

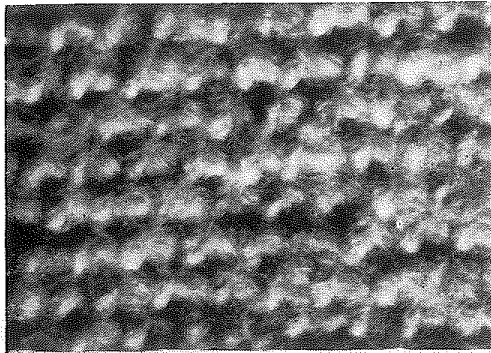
# DENVER ART MUSEUM

1300 LOGAN STREET, DENVER, COLORADO

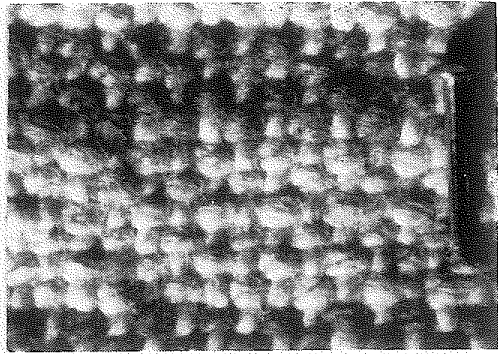
## DEPARTMENT OF INDIAN ART

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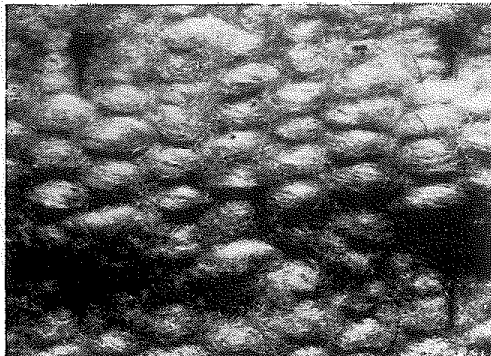
FREDERIC H. DOUGLAS, EDITOR



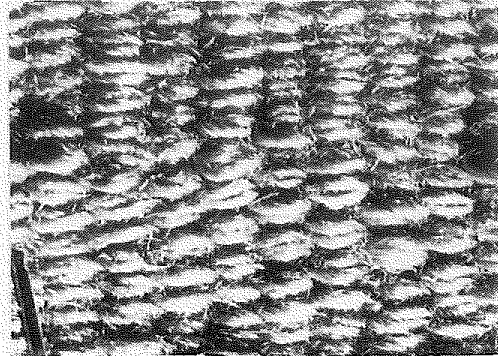
**A. Cotton Handspun**



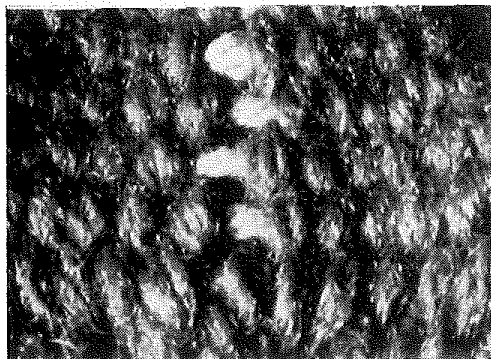
**B. Cotton Sacking**



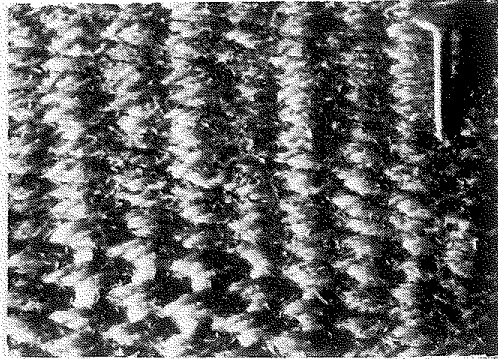
**C. Wool Handspun**



**D. Bayeta—2 Thread**



**E. Germantown (Shows Selvage)**



**F. 3 Ply Saxony**

## SOUTHWESTERN WEAVING MATERIALS

LEAFLET 116

MAY, 1953

**1. INTRODUCTORY.** This leaflet is about the various forms in which wool and cotton were used in weaving by the Pueblo and Navaho and by several Southern Arizona tribes, Pima, Papago, Maricopa, Yuma, Mohave and perhaps others. Other materials such as apocynum (Indian hemp) are not discussed.

Dated specimens indicate that the Pueblo people were weaving in cotton by the 700's A. D. At that time the Navaho were not in the Southwest. Information is lacking about the Southern Arizona tribes.

Wool-bearing sheep were introduced by the Spanish in the 1500's and by the early 1600's the Pueblos were using wool in weaving. The Navaho learned weaving from the Pueblos about 1700. They have used only wool (see section 3).

**2. COTTON** was brought into the Southwest from Mexico early in the Christian era. It has been cultivated by the Pueblos ever since, though very little is grown today. The species is *Gossypium* Hopi Lewton. The Pueblos have been weaving with it—though recently in greatly reduced quantities—for 1200 years. Leaflets 56, 89, 90, 91, 92-93 and 96-97 describe Pueblo cotton fabrics. The Southern Arizona tribes have not woven, except perhaps an occasional cradle band, for several generations.

Today the making of cotton thread for weaving is almost entirely restricted to the Hopi of Arizona. Men are the spinners, as well as the weavers, and produce the thread on a spindle. This is a slim rod, 12-18 inches long, over which is slipped a thin disk 3-5 inches in diameter, so that the disk rests about 3-4 inches from the butt of the rod. The spinning process is described in Leaflet 3.

The thread produced is single ply, fairly coarse, of even diameter and free from bumps. If spun for warp it is finer. (Figure A.)

Today commercial cotton batting is often spun instead of the locally grown wild product. Thread made from it is possibly whiter than that made from the wild cotton.

**3. COTTON STRING** of commercial manufacture has been used as a substitute for handspun thread for 50 years or more. It may be recognized by the regular corkscrew twist of its several plies. For a few years shortly before and after 1900 the Navaho used much cotton string for the warp in wool blankets. The Pueblos use it increasingly today in cotton fabrics for both the warp and weft or for the warp alone.

**4. COTTON SACKING** is not properly weaving material but it is mentioned here because it has been used by the Pueblos as a substitute for hand woven cotton cloth. The weave is identical (a basket weave showing both warp and weft) but the threads are finer and the weave evenner and tighter than that of handwork. Widely spaced rather narrow bands of color usually are present and make identification easy. (Figure B.)

## WOOL

**5. HANDSPUN** thread for weaving is produced by both Pueblo and Navaho spinners. The spindle and process are identical. Women are the spinners among the Navaho, men among the Pueblos.

Handspun thread is always single ply. That is, it is made up of just one spun unit, not several twisted together or running more or less side by side.

See (Figure C) on the cover. It is overwhelmingly the most common form of weaving wool.

Pueblo handspun is on the average more coarse than Navaho, but it is much more even in diameter. The Pueblo custom of rubbing the thread as it is spun with a corn cob removes the small lumps and surface irregularities so often seen in Navaho handspun.

Among both groups wool for warp is spun a number of times to make it hard and fine.

**6. BAYETA AND RAVELED THREADS** are famous in Navaho weaving and were also used by the Pueblos in weaving or, more importantly, for embroidery. The term "bayeta" is the Spanish word for baize, a wool cloth made in England ever since the mid-1500's. It is made with fairly coarse 1-ply threads in a simple basket weave (warp and weft both visible) and was exported from England to all parts of the world. The Spanish took it to Mexico whence it spread to the Southwest. By at least the early 1800's Navaho women were raveling out the threads and weaving them into blankets. The Pueblos were doing the same to obtain embroidery threads.

Bayeta is usually red, but blue, green, yellow and white colors also exist and appear in blankets. The old story that the Indians obtained bayeta by raveling Spanish uniforms cannot be disproved, but the presence of the cloth in large bolts easily available at traders makes it unlikely that much uniform cloth was used. The Plains tribes and many others used bayeta in quantity though they did not ravel it as they were not weavers.

Other cloth raveled came from commercial bed blankets, red flannel underwear and a kind of imitation bayeta called American flannel, a rather fuzzy, sleazy material. These other ravelings can usually be recognized by the fineness of the threads as compared with the rather fat round threads of bayeta. Bayeta and other raveled threads can best be recognized by sight, not touch as once was thought. They are, with some exceptions, used in 2 or more plies which run sometime parallel (Figure D) and sometimes unevenly and irregularly twisted. Single large threads of real English bayeta seem to have been used sometimes. Somewhat tentatively it can be said that recognition of these threads depends upon their extreme size regularity, due to machine spinning, and the presence of white spots on the red threads. These spots are due to the fact that the cloth was dyed after weaving. The dye did not always penetrate so that when the cloth is raveled these undyed spots show. These spots are not, however, invariably present.

**7. SAXONY YARN** was imported to the Southwest from Saxony in Germany by at least 1850 and probably earlier. It is usually red and can be recognized by its notably silky sheen and the very even twisting of 3 fine plies. Blankets made entirely of Saxony are perhaps rarer than those of bayeta, but small stripes or pattern details of it are not infrequent in textiles of the mid-1800's. (Figure F.)

**8. GERMANTOWN YARN.** This commercially made weaving material reached the Southwest in the period of 1875-80 and in the next 25-30 years was used a great deal by the Navaho. It is usually 4-ply and has a rather dull look when compared with the silky sheen of Saxony. The 3-ply variety sometimes found is also larger and duller than Saxony.

The other great difference is in color. Saxony was dyed with natural dyes, almost always red. Germantown is dyed with aniline (chemical) dyes in a wide variety of bright harsh shades which often fade. The natural dyes, cochineal or madder red, indigo blue and others rarely seen do not fade. To detect fading make a tight fold of any yarn section and look into the spaces between the threads. If the yarn has faded the original colors will be seen.

In weaving, yarn often becomes untwisted so that the regular corkscrew twist tends to disappear (Figure E). But it usually maintains its twist along the edges of the fabric and should be examined there in doubtful cases (Figure E).

**9. CARPET YARN.** This is a coarse, 4-ply yarn notably harsh and wiry to the touch, which was used by the Navaho for a brief period around 1900. Only a few rugs seem to have been woven with it. Page 191 of reference 1 gives more facts about it.

**10. WOOL STRIPS** torn from bolt cloth were excessively rarely used by the Navaho. One recorded blanket is made entirely of this by the Navaho, and a few others show narrow bands. Recognition is simple because the strips, perhaps one-half inch wide, are clearly visible and resemble nothing else.

**11. COMBINED MATERIALS.** Pale colors, almost always various shades of pink, were made by carding together white native wool with red dyed wool. The separate white and red fibers can easily be seen with a magnifying glass. Without chemical analysis it is impossible to say whether these red fibers are from native dyed wool, commercial yarns or ravelings.

**12. PROBLEMS.** Now and then one sees red threads which give every appearance of being handspun in blankets which antedate aniline dyes. This suggests that the Navaho used imported cochineal themselves, or that the local trader dyed the wool for them. The authorities do not mention this practice, but there is this tentative evidence of it.

A blanket in the Denver Art Museum shows sections of material which appears by every standard to be Germantown, yet it is dyed blue with indigo. Germantown is supposedly always aniline dyed. Is this true, or was Germantown available in pre-aniline times?

These questions and others for which there is not space need answers which may be found in chemical analysis of dyes and microscopic study of wool fibers.

Compiled by F. H. Douglas from the examination of the great collections and from the following sources:

UNIVERSITY OF NEW MEXICO PRESS

1. Navajo Weaving; Its Technic and History—Charles A. Amsden, 2nd edition, 1949. Plate 65 is important.

A. C. McCLURG AND COMPANY

2. Indian Blankets and Their Makers—George W. James, 1920. Chapter 4 good for history and manufacture of bayeta in England.

LABORATORY OF ANTHROPOLOGY, SANTA FE

3. Navajo Textile Arts—H. P. Mera, 1948.

SAN VICENTE FOUNDATION, SANTA FE

4. Southwestern Textiles in the Barton Collection—H. P. Mera, 1949.

MUSEUM OF NORTHERN ARIZONA, FLAGSTAFF

5. The Arts and Crafts of the Hopi Indians—M-R. F. Colton. Museum Notes 11;1, 1938.

BUREAU OF AMERICAN ETHNOLOGY

6. The Pima Indians—Frank Russell. Annual Report for 1904-5, 1908. Pages 148-153 are concerned with weaving.

UNIVERSITY OF NEW MEXICO

7. Symposium on Prehistoric Agriculture, pp. 51-64, Bulletin 296, 1936.

The pins shown in the plates are 1 inch long and were used to give an idea of the original size of material. In some photos the weft has been pulled apart to show the material to a greater advantage.