Pieces

The Mother-in-law bells are made from quarters ham-
mered to thin bell shapes by pounding ^{the corner} a round-headed bar
into a corresponding receptacle of hard wood or iron.
Small clappers are fastened to the inside. A bell is fas-
tened to the end of a short string of beads. These are
made for older women who wear them on their belts to notify
their sons-in-law of their approach.

The Powder Horn was a gracefully designed receptacle
to hold a charge of powder. It had a handle on one end,
the whole object being shaped like an elongated letter "S".
A small chain was fastened to the center for attachment to
a belt. When bullets were available, powder horns were no
longer made, and as many were probably melted down to make
other articles, they soon became very rare.

Tobacco Canteens were beautiful small containers, sel-
dom made any more, and there are only a few in existence,
mostly in museums and private collections.

A variety of other pieces are being made today for sale
to the American public, such as spoons, silver boxes, and
a number of other articles.

When the Navaho Arts and Crafts Guild was founded in 1940,
under the direction of René D'Harnoncourt of the National Indian
Arts and Crafts Board, ~~the first manager was John Adair,~~ ^{who was appointed} ~~whose~~ ^{as the first}
~~keen interest in and knowledge of the products of the Navaho~~ ^{guild's first} ~~weavers and silversmiths made him the ideal person to commence~~ ^{manager}
~~this activity.~~ Ambrose Roanhorse, one of the most skilled Navaho

Blood must never touch a ceremonial basket. Should this taboo be broken, harm will come not only to the maker, but also to the singer who used it. In silversmithing, the craftsman must not make certain pieces of jewelry while his wife is pregnant or some disaster will occur.

Other crafts pursued by the Navaho are many kinds of leather work, both decorated and plain, saddles, shoes and moccasins, pouches, straps and belts, hobbles, quirts and ropes. In early times the Navaho became good tanners, for they made shields ~~and~~ ^{and} spears, quivers for their arrows, leather cap-like helmets. To whatever craft the Navaho turns talents, he will execute it with skill and dexterity.

the weavers, who in general, preferred to continue spinning their own wool, and in addition, the traders objected to the use of the cotton warp, *which is not as fast as sheep.*

Shearing

In early times, sheep were shorn with the use of any piece of thin metal that could be honed to as sharp an edge as possible on a stone. But when metal shears were first brought to the trading posts, the Navaho were quick to use them. The shorn wool is sorted carefully, separating the longest hairs to use as warp, removing the shortest to be sold as wool, and saving the remainder for spinning weft threads. Burrs and other matter sticking to the wool are carefully removed.

Washing

Usually only greasy wool is washed. Using the pounded roots of the yucca plant for soap (still preferred by most weavers), and making a rich lather with it in a pan or a tub, the mixture is poured over the wool as it lies on a

These three pictures show clearly the process of weaving. The shed stick at the top of the warp, then three heddle sticks, then the battens, one turned on edge to spread the warp, the other flat, showing insertion in the warp. Above, a stick is being used as a shuttle; at lower left, the usual hand method. Upper left is a diamond twill; on the right, a herringbone weave. This also shows the top and side edge cords.

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weaves, are the variations of color and pattern, giving the weaver an extensive choice.

Most of the designs are carried in the weaver's 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 classical designs. Then the weaver makes a sketch in the sand. This carrying of a design mentally is a remarkable feat, for every weaver has many interruptions, and sometimes may be away from the loom for days at a time, yet she knows at just what stage of the design she left when she was called away. A retentive mind and skillful hands enable her to resume quickly her interrupted task.

Correct

Knitting

The Navaho also practice knitting, though interestingly enough it is usually the men who knit, making leggings or footless stockings. Originally sticks of hard wood were used for needles, later, wire, or the ribs of old umbrellas served well. Regular knitting needles were of course carried by the traders when the demand for them was manifest.

As many as four or five needles are used. The knitters create a raised rim ^a at the top of the stocking with a ^{purl} ~~left hand~~ stitch, giving a firm edge for longer wear. A knitted or plaited band is added at the bottom to pass under the foot to keep the stocking from working upward.