

AN ABSTRACT OF THE THESIS OF

----- Carlene Rose ----- for the M S ----- in Clothing & Textiles
----- (Name) ----- (Degree) ----- (Major) -----

Date Thesis presented July 1946 -----

Title Development and Use of Fibers, Weaves, Designs, and
Colors in Mexican Textiles

Abstract Approved -----

(Major Professor)

This study was made to give a picture of the textile crafts in Mexico as they have developed over a period of time. The writer reviewed the written work available, examined older pieces of textiles, and made comparisons with the newer weaving.

The author gathered information at the Los Angeles Library and then traveled about three-thousand miles by car through Mexico, visiting factories and observing the dress of the natives. A Spanish-English speaking guide acted as interpreter so factory owners in the smaller villages could be interviewed. Museums and Libraries in Los Angeles supplied a great deal of information and permitted the writer to closely examine old garments and pieces of textiles from collections. Buyers at Padua Hills, textile designers and weavers in Laguna Beach, and teachers of Americanization were contacted to supply background material.

The first two chapters of the thesis take up the introduction and historical aspects of the study. Chapter three is divided into four parts, and the processes are discussed in the order followed in developing fibers into textiles. Part one covers the sources and preparation of the fibers. Part two takes up the types of weaves used and the looms on which these weaves are made. Part three discusses the sources of dyes and the methods used in dyeing. Part four treats the designs found in the textiles. Chapter five relates the uses of these textiles to the life of the Mexican Indian. Chapter six includes summaries, conclusions, and recommendations. Photographs, samples, and tracings are used to illustrate the written descriptions.

Textiles found in shops in the United States and sold as examples of Mexican art are not seen in the rural areas of Mexico, and only a small amount is shown in those Mexican stores frequented by American tourists. The weaving of lovely zarapes, huipils, belts, and other garments is being discontinued, and attention is turning to supplying the foreign market with the souvenir type of textiles. Interest is shown in preserving the older pieces and in encouraging the natives to continue weaving their older designs.

The techniques used in producing the textiles which have survived for centuries are still practiced in some areas. In other regions mechanical developments have replaced handcraft methods.

There is an abundance of fiber-producing plants in the country, but the lack of capital and labor has prevented development. Commercial dyes are replacing the native dyes except in garments woven by the Indians for their own use.

The picturesque costumes of many areas are being replaced by garments made of commercially woven cloth and styled in the manner of those worn in the United States.

People of the United States are becoming acquainted with the Mexican people and are awakening to the beauties of their crafts. Archaeologists are excavating some of the old tombs, and social anthropologists realize the wealth of material available in Mexico. There is an unlimited amount of work yet to be done, and care is being taken that no piece of material which may be of value will be destroyed. After the wholesale destruction of valuable findings during early excavations we are now searching out fragments of the older pieces so that the customs of the diminishing tribes of Indians may be studied. To anyone interested in such textiles the writer hopes this study will prove valuable.

DEVELOPMENT AND USE
OF FIBERS, WEAVES, DESIGNS,
AND COLORS IN MEXICAN TEXTILES

by

CARLENE ROSE

A THESIS


submitted to the
OREGON STATE COLLEGE

in partial fulfillment of
the requirements for the
degree of


MASTER OF SCIENCE

June 1947


APPROVED:




Professor of Clothing and Textiles
In Charge of Major



Head of Department of Clothing and Textiles



Chairman of School Graduate Committee



Chairman of State College Graduate Council

ACKNOWLEDGMENT

The writer owes a debt of gratitude to Miss Dorothy Gatton, Associate Professor of Clothing, Textiles, and Related Arts, for her constructive criticism and helpful direction given in the preparation of this thesis.

Due acknowledgment is made to Mrs. Julia Ann Hyde, who made it possible for the writer to travel through areas in Mexico where much of the textile work is being done.

Appreciation is also given to Senor Horatio Edgar for acting as interpreter and making it possible for the writer to visit factories and interview factory owners.

The writer also wishes to thank Mr. and Mrs. Donald Cordry and the Southwest Museum for granting the author permission to use illustrations from books written by Mr. and Mrs. Cordry and published by the museum and for allowing the author the privilege of examining textiles in the museum.

TABLE OF CONTENTS

| CHAPTER | | page |
|---------|--|------|
| I | Purpose of the Study | 1 |
| | Source of Material | 1 |
| | Limitation of Study | 2 |
| II | Historical Background | 4 |
| | Organization of Study | 5 |
| III | Preparation of Basic Fiber | 10 |
| | Preparation of Fiber for Weaving | 13 |
| | Spinning Yarn | 16 |
| | Types of Looms | 21 |
| | Setting Up the Loom and Weaving | 31 |
| | Weaves | 41 |
| | Dyeing | 52 |
| | Design | 60 |
| IV | Textile Uses | 91 |
| V | Summary | 138 |
| | Conclusions | 142 |
| | Recommendations | 144 |
| | Bibliography | 145 |

LIST OF FIGURES

| Figure | Page |
|--|------|
| 1. Carding bow | 16 |
| 2. Holding spindle | 18 |
| 3. Spindle-whorls | 18 |
| 4. Mixe loom | 24 |
| 5. Warping frame | 33 |
| 6. Corazon tied warps | 36 |
| 7. Removing yarn from warping frame | 37 |
| 8. Rolling-stick and cloth-beam in place | 37 |
| 9. Warp-beam on warp-yarns | 38 |
| 10. String spiraled over warp-beam | 38 |
| 11. Rolling-stick removed | 39 |
| 12. Renque weave | 49 |
| 13. Lace weave | 50 |

LIST OF PLATES

| Plates | Page |
|--|------|
| I Map of Mexico | 7 |
| II Sisal factory in Yucatan | 9 |
| III Early silk damask from Spain | 11 |
| IV Agave plant | 12 |
| V Spinning fiber with a spindle and spindle- whorl | 17 |
| VI Zoque loom | 20 |
| VII Aztec weaver | 22 |
| VIII Weaving in Yucatan | 23 |
| IX Oaxaca tray cloth and napkins | 27 |
| X Oaxaca weaving | 28 |
| XI Skirt loom | 30 |
| XII Changing thread from winding-frame to warp- ing frame | 32 |
| XIII Boiling thread in maize water | 34 |
| XIV Drying thread after maize water bath | 35 |
| XV Hand-woven material from Puebla | 40 |
| XVI Tarascan woman weaving rebozo | 42 |
| XVII Huichol woman weaving bag | 43 |
| XVIII A piece of old huipil design | 45 |
| XIX Zoque loom with renque weave | 47 |
| XX Aztec loom with lacey-type weave | 48 |
| XXI Root used for dye | 55 |

| Plate | | Page |
|---------|---|------|
| XXII | Beadwork design | 58 |
| XXIII | Beadwork design | 59 |
| XXIV | Drawnwork design | 61 |
| XXV | Cross-stitch design | 62 |
| XXVI | Modern embroidered runner | 64 |
| XXVII | Modern embroidered hanging | 65 |
| XXVIII | Rebozo from the State of Puebla | 66 |
| XXIX | Drawnwork design | 68 |
| XXX | Drawnwork design | 69 |
| XXXI | Drawnwork design | 70 |
| XXXII | Drawnwork design with an inscription | 71 |
| XXXIII | Embroidery with bobbin-lace edging | 72 |
| XXXIV | Tzotzil woman with embroidered blouse | 73 |
| XXXV | Panel with designs darned in silk | 75 |
| XXXVI | Huipil designs | 76 |
| XXXVII | Zarape made by Chimayo Indians | 78 |
| XXXVIII | Old Oaxaca zarape | 80 |
| XXXIX | Old Oaxaca zarape | 81 |
| XL | Jalisco zarape | 82 |
| XLI | Hand painted Tillett Brothers fabric | 84 |
| XLII | Hand screened Tillett Brothers fabric | 85 |
| XLIII | Hand blocked fabric from Tlascala | 86 |
| XLIV | Hand blocked fabric from Tlascala | 87 |
| XLV | Material woven by Senorita Lambley | 89 |
| XLVI | Coton, a type of zarape | 92 |
| XLVII | Young girl in Yucatan with rebozo | 94 |

| Plate | page |
|---|------|
| XLVIII Young girl in Yucatan with rebozo | 95 |
| XLIX Method of donning a Zoque skirt | 97 |
| L Zoque woman with large skirt | 98 |
| LI Zoque Indians wearing different types of costumes | 99 |
| LII Otomi girl in native costume | 100 |
| LIII Details of man's costume on Tuxtla Gutier- rez | 102 |
| LIV Man's costuem in Yucatan | 103 |
| LV Decorated belts and garter trimmings | 104 |
| LVI Decoration at the end of a woman's belt . | 105 |
| LVII Decoration at the end of a man's belt . . | 106 |
| LVIII Man's shirt, Puebla | 108 |
| LIX Woman wearing a neckpiece as a head cover- ing | 109 |
| LX Zoque Indians in Tabasco wearing costumes of the older period | 110 |
| LXI Market scene in Cuetzalan | 112 |
| LXII Aztec neckpiece of lacey-type weave | 113 |
| LXIII Silk huipil from Yucatan | 114 |
| LXIV Early huipil with the design woven in . . | 116 |
| LXV Zapotec woman and child wearing huipil . . | 117 |
| LXVI Garments of the Zoque woman | 118 |
| LXVII Huipil used as a headdress | 119 |
| LXVIII Zoque woman wearing huipil to church . . . | 120 |
| LXIX Zoque woman wearing huipil to market . . . | 121 |

| Plate | | page |
|---------|--|------|
| LXX | Types of Zoque huipils of Chiapas | 123 |
| LXXI | Woven bag | 124 |
| LXXII | Modern shopping bag from Puebla | 126 |
| LXXIII | Maguey fiber bag | 127 |
| LXXIV | Ayate of maguey fiber | 128 |
| LXXV | Embroidered ayate | 129 |
| LXXVI | Ceremonial napkin and tortilla cloth | 131 |
| LXXVII | Woman's cape in Tehuantepec | 133 |
| LXXVIII | Trousers worn in Danza de los Negritos | 135 |
| LXXIX | Feathered headdress in Yucatan | 136 |
| LXXX | Theatrical costume | 137 |

DEVELOPMENT AND USE OF FIBERS,
WEAVES, DESIGNS, AND COLORS IN MEXICAN TEXTILES

CHAPTER I

PURPOSE OF THE STUDY

The purpose of this study is to present a picture of the textile crafts of Mexico. Changes in this field are rapidly taking place, and the writer has tried to record the techniques of the older cultures as well as the newer industrial developments.

SOURCE OF MATERIAL

To collect information the writer traveled by car through as much of Mexico as time allowed. She visited many textile factories and obtained information from the factory owners. A Spanish-English speaking guide was on hand at all times to act as interpreter.

Information was also collected at the Los Angeles Public Library, Los Angeles Museum, Huntington Library, and the Southwest Museum and Library. The writer spent time examining older pieces of textiles belonging to the museum together with the looms on which these pieces were woven. She also studied private collections of the older Mexican textiles and brought back illustrations of the newer work being done so that comparisons might be made.

In addition to this, the writer spent time with persons in the community who are working with the Mexican people.

There were discussions with the handcraft weavers in Laguna Beach. Some of these people are doing weaving with a contemporary feeling, using the techniques of the Central and South American countries.

Historical and archaeological books supplied background material and thus gave a greater understanding of the influence that customs and religion have had on textile development.

LIMITATIONS OF THE STUDY

The climate of Mexico is warm and damp. Most of the textiles woven before the Spanish conquest, 1521, have been destroyed. A few pieces given to Cortez by Montezuma were sent to the king of Spain and have been preserved in European Museums. As the Spanish soldiers marched west from Vera Cruz to Mexico City during the period of conquest, they looted the tombs of the Indians and carried away everything of value. A few pieces of pottery, stones, and paintings have been found in some of the tombs. Mrs. Zelia Nuttall supplies the theory that these were not pre-conquest works. After the conquest of Mexico City, Cortez marched south to conquer Honduras. With him he took several high-ranking Aztec chiefs who might instigate a rebellion if allowed to remain in Mexico. During the following expedition

they were killed, and their bodies were brought back by their servants to tombs closer to their home. This would mean that articles found later in these tombs by archaeologists were of more recent origin than they were at first thought to be (29:127). Most of the writers feel materials uncovered in later excavations date back to pre-conquest days. Some of them agree, however, that Mrs. Nuttall's deductions are founded on true logic.

Information of pre-conquest time has been found in codices in tombs which for protection were covered either by the Spaniards or by the natives. Some paintings have been found showing the dress of the period. Others show the agricultural arts, including the growing of fiber-producing plants.

A study of the textiles of Mexico necessitates an understanding of the people, religion, and climatic conditions. To cover the entire field thoroughly would mean living for long periods of time in the native villages and learning the various Indian languages and dialects. Exhaustive studies of any phase of the textile work have not been made until recently, and these are decidedly incomplete.

CHAPTER II

HISTORICAL BACKGROUND

The Mexican population includes Indians from many different tribes as well as people from other lands. Indian tribes originating in the north migrated south in the early times. As one tribe moved on, another tribe took its place. Some of the earlier cultural life was absorbed by those appearing later in the line of migration. Traces of Maya and Mixtec culture are found in the northern states; while at present the remaining members of these tribes are located in the southern state of Yucatan and in Peru.

In some cases a tribe has divided, and different characteristics have been developed by each group. The Anahuac tribe arrived from the north and broke into several factions, the most outstanding group being the Aztec. As tribes migrated, they inter-married with friendly neighboring tribes with the resultant mixture of cultures. Weaker tribes were absorbed by stronger groups which had conquered them during one of the numerous tribal wars. At the time of the Spanish invasion the Aztecs, a warlike people, had conquered most of the tribes in the central valley of Mexico. Following the conquest of Mexico by Spain there was an interweaving of Spanish and Indian beliefs and ideas.

As people from other countries settled in Mexico, their influence became evident in the crafts of the area.

The rule of Maximillian and Carlotta introduced a French influence which can be seen in Chapultapes Castle in Mexico City. Information gathered from the natives by present-day writers had already been passed on by word of mouth for generations, and many important details have been lost. Early archaeologists thought textiles to be of little importance. It has been found that much information of family life can be gathered from the study of the weaving, and greater care is now being given each available piece.

ORGANIZATION OF STUDY

Phases relating to textile work are discussed in the order in which the work is carried on. Preparation of the fiber for weaving includes obtaining the raw material and spinning the thread.

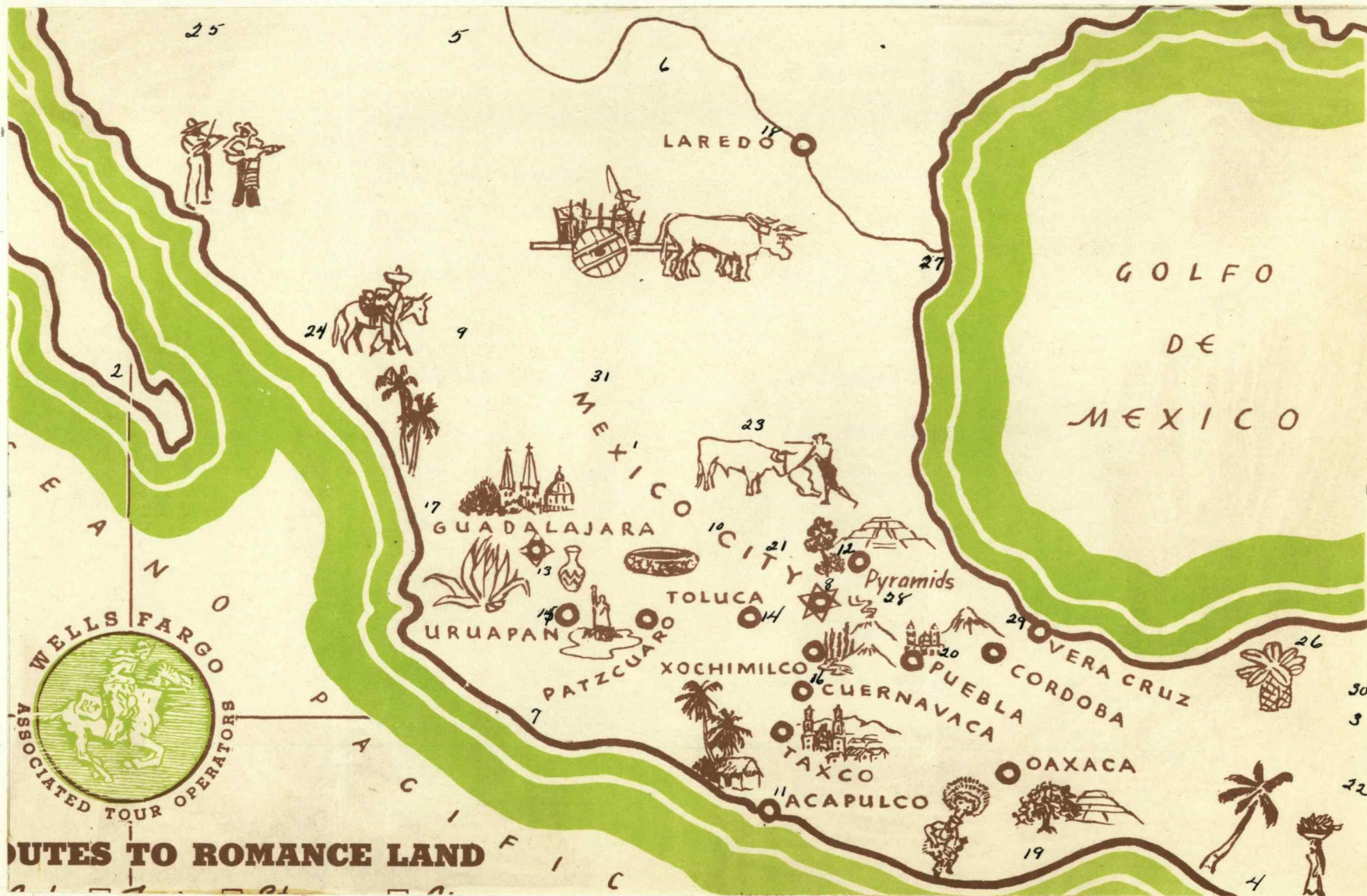
The chapter on weaving covers the types of looms, methods used in preparing the looms, and the type of weaves developed.

Under color are considered the source of dyes, the methods used in dyeing, and the use of the various hues.

Designs commonly found in various areas and the significance of these designs are covered in part four, chapter III.

Combining the textile information covered previously,

chapter IV shows the use of these woven pieces in the life of the country.



STATES IN MEXICO

Numbers correspond to those used on the map

- | | |
|---------------------|---------------------|
| 1. Aguascalientes | 17. Nayarit |
| 2. Baja California | 18. Nuevo León |
| 3. Campeche | 19. Oaxaca |
| 4. Chiapas | 20. Puebla |
| 5. Chihuahua | 21. Querétaro |
| 6. Coahuila | 22. Quintana Roo |
| 7. Colima | 23. San Luis Potosí |
| 8. Distrito Federal | 24. Sinaloa |
| 9. Durango | 25. Sonora |
| 10. Guanajuato | 26. Tabasco |
| 11. Guerrero | 27. Tamaulipas |
| 12. Hidalgo | 28. Tlaxcala |
| 13. Jalisco | 29. Veracruz |
| 14. México | 30. Yucatan |
| 15. Michoacán | 31. Zacatecas |
| 16. Morelos | |



PLATE II - Sisal or henequen factory in the
State of Yucatan.

CHAPTER III

PREPARATION OF THE BASIC FIBER

Early migrating Indians wore garments of skin (57:143) and beaten bark (57:32). The amount and the style of the clothing depended on the climate and the materials available. As a tribe settled in one area, fiber-producing plants were cultivated, and woven materials were used for clothing. The sources of fibers were the cotton plant, cotton tree, agave plant, rabbit hair, yucca plant, and grasses. The fiber from the agave plant is known in different regions as maguey, sisal hemp, henequin, pita, and apocynum. (Plate II)

Fabrics dating back to the Toltec period have been found in which a combination of cotton and apocynum fibers were used. There are also reports of some flax being produced in the city of Cuquio, Jalisco, but no reference is made to the production of linen thread for weaving.

Following the Spanish conquest wool was introduced. Present-day needs are now filled with wool grown in Mexico and some of the finer wool imported from Australia.

Imported silk was used in weaving rebozos¹ and zarapes²

¹ Rebozo - a long shawl worn by the women for a coat, hat or as an aid in carrying heavy bundles.

² Zarape - heavy wool blanket with head opening, worn by men and boys as a jacket or coat is worn in the United States. Original Nahuatl spelling "Tzalanpepechtli" - composed of "tzalan," to interweave and "pepechtli," a coarse quilted cloth used as a covering. The word had been shortened to "tzalanpech," "tzalape," and is now spelled "zarape" (38:7-35).



PLATE III - Early silk damask church cloth imported from Spain early in the nineteenth century. The design is woven into the cloth which is a soft gold color. Most elaborate church fabrics of this type were imported.



PLATE IV - Agave plant. This is the type of cactus plant from which the maguey fiber is made.

worn by the wealthier people and in vestments for the priests. Silk clerical robes continued to be imported from Spain as there were not enough silk weavers to supply the needed garments (Plate III). Mexico produces little silk. The Zapotecan village of Zoogocho, Oaxaca, and the Mazatecan village of San Andres Hildago, Oaxaca, have produced silk, but both villages have transferred their interest in textiles to the weaving of belts (18:15).

Before the second world war Mexico was importing rayon from Italy and the United States. In 1940 Japan shipped 1,000,000 pounds of rayon to Mexico in exchange for oil (33:269).

Many materials from which fibers can be made are available in Mexico, but because of the lack of labor and capital these sources have not been developed (51:304).

PREPARATION OF THE FIBER FOR WEAVING

The agave plant is grown in practically all parts of Mexico. (Plate IV) It furnishes the natives with food, beverage, soap, fiber, and material for building construction. The leaf and sap from the center of the plant are fermented to produce a wine, pulque, and the long fibers in the leaf are pounded to soften them for weaving. The finished product is at times as white as cotton, although it usually is a cream color. Some of the finer pieces woven from agave have a linen-like texture. The coarser fibers

are used in the construction of bags, hammocks, and door mats.

Cotton is grown in the warmer sections of the country and seems to be the most universally used fiber. The known types of cotton are white, brown, and cream.

In some areas cotton seeds are still removed by hand (45:227). Great care is taken to handle the cotton gently so the fibers will not be broken. This is a very slow process, but the Indians are patient and continue this ancient method. The hand process for preparing cotton seems to be about the same in all parts of the country.

The cotton fiber is beaten free of the seeds with a long pliable switch, the process being finished with the fingers. The cotton may have been "carded" by picking it up on the string of a small bow. When plucked, the vibrating string picked up a number of fibers which were taken off between the fingers and laid aside. The thread was spun on a wooden spindle (hikuri) with a wooden spinning whorl, the end of the spindle resting on the ground or in a fragment of broken pottery. The spun thread was wound on the spindle. It was later wound into balls, or if it was to be dyed, formed into skeins (8:28-29).

Frederick Starr reports a similar method used by women in San Juan Zautla, Chinantla, to prepare cotton for spinning. The women sit with a large cushion of moss in a bag of matting on the ground before them. Over this is spread a deerskin, on which is placed the raw cotton. The cotton is briskly beaten with a beater made of five or six divergent sticks fastened together at one end and called a

mapaho. One stick is held in each hand, and the beating is done alternately. The cotton is beaten until it is spread over the skin in a thin layer. From this stage it is spun into thread (54:202). Other reports tell of the cotton's being beaten into strips six inches wide. These strips are then wound into balls, and from them the cotton is spun (17:106).

Wool is prepared in much the same way.

.....a small hide is placed in a convenient place on the ground, with something beneath its center to raise it a few inches from the ground. The wool is, of course, previously washed and now placed in the center of the hide. The operator - a woman - takes a kneeling posture and proceeds to thrash the wool with a long, well-seasoned stick, strong and slightly larger in the center than the ends.

With each measured stroke the stick is brought low by the right hand while the left hand is brought in contact with the wool, the thumb and finger encircling the stick, which is withdrawn through the left hand, thus preventing the wool from scattering during the thrashing process. It is a slow process, but these patient people are equal to the task and the wool is brought into the same condition as if prepared by machinery (45:27).

Other accounts relate how wool is first washed in boiling water then dried after which it is beaten to fluff the fiber, then carded or combed with fine tooth cards made of rectangular pieces of wood with small iron teeth. Carding converts the wool into a ball, from which it is spun into yarn (38:22).

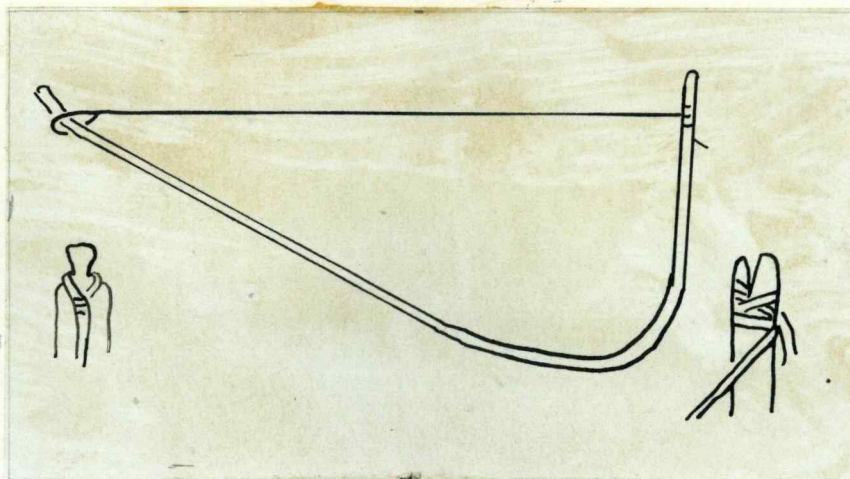


Figure 1. Carding bow.

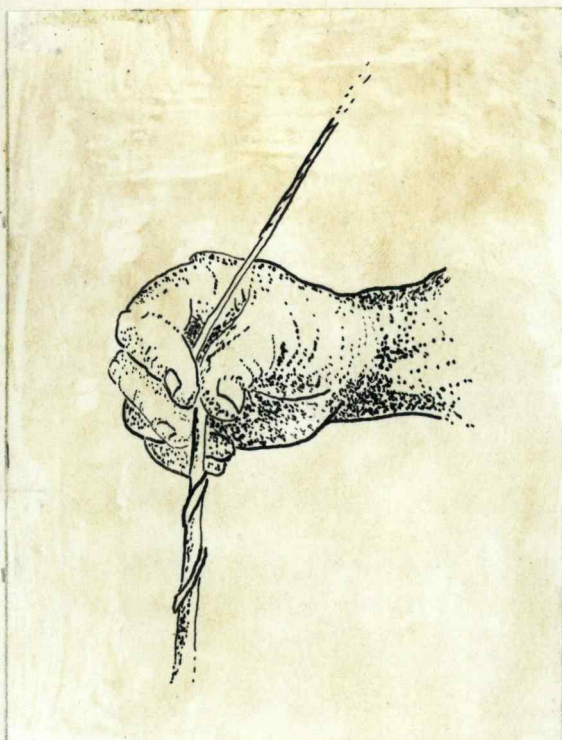
Carding bows were commonly used for both wool and cotton. The string attached to the bow was snapped into the beaten fibers. The fibers clinging to the bow string were then removed by hand and spun into thread. The roving produced in this way was fine and even, provided an even tension was exerted on the bow.

SPINNING THE YARN

Earliest records show the spinning done on a hand spindle. In many parts of the country it is still being carried on in the same way. The spindles are usually about twelve to eighteen inches long, one-half inch in diameter, and tapered at each end. One end of the spindle is forced into a spindle-whorl, or malacate, which is then held in a gourd or piece of pottery and allowed to "dance"



PLATE V - Spinning cotton with a spindle and spindle-whorl. A gourd is used as a saucer to hold the spindle in place.



as the woman spins. As the top of the spindle is held and turned with the right hand, the left hand guides the yarn and allows it to feed onto the spindle.

(Fig. 2) (Plate V) When the spinner becomes adept, the thread produced is very fine and even. This process in the textile work is car-

ried on by women. In some areas women walk along the road with the carded roving attached to the left wrist and, with the right hand, continue to spin.

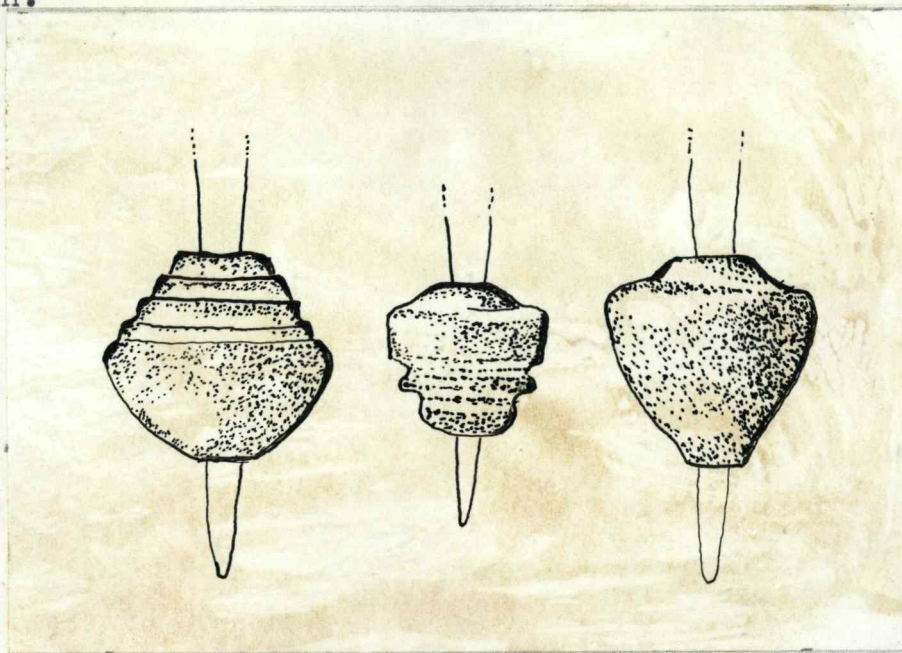


Figure 3. Spindle-whorls.

Spindle-whorls may be made of wood, clay, stone, or bone. In the State of Morelos, where some of the spinners are still practicing their art, spindle-whorls can be easily found. At times old whorls are fitted over new spindles and sold on the market (48:200). Some of the early spindle-whorls were elaborately carved or, if made of clay, were pressed into interesting designs. The spindle-whorls the writer saw were made of wood or stone. Some of these fit over the spindles so firmly they seemed to be carved from the same piece of wood.

The saucers in which the spindle turns are at times made of a decorated clay or stone and become very attractive pieces of household equipment.

Some of the Indians are now using spinning wheels similar to those used in America during the early years.

Toward the end of the nineteenth century the first large textile mills were established, and weavers began to use commercially-made thread (55:25). Most of the yarn used today is spun in the large spinning mills and sold to the weavers in their native villages. The hand-spun yarns are now used in weaving textiles for the weavers' families. Weavers in some areas where cotton is produced must buy commercially-spun thread because all of the raw material has been shipped away. Where a small amount of hand-spun thread is available, it is combined with commercial thread

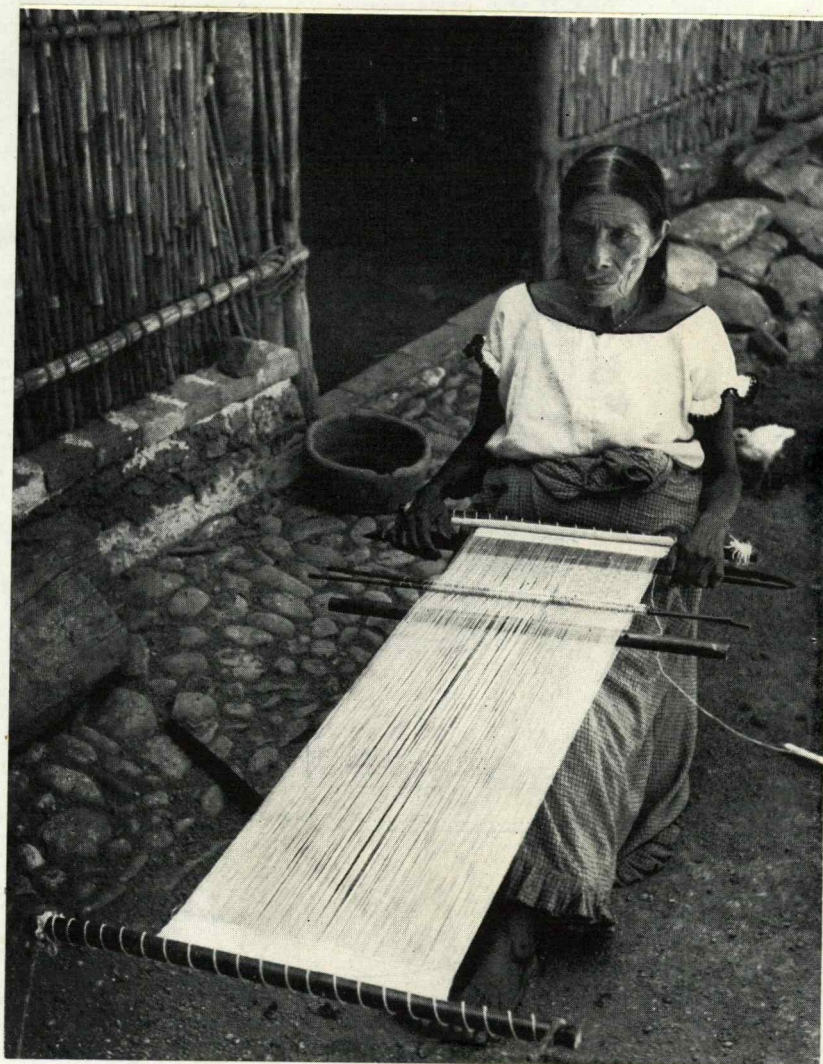


PLATE VI - A Zoque loom in Tuxtla Gutiérrez.

to produce a larger amount of fabric of the desired quality (18:103).

TYPES OF LOOMS

Just when the Indians of Mexico began to weave was a debatable question until 1928. In that year well-preserved samples of woven cotton goods were discovered in a cave. The pottery in the cave indicated that the cloth dated from the time of the "Old Empire," about the fifteenth century (43:160).

Weaving is thought by some writers to have been started by the first Mexican Indians, Archaic, three to ten thousand years ago (55:24). Early Spanish authorities say the members of the Maya tribe were the best weavers (61:92). Hewitt says the Zapotecs and Mixtecs were superior to the Aztecs and were among the best weavers of Mexico (29:330-331).

Twined weaving is thought to be the earliest form of the art. Filling threads were crossed between warp threads to hold the warps together in making mats and nets. Usually coarse reeds and grasses were used as warps. This type of weaving was found very early along the coastal areas (59:201).

Before the arrival of the Spaniards all weaving was done on a telar de otate (or telar de atare), horizontal loom. This simple type of loom is still used in the weaving of belts. The weaver attaches the warp beam to a tree or post on the open porch. (Plate VI) The cloth beam is



PLATE VII - Aztec woman of Puebla
weaving a wool skirt.



PLATE VIII - Girl weaving on a horizontal
loom in the State of Yucatan.

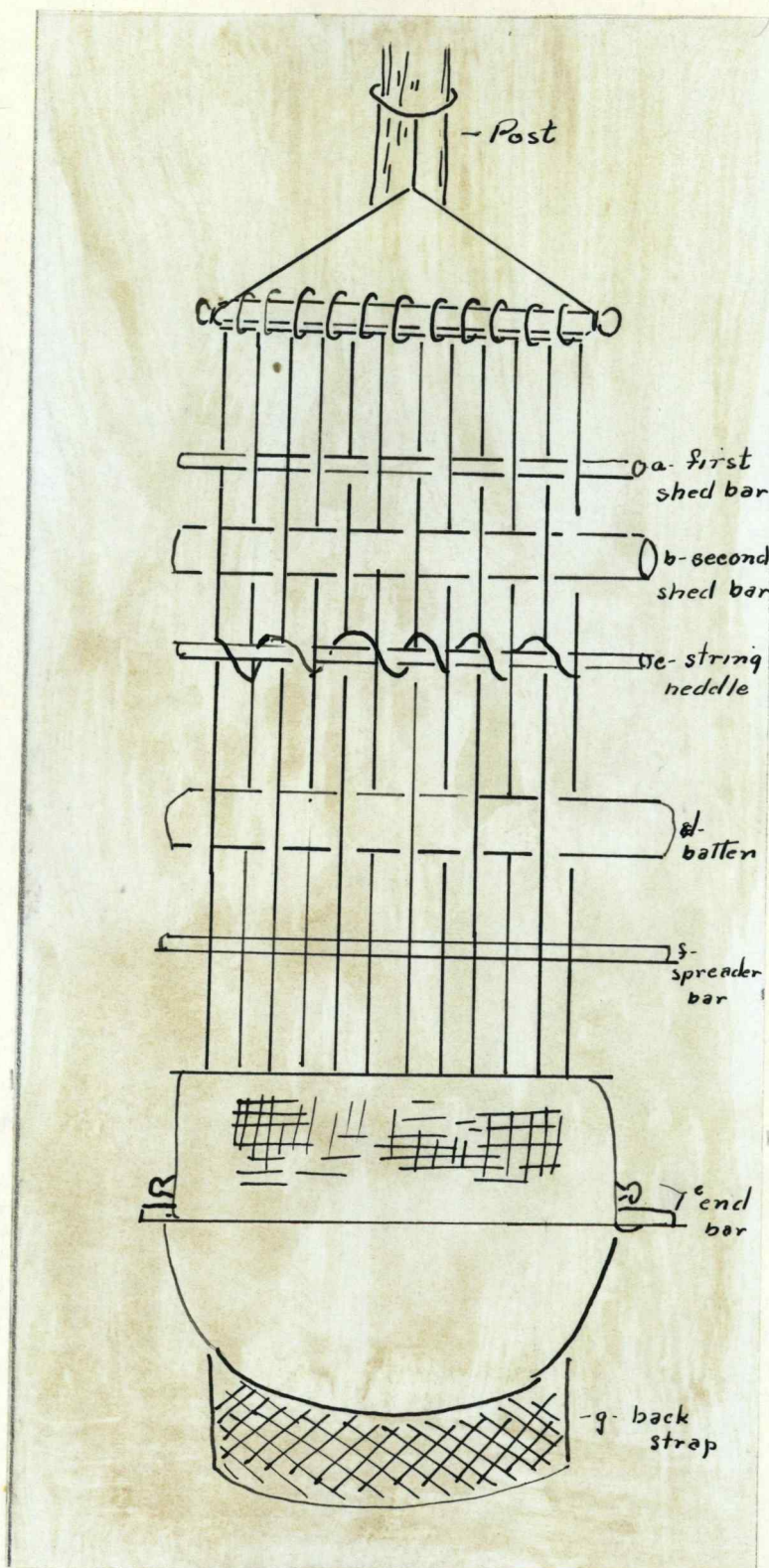


Figure 4. Early Mixe loom.

attached to a wider band woven of maguey fiber or some heavier material and fits around the waist of the weaver, who then squats or sits on a petate mat on the ground and gradually moves toward the warp beam as the weaving progresses. The woven material is wound and pinned with thorns to prevent raveling as weaving is continued. Swords made of hard, well-polished wood are used to batten the weft. These swords are used for years and become more highly polished with continued use. Heddles are made by winding threads around a slender stick slightly longer than the width of the finished material. One heddle is lifted at a time to produce a shed through which the bobbin is put. Some codices show weaving being done on looms with one heddle (55:25). Weavers had to be expert to produce the complicated patterns with equipment as simple as this. Measuring sticks were used to keep the material an even width. (Plate VII) (Plate VIII)

The early Mixe loom differs slightly from this other type. There were two shed bars in addition to the heddle. The enclosed sketch illustrates the parts of the Mixe loom (11:116). (Figure 4)

• Early Cahita Indians used a type of loom which the writer did not find associated with any other tribe. This tribe, however, is doing no weaving today.

The loom is of special interest being one of the few instances of a wide loom in America. A circular warp, but not a continuous thread warp

(i.e. each warp was independent, not spiraled about the yarn beam), was employed, passing about two cross bars. The bars were on opposite (outer) sides of two parallel pairs of posts set in the ground, the loom thus being horizontal. The working front of the fabric was kept in proper position by sliding the warp about the loom or yarn beam as the weaving progressed, the weaver sitting on the ground before one side, which was slightly lower. One shed was created by inserting a light warp rod between alternate warp threads, and additional sheds were made by the use of string heddles. A flat batten with rounded ends, made of polished mesquite heartwood, was used to spread the sheds further and to hammer down the weft threads. Wefts were wound figure-eight fashion on a shuttle, a light stick about sixteen inches long. Uniform width of the fabric was insured by a spreader immediately behind the working edge to which the fabric was pinned by mesquite thorns (8:28).

The Spaniards introduced the upright loom, which is the type most used in present-day weaving. It is usually operated by men although the writer saw several women working at such looms in Guadalajara. Looms are generally set up in pairs as the Mexican likes to have company while he is working. Factories which do weaving for commercial use have several of these looms set up under open porches surrounding a patio where the rest of the processes are carried out. Other factories the writer has seen have varying numbers of looms set up in small, dark, windowless rooms. No matter how small a factory may be, there is always a small shrine for the goddess of weaving, Xachiquetzal. Bouquets are placed on the tiny altar beside the statue or picture of the statue, and during festival times crepe-paper decorations are added.

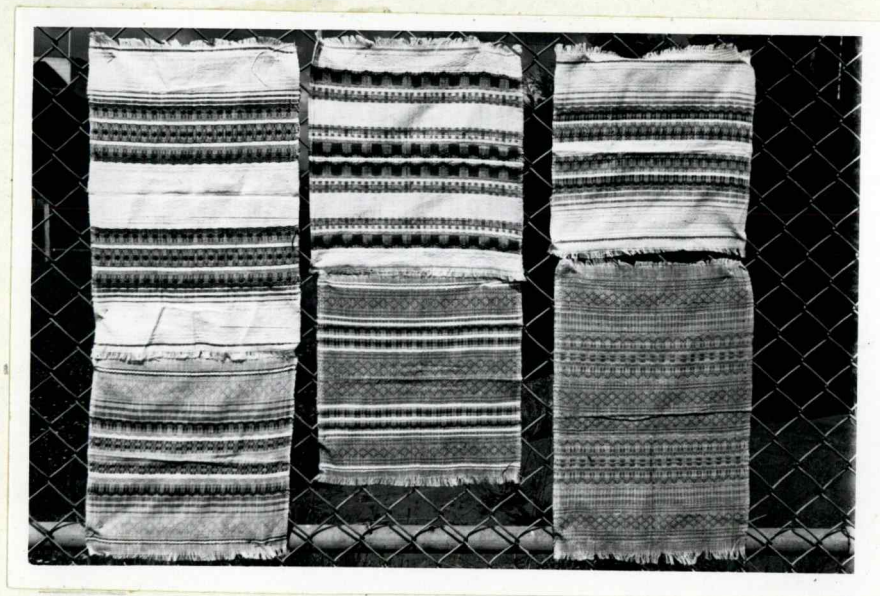


PLATE IX - Oaxaca tray cloths and napkins.
Various pattern weaves have been used.
This is modern work and is sold in shops
in the United States.



PLATE X - Hand-woven Oaxaca type material. This piece was purchased in the State of Puebla from a weaver who had moved from Oaxaca.

In the State of Puebla the writer visited a factory which had moved from the State of Oaxaca. Table covers and napkins, the same style produced in Oaxaca, were being woven. (Plate IX) (Plate X) There were nine, hand-made upright looms in a small room. The boys, ranging in age from nineteen to twenty-three, had come with the owner when the factory moved. Weaving is done on these looms in the same manner in which it is done on hand looms in the United States. The operator sits in front of the loom and operates the heddles with his feet. Heddles are made with wood frames, tied together at the corners with strings. Strings are then run between the upper and lower bars of the heddle frame. In the center of each string is a loop through which the warp thread is put. Battens are made of metal similar to those of the hand looms in this country. Corners of the looms are pegged or securely tied with rope. Bobbins are about the size of an ordinary crayon. When the weaver is ready to use a certain color, the bobbin is placed in a shuttle made by hollowing out a piece of wood in the same manner as a small boy makes a boat. When the shuttle is to be sent through the shed, a string attached to a block of wood behind the shuttle is pulled, and the shuttle is forced through the shed in the manner of a catapult. Each added weft thread involves a hand motion and a foot motion. The design is worked out in color on paper



PLATE XI - Setting up a skirt loom.

and tacked to the front of the loom. When a fringe is to be added to the sides of the woven material, the weft thread is run over an additional warp thread about two inches from the edge of the finished material.

Hand looms in other parts of Mexico were of the same construction. Senorita Esperanza Casterllanos Lambley, who controls about three hundred looms in Guadalajara, has had looms built under her direction making improvements when necessary.

SETTING UP THE LOOM AND WEAVING

The process of setting up the looms is considered more difficult than the actual weaving, and many weavers never master it. (Plate XI) The writer saw several of the methods used in preparing the yarn for warping. In the State of Puebla she witnessed the process of measuring the warps and skeining them before they were threaded on the loom. Six spindles were placed on pins on a small stool-like rack. The skeining rack was about six feet high with a pole forked at the bottom to steady it running up its center. Six spokes each about two feet long radiated from this pole at the top, and another six radiated in like manner about eighteen inches from the bottom. Another strip of wood connected the ends of the top set of spokes with the bottom set. As the rack was turned on the center shaft, the thread



PLATE XII - Changing the thread from the winding-frame to the warping-frame. This is similar to the winding-frame seen by the writer in Puebla.

from the spindles was fed around the rack.

Skeins of warp thread to be used on the horizontal loom are first strung on a warping frame. (Plate XII) The

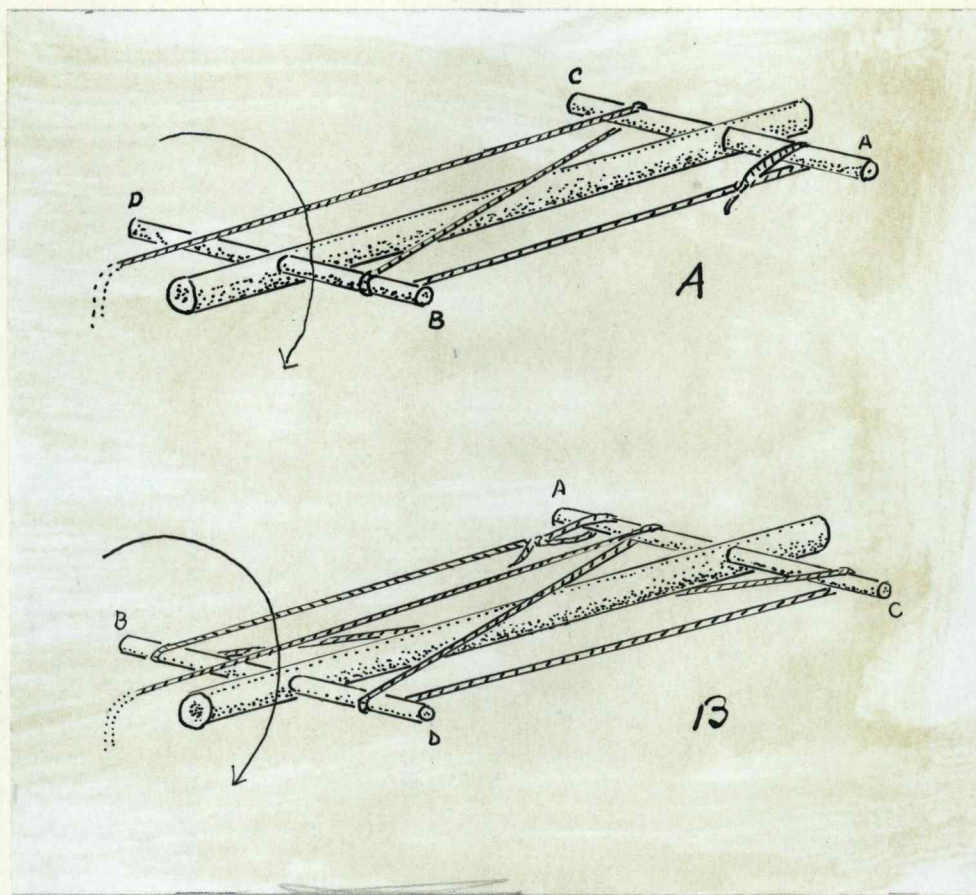


Figure 5. Warping frame.

type of frame described is used by the Zoque Indians in Tuxtla Gutiérrez. A long pole is used with crossbars separated by half the length of the finished warps, as shown in Figure 5. The warp is then tied to one crossbar at a. It passes under b, under c, and over d. The rack is then turned over, and the winding continues in the same

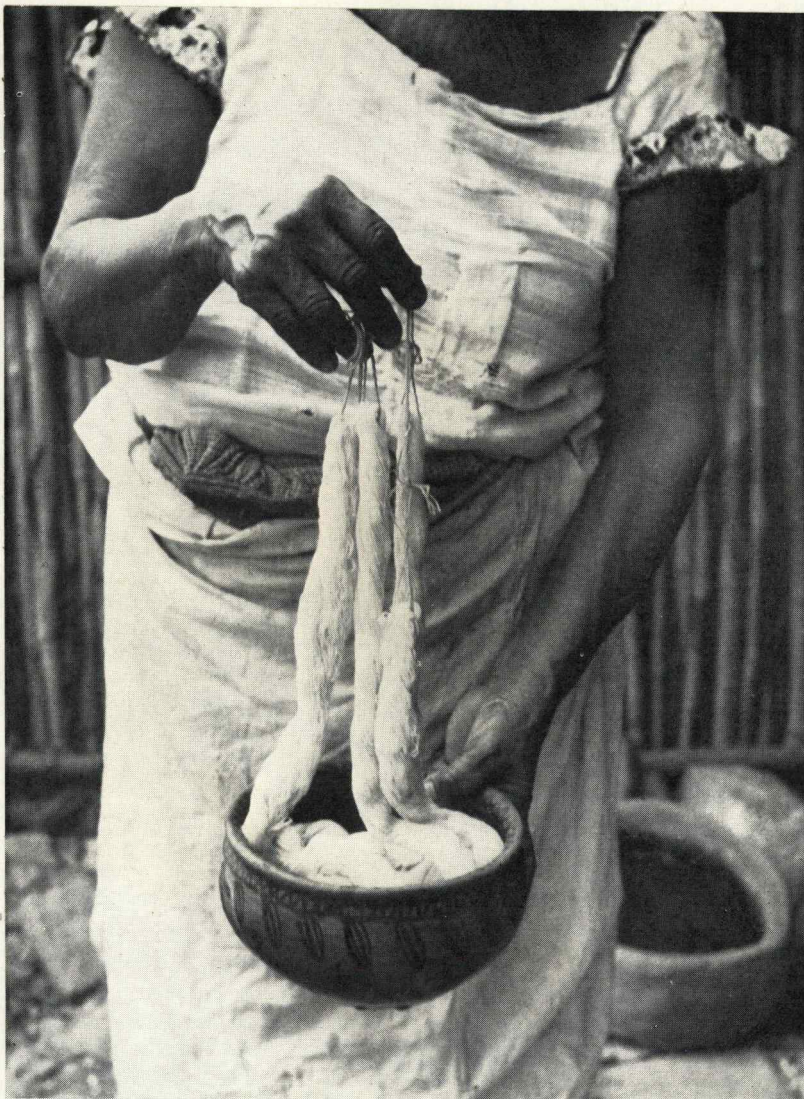
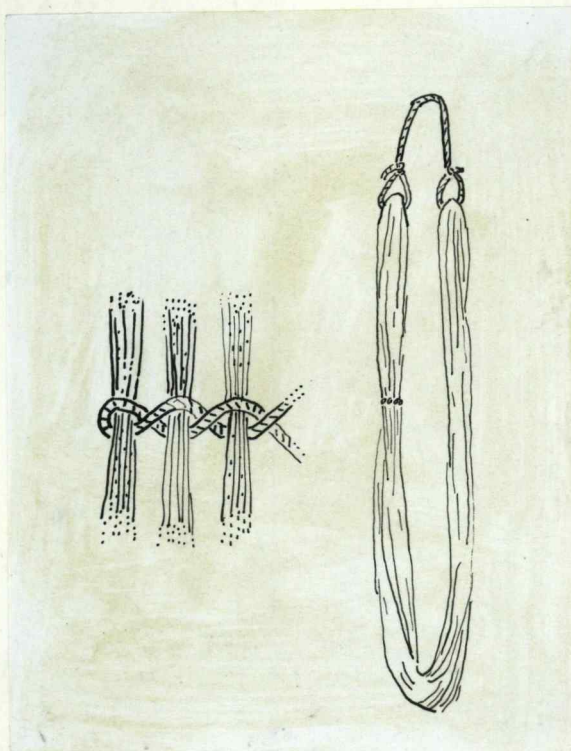


PLATE XIII - Threads to be used in weaving a huipil are boiled in maize water to give them strength and make them easier to handle.



PLATE XIV - Two sets of warp threads
drying after their bath in maize
water.

manner as in B. The third step is returning the rack to its original position and continuing winding. When the required number of warp threads have been wound (200 lengths), they are tied off in groups of forty. The tied part, corazon, prevents the upper and lower threads from crossing. (Figure 6) Other threads are slipped through the warps at a and c,



and the warps threads are slipped off the frame.

(Figure 7) The handspun yarn is then boiled in a solution of corn and water to prevent the threads from breaking and to facilitate handling. (Plate XIII) After the thread has been brought to a boil three times, it is removed and hung up to dry about ten

Figure 6. Corazon tied warps. or fifteen minutes, after which it is ready for the loom. (Plate XIV) The cloth-beam is put through loop a and the rolling-stick through loop c. A cord is fastened to each end of the cloth-beam and securely tied to a post where the weaving is to be done. Next, strings are tied to the ends of the rolling-stick and fastened to the metate which fits around the

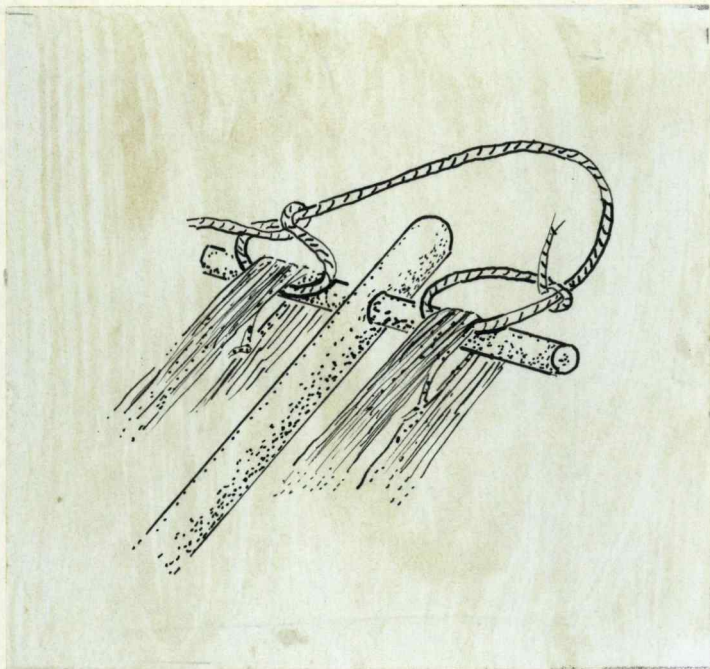


Figure 7. Removing yarn from warping frame.

weaver's waist or hips. A shed-stick is put between the warps. In some instances a string is tied around one set of warps to prevent tangling in case the shed-stick falls out. Then the corazon is cut. The threads are now spread along the rolling-stick, and a measuring stick is

used to gauge the finished width of the material. The threads are placed in bunches about an inch apart in preparation for transferring them to the warp-beam. The

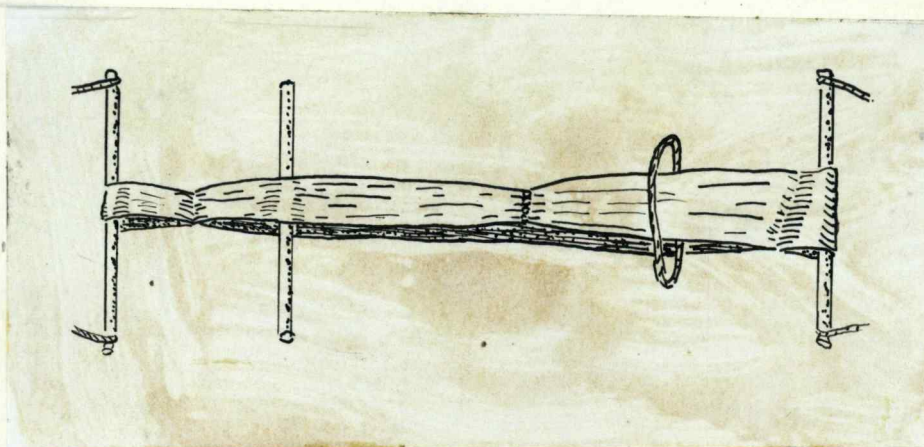


Figure 8. Rolling-stick and cloth-beam in place.

warp-beam is now placed on top of the warps, just above the rolling stick. A string of hemp is tied to the end of the warp-beam at the weaver's left, passed through the shed, and looped over the right end of the warp-beam. (Figure 9)

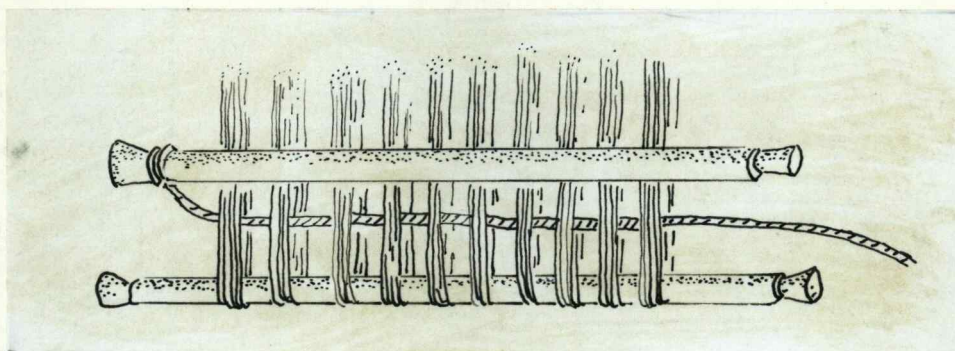


Figure 9. Warp-beam placed on top of warp yarns.

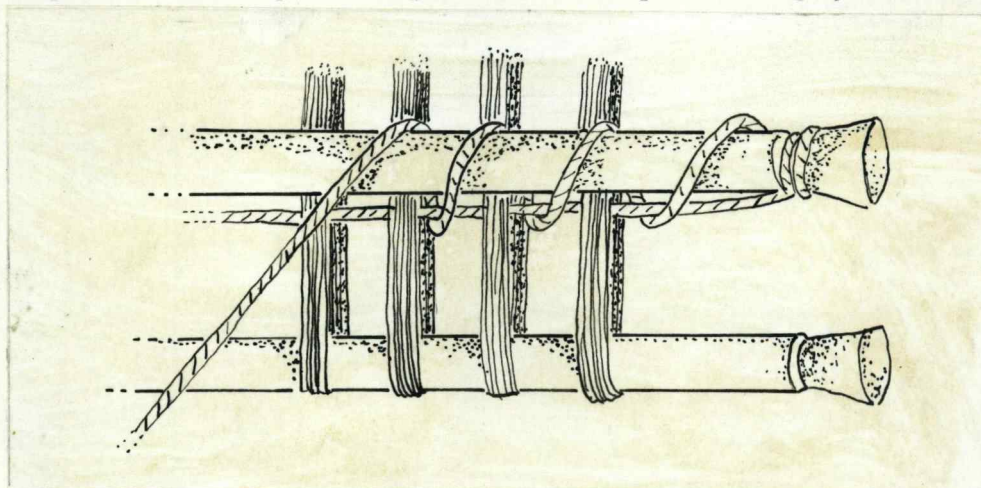


Figure 10. String spiraled over warp-beam and warp threads.

The string being worked from right to left is then spiraled over the warp-beam and upper warp threads. (Figure 10)

This string is wound under the string first put through the shed, but care is taken not to catch the lower set of warp threads. Strings on the end of the rolling-stick are now transferred to the ends of the warp-beam. (Figure 11)

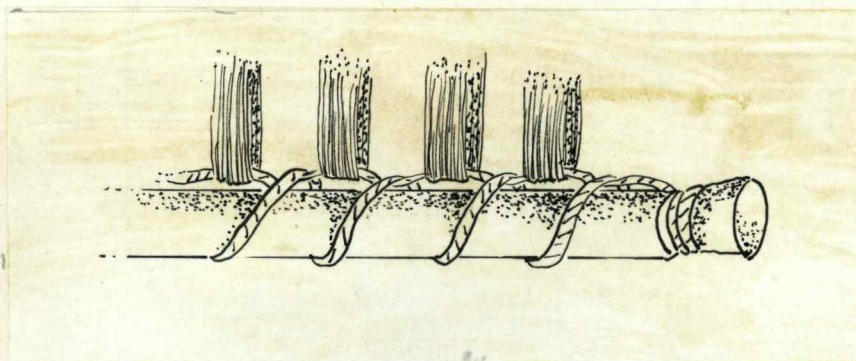


Figure 11. Rolling-stick removed. Warp in on warp-beam.

The warp threads are now separated with the aid of a maguey thorn. Heddles - long, slender rods - are now inserted. A string is put through the shed from right to left, the end being looped around the heddle-rod at the left side of the loom. The weaver then puts her finger down between the first and third warps, grasps the string, makes a loop, and slips the heddle-rod through the loop. This continues on alternate warps until the heddle-rod reaches the right side of the warps. The loom is now ready so that when alternate heddles are raised the shed for the weft thread will be formed. A piece of plain weaving is now started near the warp-beam. When this is completed the weaver starts to weave. At the end of the piece, when the original short length of weaving is reached, the batten can no longer be used. Very slender sticks are then employed to feed the thread through the shed, and some weavers even work in the last few threads with needles. Combs force the weft threads together. When the fabric is worn, it may



PLATE XV - Hand-woven material made by the Indians in the State of Puebla and bought in an open market.

show a tendency to loosen in this area (18:110-121).

In the State of Michoacan the writer saw a loom being wound in preparation for weaving yard goods. One boy slowly turned the warp-beam, while another guided the warps as they fed through the batten. At the other end of the warp threads were four boys in single file, each one holding the threads as tightly as possible and bracing himself with his feet to produce an even tension. As the warps became shorter and the first boy came to within fifteen feet of the loom, winding stopped, and the first boy took his turn again at the end of the line. The warp seemed to be of very even tension, and materials woven on these looms had no tendency to curl. The piece of material shown on page 40 was bought in the native market at Jatzingo and was woven on a vertical loom of this type. (Plate XV)

WEAVES

Most ancient weaving was warp faced (6:3). The majority of the fabrics the writer has seen are of a plain weave or a variation of the plain weave. Some sections of Mexico have developed a weave which is found in no other area, but the majority of the textiles are quite similar.

Zarapes are made with the interlocking tapestry weave. The weft thread for the background is wound on large bobbins, while small bobbins carry the colors for the design.



PLATE XVI - Tarascan woman of Michoacán
weaving a robozo on a horizontal loom.



PLATE XVII - Huichol Indian woman of
La Mesa, Nayarit, weaving a woolen
bag on a loom of pre-conquest type.

The open tapestry weave, like the kossu weave of the Chinese, is not found in the Zarape. With the exception of zarapes from Saltillo, where a cotton warp thread is used, the zarape is woven with woolen threads. They are woven by the men in the same manner as they have been for several hundred years.

Since rebozos have not been so popular with the tourist trade, they have changed little during the same period. Throughout Mexico at the present time there is little variation in the woman's rebozo. Warp threads are of cotton, and filling threads are of cotton or cotton and rayon. A slight crosswise rib is formed by the use of heavy or double-weft threads.

In Uruapan a slightly different type of rebozo is woven. A bright blue, quarter-inch rayon stripe is added in the warp. The threads are placed on spools above the loom frame and are fed through the batten during the weaving process. In some places these striped rebozos are also woven on horizontal looms with the striped warp threads attached to the warp beam. (Plate XVI)

The Aztec and Otomi Indians wove many bags, some of them with complicated designs. These were done on horizontal looms. (Plate XVII) Cotton or wool warps were used with a double-faced warp design of wool. Cotton filling threads were also used. When the wool warp threads were to



PLATE XVIII - A piece of an old huipil showing heavier yarn used to work design into very sheer material. Bands of renque weave are used between the design motifs.

appear in the design, they were allowed to float on the face of the material, while cotton weft threads formed a backing for the design. The woolen yarns were then brought to the back of the fabric as the cotton wefts appeared on the face. The materials were thus reversible. As the woolen yarns were often loosely spun, they wore off the surface with constant use. This method of weaving is used today in making belts. In this case a closely woven edge is used to give the belt strength.

In all the pieces of material examined and in all the references read by the writer there was but one example of twill weave. A black wool skirt, made by the Mixtec Indians and purchased in San Maria Juquia, Oaxaca, was found in the Southwest Museum.

Many examples were found of huipils woven in a lightweight, loosely-woven material in which a heavier thread was added to form a design. (Plate XVIII) This was similar to the swivel weave found in modern textiles. Because of the looseness of the weave, the added design did not disturb the weft threads. Designs of this sort were used in bands across the material. Alternating bands of plain weave were used with these heavier stripes or with bands of renque weave. All of these pieces were monochromatic and usually pale blue in color. The designs were conventionalized flowers, figures, and animals.



PLATE XIX - A Zoque loom set up for renque,
or lace-type weaving.

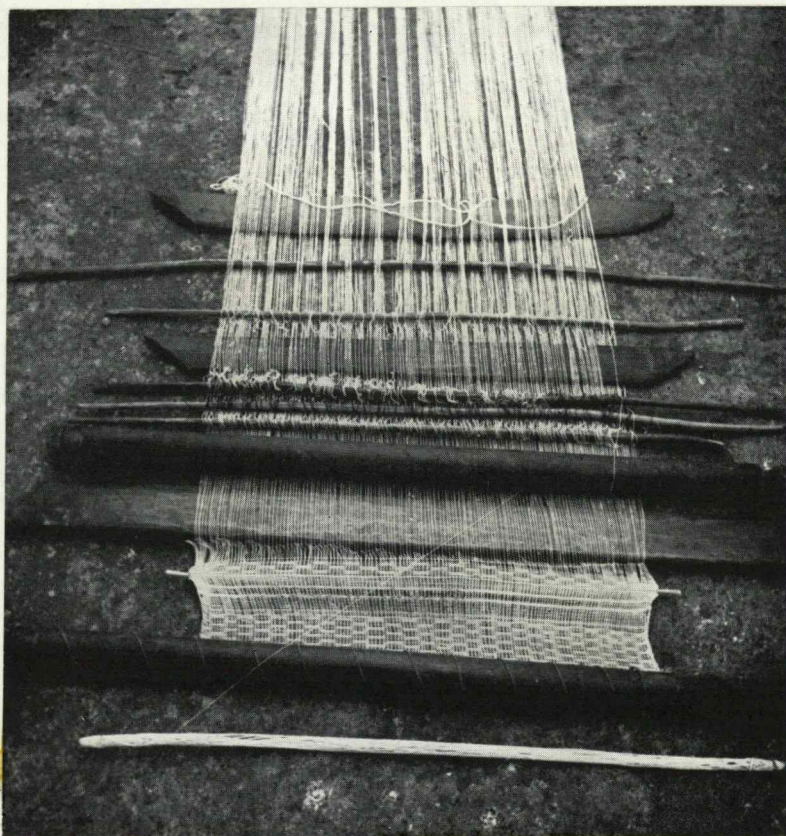


PLATE XX - Pre-conquest type of loom
used by the Aztec women. Loom car-
ries neckpiece material of a lace-
type weave.

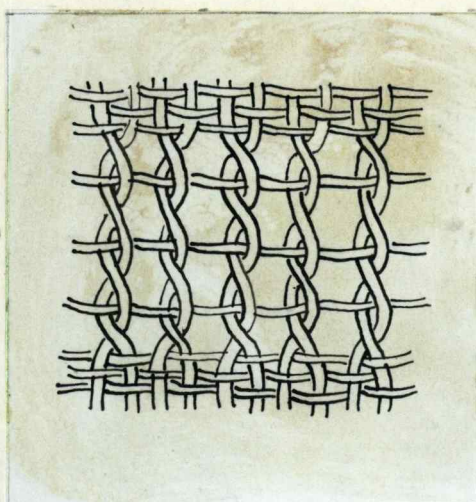


Figure 12. Renque weave.

The renque was used in much of the weaving done by the Zoque Indians. (Plate XIX) It is often referred to as the lacey weave and is similar to leno weave in modern textiles. (Figure 12) A band of plain weave is started. For several rows each pair of warp threads is

twisted after the addition of a weft thread. This gives a slightly open effect to the material. (Plate XX) The twisted warps prevent the weft threads from slipping and make the material more durable than it might appear to be. A variation of this was seen in a closely-woven material also done by the Zoque Indians. When a stripe of renque weaving was to be inserted, eight warp threads were woven in a plain weave. The next eight warps were twisted in pairs. This process was continued for the width of the material. After eight rows of filling threads had been handled in this manner, the order was changed. Warp threads which were twisted in the first stripe were now handled as plain weave; while the plain weave squares become renque weave. When bands of this type of weave were completed, they had a checked appearance. Weaving was so carefully handled that neither warp nor filling seemed to be thrown out of line.

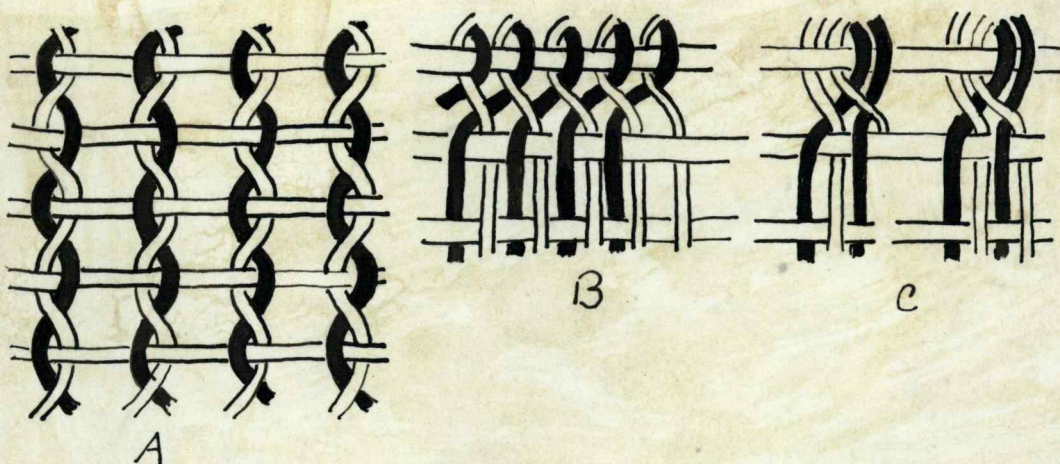


Figure 13. A, Leno weave. B, Single stitch lace weave. C, double stitch lace weave.

The Tarascan Indians in the village of Oranza, in the mountains of Michoacán are making woven lace. This method of handling warp, which has been derived from the Peruvian lace techniques, is done on a waist loom. There are two stitches, single stitch for the pattern and double stitch for the background. In leno weave two warps are twisted on each other. In lace weaving the thread is twisted with the warp two threads away. A very open weave results. Figure 13 shows the details (1:4).

From codices it is seen that the Mexican kings and commanders assumed the dress of Xipe. A feathered headdress was worn with a jacket of spoonbill feathers and an apron or petticoat of green feathers, lapping over one another like

tiles. Shields, a device worn on the back, and jackets were worn for military purposes only. There is a difference of opinion as to whether the fan-shaped ornament was attached to a pole or was worn attached to the waist and hanging down in the back (52:59-73). There were several ways in which feather work was done. The mosaic work in which the feather is cut and pasted onto a bark is not a woven textile. The most renowned feather workers lived in the Amantlan quarters and became more important as the coastal towns, where the feathers came from, were captured. At times the feathers were woven in with the material, but some early feather garments show the stems of the feathers tied in as the cotton material was woven. One of Montezuma's mantles now in the Royal Museum of Armoury at Brussels was done in this way.

Numerous writers have referred to other unusual textiles woven by the early Mexicans. George Vaillant, for instance, after examining early codices or paintings, concluded that early Aztec weavers produced materials which had the effect of velvet and brocade or animal skin (57:143).

The Mexican textile industry is changing from a handicraft to a commercial enterprise. Many factories are developing in the area of Oaxaca and Vera Cruz. Mexico lacks machinery and would like to obtain discarded equipment from the United States. Power mills now in operation produce cotton, wool, and rayon materials. New finishing plants

are being built near Mexico City, and a large rayon mill is being planned in the area of Guadalajara.

The textile industry is unionized, and members of each mill belong to one of several unions. The unions have training schools for boys, usually sons of employees, who will go into the mill to work. Mexicans are content to continue in one line of work and do not have the restlessness of the people of the United States.

DYEING

The early Indians obtained dyes from roots, herbs, barks, leaves, minerals, insects, and snails. Before world war II dyes were imported from Germany and the United States although work was being done in Mexico to develop commercial dyes.

The natives used the dye materials which were available in their area, and costumes from certain regions can be recognized by their predominating color. Methods used to produce colors were guarded secrets, and the information was passed on from father to son (38:33). In a village near Hildago the Indians still make their dyes. They bury strands of wool, colored paper ribbons, and food near the roots of an ancient oak. Dressing in the color they are about to dye, they say prayers in Aztec so that the dyes will turn out well (55:26). A single hue may be known in

Mexico by several names, depending on the language of the people.

Charles Cullen translated an original Italian paper on the source of Mexican paints and dyes.

The beautiful colours which they employed both in their painting and in their dyes, were obtained from wood, from leaves, and the flowers of different plants, and various animals. White they obtained from the stone chimaltizatl, which, on calcination, becomes like a fine plaster, or from the Tizatlalli, another mineral, which after being made into a paste, worked like clay, and formed into small balls, takes in the fire a white colour resembling Spanish white. Black they got from another mineral, which, on account of its stinking smell, was called Tlalihijac, or from the soot of the Ocotl, which is a certain aromatic species of pine, collected in little earthen vessels. Blue and azure colours were obtained from the flower of the Matlalxihuitl, and the Xuihquillipitzahuac, which is indigo, although their mode of making them was very different from the way of the moderns. They put the branches of this plant into hot, or rather lukewarm water; and after having stirred them about for a sufficient time with a stick or ladle, they passed the water when impregnated with the dye into certain pots or cups, in which they let it remain until the solid part of the dye was deposited, and then they poured off the water. This lee or sediment was dried in the sun, and afterwards it was placed between two plates near the fire, until it grew hard. The Mexicans had another plant of the same name from which they likewise obtained an azure colour, but of an inferior quality. Red they got from the seeds of the Achiot or Ruocou, boiled in water; and purple from the Nochitztli, or cochineal. Yellow from the Tecozahuatl, or ochre; and likewise from the Xochipalli, a plant, the leaves of which resemble those of the Artemisia. The beautiful flowers of this plant, boiled in water with nitre, furnished them a fine orange colour. In the same manner as they made use of nitre to obtain this colour, they employed alum to obtain others. After grinding and dissolving the

aluminous earth in water, which is called Tlaxocotl, they boiled it in earthen vessels; then by distillation, they extracted the alum pure white and transparent, and before they hardened it entirely, they parted it into pieces to sell it in the market. To make their colours hold better together they made use of the glutinous juices of the Tzauhtli (m) or the fine oil of chian (n). (16:407).

Black, brown, or white wool used in weaving zarapes is usually the natural color of the fiber. Black, white or sometimes blue fibers are carded together to produce grey. The fibers are carded several times to make the blend more nearly perfect.

Red dye is made from the female cochineal. The insects, grown on cultivated cactus plants, have been used as a source of dye since before the sixteenth century. Deep rose is furnished by the Brazil nuts and billets of wood, both bark and shell being used. Several shades of rose are also made from crushed wild cherries. Formerly other sources of red were tag elder and mountain mahogany (14:8). Red dye from vegetables and herbs always runs. The writer found the red in the older pieces of used textiles seemed to bleed most of the time.

Blue made from the indigo plant is used in most sections of the country, and a urine mordant is used to set the dye (10:35).

Purple dye came from the Murex on the Pacific seaboard (30:155). The bright colored sashes used by the

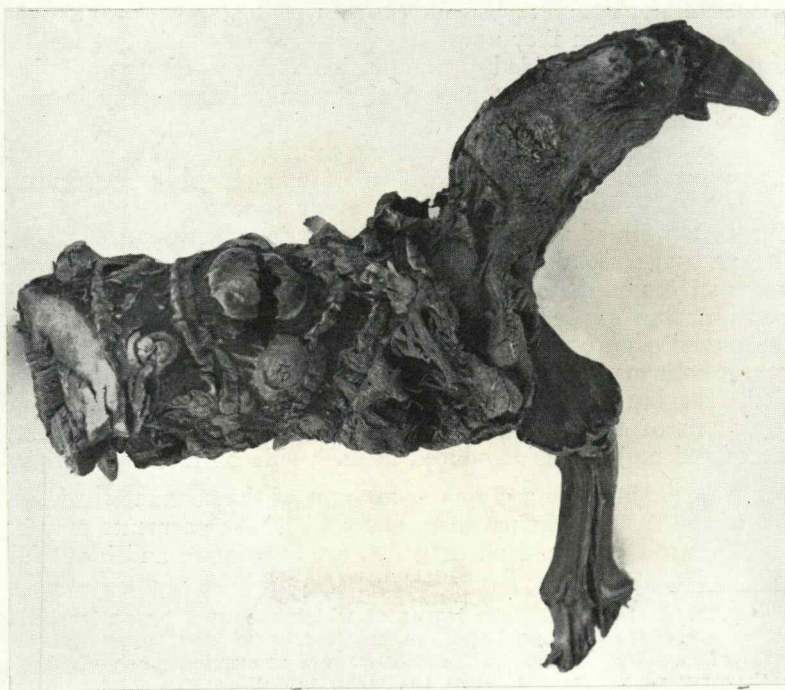


PLATE XXI - Root of the huixtololo which produces cinnamon-colored dye in Puebla.

Indian women on the coast of Oaxaca are colored with a purple dye resistant to light and water. Dr. Atl watched a native on the beach near Acapulco obtain this dye. The "dye Snails" or "Guamelule Snails" live only on the rocks beaten by the Pacific ocean. The native waded out into the water, collected a handful of snails and squeezed them, allowing the purple dye to run over the yarn he held in his hands. The same method was popular many years ago but never reached a commercial scale. Yarns and pieces of textiles dyed by this method can be found in Oaxaca, but they are rare (5:22).

Weavers near Mitla also used orange, yellow, and blue dyes made from herbs and vegetables. As the green is difficult to make, commercial products are used (43:60). Yellow is sometimes made from the flowering tops of the rabbit bush and from yellow ochre (23:8). Roots of the huixtololo furnish material for a cinnamon-colored dye in Puebla. (Plate XXI)

Black from the twigs and leaves of sumac and from charcoal is used for textiles and also by the natives to paint their bodies (23:8).

Methods of dyeing the yarns or textiles are the same today as they were many years ago. The writer saw cotton yarn dyed before it was woven into rebozos. Skeins of white cotton were tied together and put into large copper

kettles over charcoal fires to boil. In some places galvanized wash tubs were used as dye pots. This process was carried on in the open patio. When the yarn was the desired color, it was removed from the bath and strung on a wooden pole supported by two wooden horses and set up in the middle of the street. Some of the skeins were spread on the road in front of the house. No one seemed to disturb the yarn even though it was on a well-traveled street. In areas where rebozos have a pin-point design, the warp threads are tightly tied at intervals before they are dyed. The tight string acts as a resist in the same manner as wrappings do for tie-dye work in this country. Another example of resist dyeing is the work done in Yucatan. Designs are embroidered around the bottom of the skirt with maguey fiber. After the garment is dyed, the embroidery is removed, and the design is seen in the original color of the fabric.

The author also saw white yarn bleached and softened for yard goods. Skeins of white yarn were soaked in a pail of water. A young boy held a skein firmly at one end and pounded it on a smoothly-worn rock in front of him. The boy dipped the yarn into another pail of water, pounded it several more times, and hung it up to dry and bleach.

Sources of dyes and methods of dyeing seem to be phases the weavers know least about or are the most reluctant to reveal. One factory owner, when questioned by the writer, said he bought his dyes in Mexico and was told they



PLATE XXII - Strip of beadwork made in
the twentieth century.



PLATE XXIII - Sampler with alternate bands of puckered folds and beadwork in conventionalized design of flowering vines.

came from Germany but thought they came from the United States.

Many weavers buy yarns which have been commercially dyed. As more machinery becomes available, Mexico will probably develop its own dye industry.

DESIGN

Methods used in executing the Mexican designs vary as do the techniques used in the art work of other countries.

At the time of the conquest of Mexico, beadwork designs were used on the finer garments. China Poblana blouses were at first elaborately worked in beads. Today these floral patterns are embroidered in rayon yarns. Beadwork is now done by ladies of the leisure class and by the nuns (21:15). (Plate XXII) (Plate XXIII) Sequins are used on China Poblana skirts in an all-over spattered effect, climaxed in a large eagle in the center front (12:10). Similar work was done by the Yaqui Indians when they embroidered blue cotton capes with shells for leaders of their war-party.

Bits of yellow and green worsted are worked into fabrics when they are woven to produce little figures of animals, birds, and geometric patterns (54:21). This is similar to work done in Guatemala. Some zarapes are made with the designs in small tufts or burls which resemble the structure of the early Spanish blankets. When the last

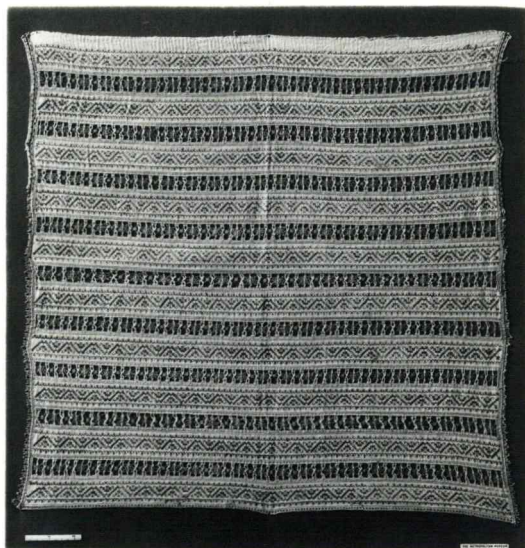


PLATE XXIV - Alternating rows of embroidery and drawnwork. Embroidery is in satin stitch.



PLATE XXV - A fragment of a cover showing cross-stitch design.

stitch of a figure is woven, the ends of the thread are passed through from one side to the other, cut, and frayed, and the thread is fastened down to the fabric (38:10).

The amount of embroidery on a garment varies from the fine single line on the huipil worn by the Zoque Indians to the huipil entirely covered with embroidery made by the Chinantecans. Embroidery is done in rayon, wool, cotton, or silk thread. Satin stitch and cross-stitch seem to be most used in applying the solid designs, (Plate XXIV) (Plate XXV) although many other stitches are used in other ways. The cross-stitch is very small and closely done. The writer found on examination that the woolen yarns used in embroidering the older Otomi pieces wore off before the cotton threads, probably because of the looser spinning of the wool yarns.

On the huipil in Tuxtla Gutiérrez a fine band of stitching in pastel rayon yarn is added on the edge where the ruffles are attached to the garment. When the heavier material is used in the huipil, solid bands of embroidery, about two inches wide, are worked around the neck and over the shoulders. These bands usually appear as solid colors because of the close stitches. When the entire garment is covered with embroidery, the motifs run in lengthwise or crosswise stripes. Some of the earlier work, in which a simple running-stitch design in colored thread is used, is so evenly made that the



PLATE XXVI - Modern embroidered runner. This type of wool embroidery on heavy cotton is used in making runners, purses, hangings, and other articles for sale. This piece was made in Tenango Del Valle.

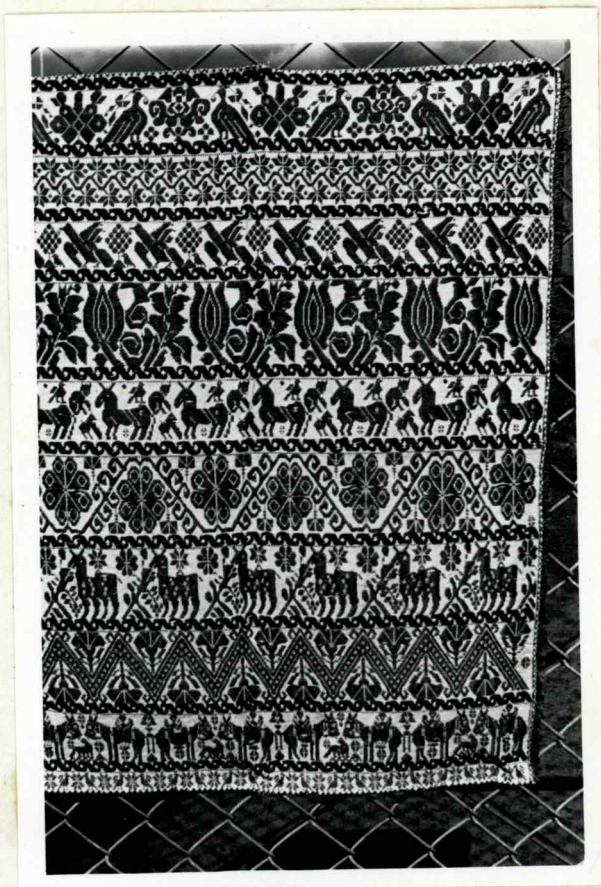


PLATE XXVII - A modern piece of embroidery. Red and blue rayon yarns are worked on a white cotton background. This piece is similar to running stitch designs, and the fringe on the right side is formed by continuing the thread carried across the entire width.

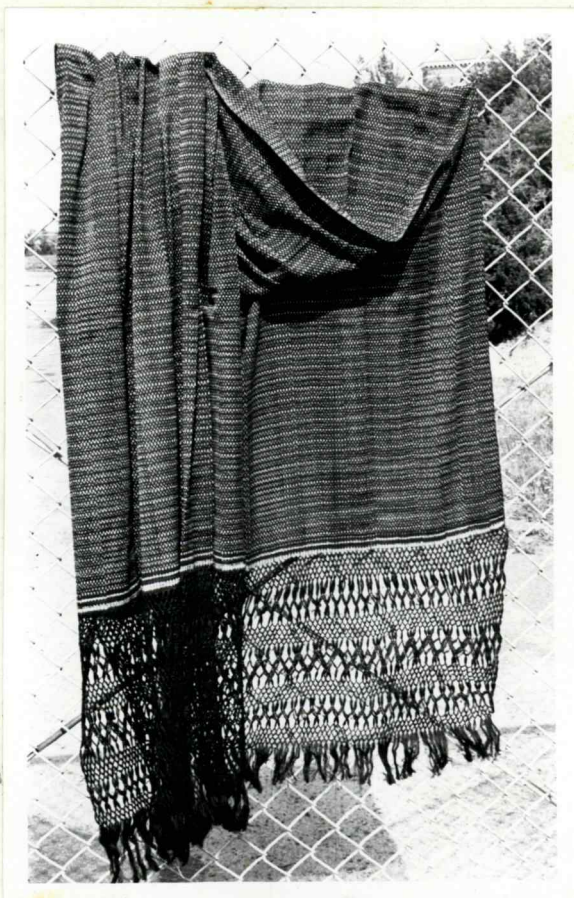


PLATE XXVIII - A rebozo from Puebla. The fringe is tied to form a wide patterned border. Warp threads are tie-dyed to produce a flecked effect. This is one of the most common types of rebozos seen in Mexico.

garments have to be carefully examined for one to make sure the colored yarns are not woven in.

The writer visited a workroom where bags and table runners are embroidered. Four young girls sat at a table working out their patterns as they chose the color and stitch they wanted to use. The workroom had the appearance of a social gathering as they chatted and worked in a care-free manner. (Plate XXVI) (Plate XXVII)

Braiding and tying of fringe forms a very definite part of the design of many garments. Bags made by the Otomi Indians have fringe which is cleverly tied to form a design and at the same time produce openings through which draw-strings can be pulled. Long fringe on the ends of rebozos are either braided or tied, which adds a bit of daintiness to a plain garment. (Plate XXVIII) During the seventeenth and eighteenth centuries lovely rebozos were made of silk with inscriptions added by weaving in gold and silver thread (40:109). Laws were passed limiting the colors which could be used in making rebozos by the poor class to black, dark green, blue, and grey. To relieve the plainness, gold and silver threads were woven in. Some of the work is so finely done and made of such fine thread that the whole garment can be pulled through a ring.

Lovely drawn-work is now being done on blouses, handkerchiefs, table cloths, and other choice articles.



PLATE XXIX - Drawnwork design, nineteenth century.



PLATE XXX - Panel with drawnwork in
pattern of crosses and stars.

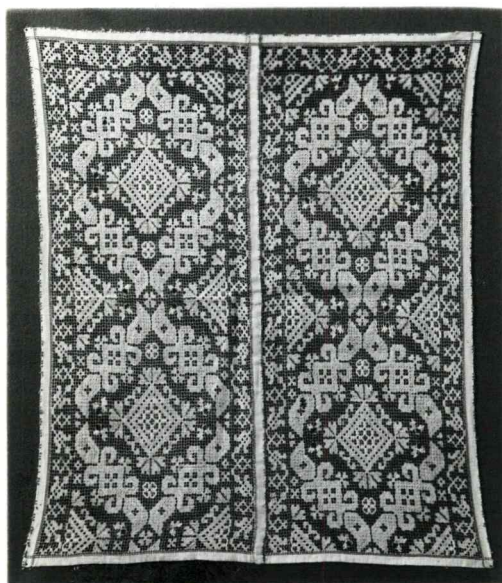


PLATE XXXI - Borders with drawnwork in red.

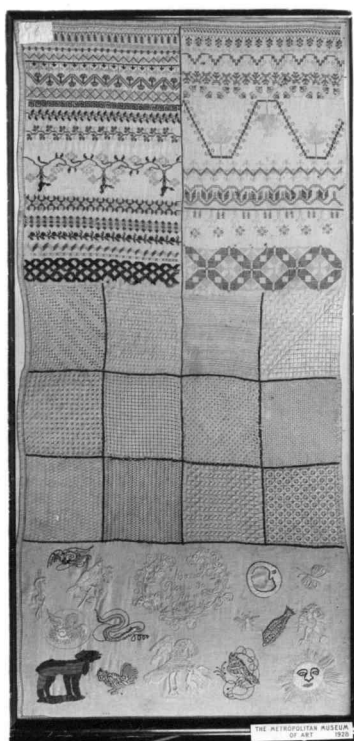


PLATE XXXII - Drawnwork with cross-stitch. Inscription: Maria/ Pierri/ 30/de Junio/ 1887.



PLATE XXXIII - Small fragment of embroidery edged with
bobbin lace worked in black silk. Nineteenth century.



PLATE XXXIV - Tzotzil woman in a costume similar to that worn by Zoque women. The blouse is a combination of decorative weave, embroidery, and crocheting.

(Plate XXIX) (Plate XXX) (Plate XXXI) (Plate XXXII) A blouse trimmed with embroidery or drawn-work requires about one to three weeks to make. To increase production, crocheted decoration is used which can be finished by one woman working part time, in one week (10:35). (Plate XXXIII) (Plate XXXIV) In large cities these finer pieces are often sold in shops or on the street.

Idolatry was firmly imbedded even before the arrival of the Spaniards. Catholicism was forced upon the Indians when the country was conquered; a combination of the two beliefs is seen in much of their design work. In some instances the Spanish ideas have been firmly implanted, and such designs are more easily discernible. Where idol worship was the stronger, pictures of the gods are worked into the art.

Basically all the designs are geometric, or conventionalized human, animal, or plant forms. Beal, in his account of the aboriginal culture of the Cáhita Indians, says:

If any woven designs were made aboriginally, they were probably completely geometric patterns, to which such names as snake, eye, and squash blossom were applied.....(8:29).

The nomadic Aztec tribe was told by their gods, that when they saw an eagle with a snake in his mouth, sitting on a cactus, they had come to the place he had chosen as their home. The tribe came upon this eagle on an island in lake Texcoco, and it was here they settled. They also



PLATE XXXV - Panel design of crowned-lions, pelicans, double-eagles, and trees darned with colored silk and metal threads. Nineteenth century.

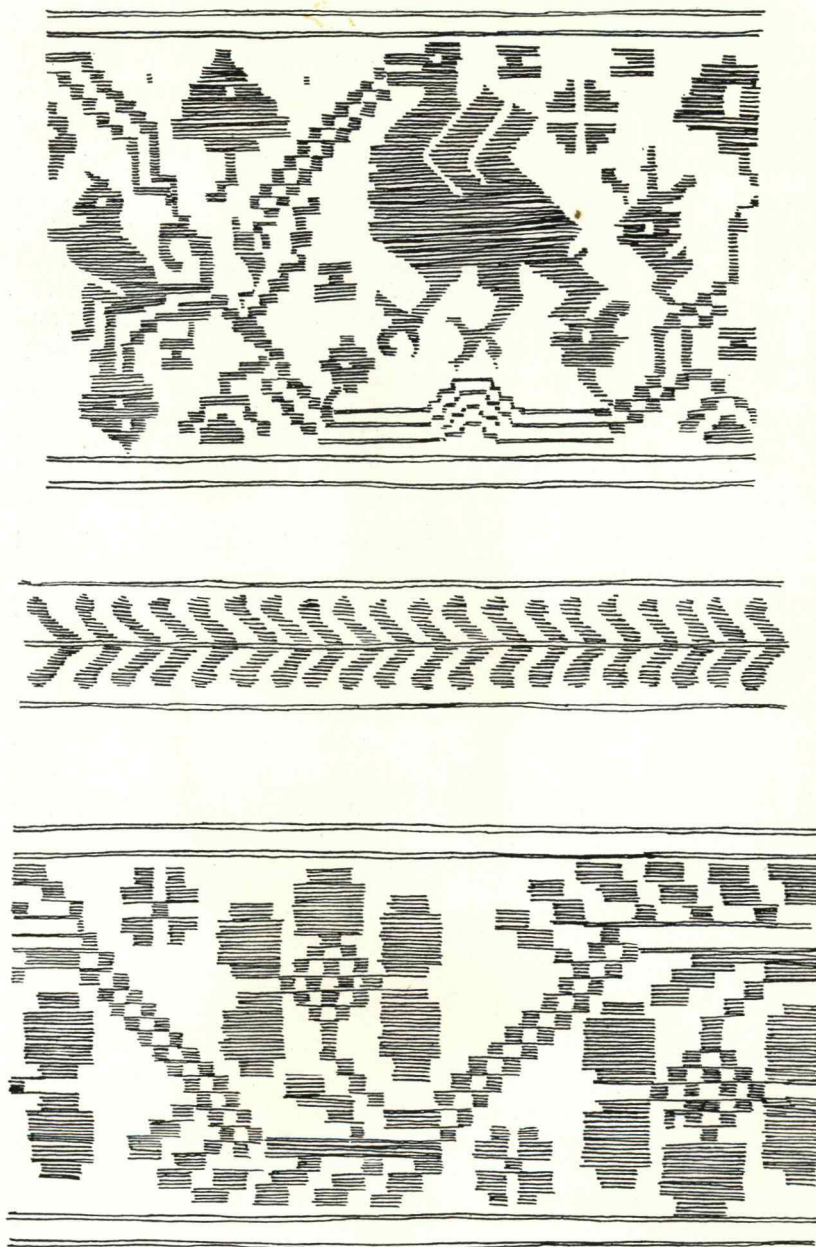


PLATE XXXVI - Huipil designs. The center design is called the fishbone.

inhabited other islands in the lake and built causeways. Neighboring tribes on the shores were unfriendly, and as agriculture could not be carried on in the mainland, other means had to be devised to raise produce. Food was grown on floating rafts, which became anchored to the bed of the lake with roots and formed the canal communities as the floating gardens of Xochimilco. The eagle with the snake, a symbol of the Aztec people, is now the Mexican national emblem and is used in every form of art.

The two-headed Austrian eagle, which is commonly used by the Huichol Indians, is thought to have come from the coin of Charles the fifth (53:36). (Plate XXXV) Combinations of geometric designs and ideas taken from nature are worked together to form lovely pattern. (Plate XXXVI) With a little imagination, one can see a story in many designs although there is no record of such being the intention of the weaver.

The most widespread and potent diety of the Indians was the winged serpent, representing the union of the two major powers - the earth, shown by the serpent, and the sky, depicted in the bird. The Toltecs and Aztecs called their god Quetzacoatl, and the Yucatans called it Kukulacan. The feathered serpent is the dominant motif through all Puebla, Toltec, Aztec, and Maya art (29:282). Other symbols used by the Maya tribe were Tlaloc, the frog, God of Rain;

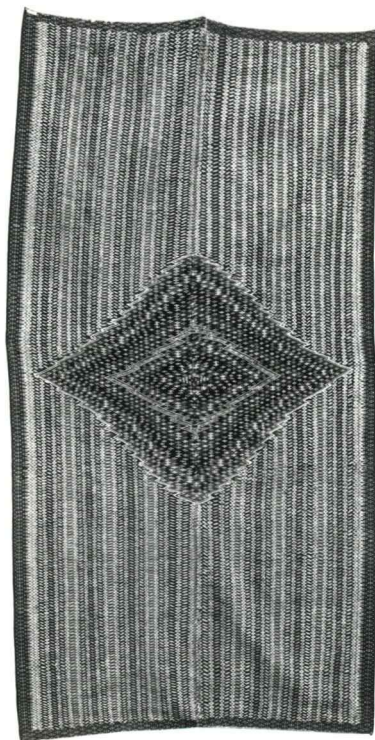


PLATE XXXVII - Red, blue, and white
zarape about one hundred two inches
by fifty inches made by the Chimayo
Indians probably in the State of
Saltillo.

Huitzelopochtli, an eagle or ocelot, God of War; and Xochipilli or Huitzilopachtli, a monkey, God of Flowers, Feasting and Mirth.

Frances Toors has been working with the Mexican Indians, helping to gain recognition for their art work. She describes the zarape designs as follows:

Every region, every state, and every village uses serapes that are distinctive in texture, color, and design. They are all different, even those from the same village; yet there are regional patterns that one with experience easily recognizes (55:328).

Many authorities agree that the finest zarapes were made in Saltillo, in the State of Coahuila. (Plate XXXVII) The designs were small and intricate, such as interlocking diamonds and zigzags. The center had a contrasting lozenge design. In the latter part of the eighteenth century and the nineteenth century the fame of the Saltillo zarape became known, and the garment was in great demand by gamblers and visitors at the Saltillo fairs. These were closely-woven, soft garments in which a cotton warp was often used. There has been a greater decline in the quality of the Saltillo zarape than in those from other regions. The modern work is done in bright, gaudy stripes and is made for the tourist trade as the natives never wear things of this sort. San Miguel produced blankets similar to those from Saltillo and in some cases even finer.



PLATE XXXVIII - Design of an old Oaxaca zarape. Many colors are used in the background and a center design in a diamond shape which fits about the neck.



PLATE XXXIX - Design of one of
the older Oaxaca zarapes.
This pattern was worked in
blue and white.



PLATE XL - A sample zarape
from the State of Jalisco.
The rose pattern is worked
in red and green wool on a
background of white wool.
Fringe is made by twisting
the warp threads.

San Louis Potosi and Aguacalientes produce the light, striped zarapes, a style worn by the charros.

Teotitlan del Valle, Oaxaca, like Saltillo, is weaving few blankets with their old design of a soft white-and-grey striped border and large red or grey centers with a stylized lion carrying a rose on his back. The new pieces, made for the tourist trade, have calendar stones, idols, and fierce eagles in the center and are done in vivid colors. These zarapes from Oaxaca the writer has seen vary greatly in color and design. The regional characteristics in this area are not as easily discernible. (Plate XXXVIII) (Plate XXXIX)

The villages around Texcoco, State of Mexico, weave a heavy blue zarape with a Grecian fret border design and a diamond center.

Jalisco zarapes are woven in white wool with a center design in bright-colored roses. Fringe in bright colors is sometimes added to the edge, and others have bluebirds worked into the center pattern. (Plate XL)

The writer, while driving through the rural area between Uruapan and Guadalajara, saw the natives wearing zarapes of bright red-purple wool. The color was shaded with just enough purple to prevent its having an orange cast. This made a lovely picture against the green background of the surrounding country. In the regions around



PLATE XLI- Hand-painted fabric from Tillett Brother in Tasco.



PLATE XLII - Hand screening by Tillett Brothers in Tasco.

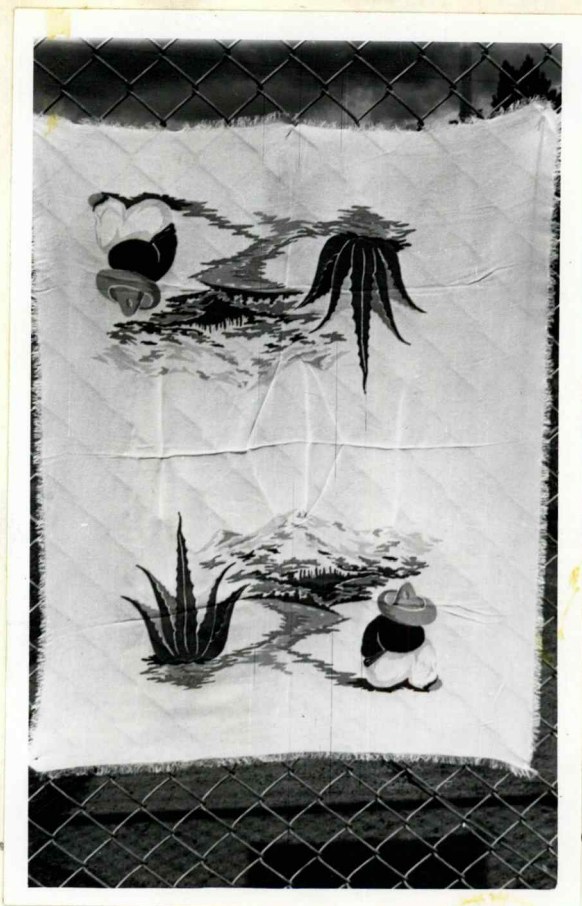


PLATE XLIII - Modern block printing from Tlascala. This scarf has been laundered and did not fade or bleed.

Puebla and in the Orizaba valley natural-colored wools of brown, black, and white were used. In the more arid sections of the district the wearer seemed to blend into the scenery.

Zarapes have always been popular and interesting in design. The fine, well-made pieces are highly valued. Mayer, writing in 1844, tells of the fashionable cavalier's paying from two to five hundred pesos for a single zarape.

Modern textile designers are developing some lovely and interesting designs. Tillett Brothers in Taxco are screening and painting plaids and abstract designs on wool, rayon, cotton, and a few silks and satins. Individual work is done by them, designing textiles to suit the personality of the wearer. All of their designs are conventionalized and give the feeling of belonging together. (Plate XLI)
(Plate XLII)

In Tlascala, border designs are being hand-blocked on rayon and cotton materials. The designs are conventionalized, and interesting color combinations are used. (Plate XLIII) (Plate XLIV) Block printing is not a new art in Mexico. When the Spaniards came, fabrics were being decorated with designs stamped on by clay stamps (43:103).

Senorita Esperanza Casterllanos Lambley, in Guadalajara, told the writer she was having difficulty buying colored yarn. Most of the textiles she is now weaving are

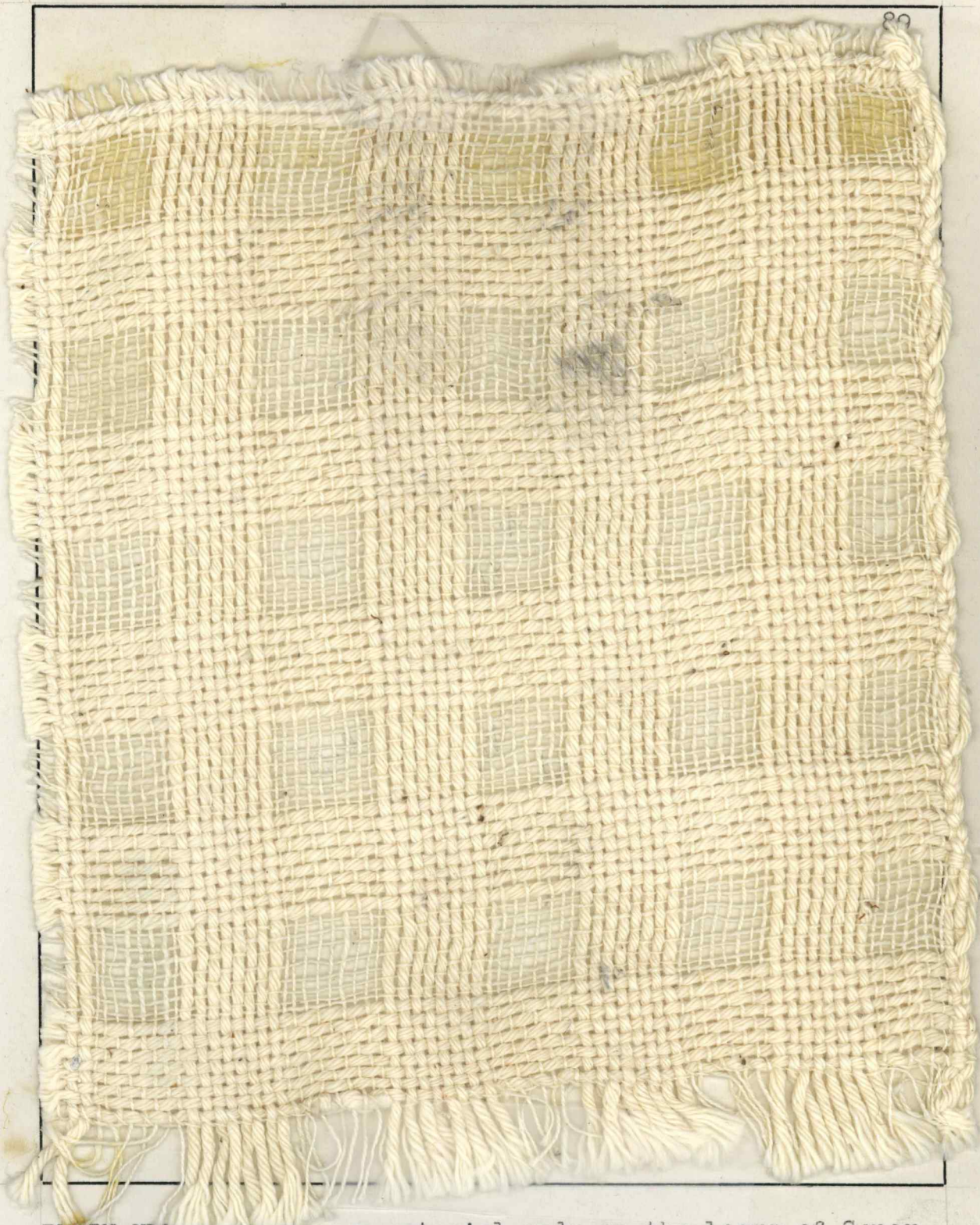


PLATE XLV Hand-woven material made on the looms of Senorita Esperanza Casterllanos Lambley in Guadalajara in which pattern is gotten through space relationships and variation in texture.

used for curtains, luncheon sets, and place mats. (Plate XLV) The designs depend for their charm upon space relations and variations in texture. Senorita Lambley designs her own textiles with the help of her brother, who is an architect. The architectural quality of the work is easily seen. All the yarn used in curtains is similar to the wrapping string we find used in our stores. Curtains made of this material, which have been used for some time in the Fenix Hotel, still retain their shape.

The new designers seem to be awakening an interest in textiles, just as Diego Rivera has in murals. It is natural to suppose that even more interesting designs and techniques will be developed.

CHAPTER IV

TEXTILE USES

It is believed the early Indians in Mexico dressed according to the climatic demands. In warmer areas women wore one garment, a skirt, made of cotton. In mountain regions, where the temperatures are lower, more clothing was added for protection (30:162). Today few people are wearing the original costumes adopted by the tribes before the conquest. In some regions, mestizos, those of mixed ancestry, dress in a different manner from the people of pure Indian blood. In other areas the mestizos adopt the costume of the natives. Certain garments are used throughout Mexico and vary only in design, color, style, and texture.

The Spaniards brought with them to Mexico a quilted blanket called "manta Andaluza, manta Valencianas," and "manta Jerazanas," which was copied from the Arabian blanket. The Indians called the cotton blanket they used at this time a "tilmatli," which was about one meter, twelve centimeters square. The tilmatli hung down the back and tied over one shoulder. For greater warmth two tilmatlis were worn, one in the back and one in the front. During the Colonial Era, following the conquest, the tilmatli and manta were combined forming the predecessor of the present-day zarape. There are many sizes of zarapes worn. The style, size, and weave govern the use of the garments. "Picha" is

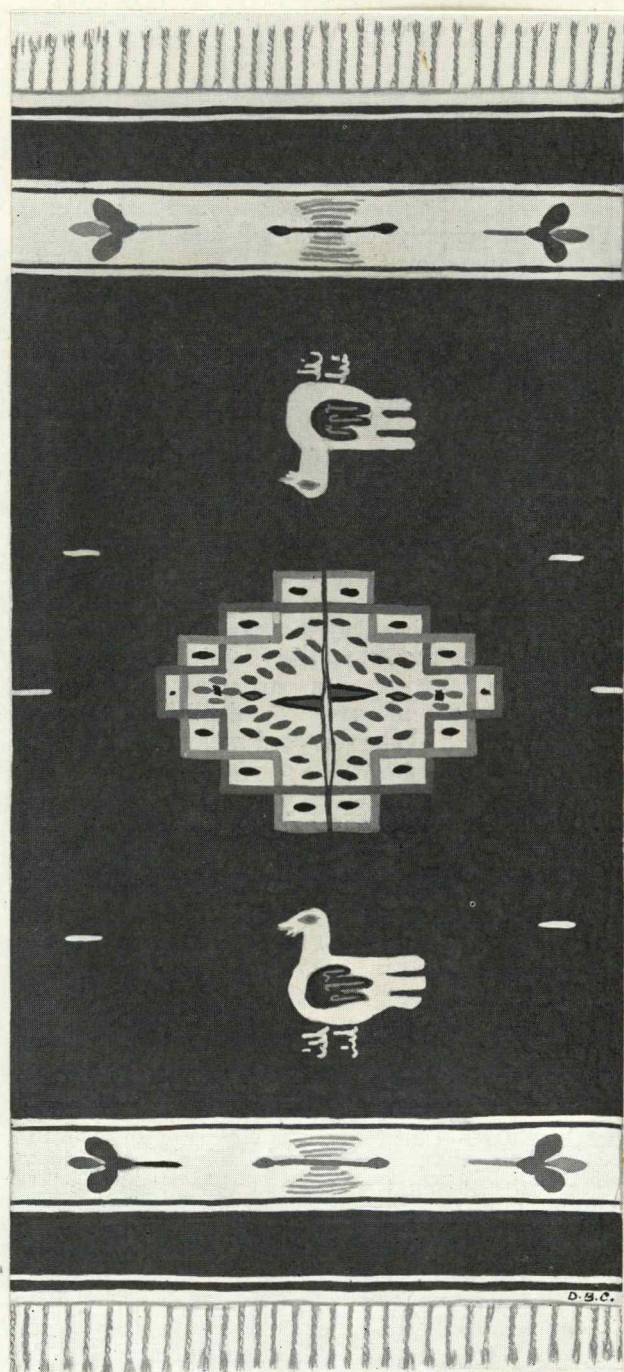


PLATE XLVI - Coton, or woven
shirt, from Puebla.

improperly used to mean an old, worn-out zarape, tightly woven and worn especially for rain. The tuji in ancient times was a manta woven of rabbit hair. This garment, known by the same name, is still used in Vera Cruz. A co-tón is a smaller tilma which is sometimes worn as a type of shirt. (Plate XLVI) Jorongo, is a short, velvet-like zarape with a bocamanga, center opening for the head. Gaban and manga are smaller jorongas with a head opening. Ponchos, same as mangas, were made from the cotton which grows on a tree. It was from this tree, ponchotl, they derived their name. The name given a zarape differs according to the style of the garment and the language of the tribe.

In the second half of the eighteenth century zarapes of cotton and wool or silk and wool were woven in Guana-juato and San Miguel and began to attract attention at the fairs. At the same time Saltillo produced a cotton and wool garment so tightly woven it was waterproof. These are very soft and by collectors are considered among the best.

The ordinary zarape is fifty centimeters wide; double-size garments are one meter wide. Wide garments are usually woven in two strips, sewed together lengthwise, and slightly carded to conceal the seam. There is always a center opening in these. The regular Indian blanket is woven in one piece, or the entire center seam is sewed; there is no head opening. (38:7-35).



PLATE XLVII - Young girl in Yucatan wearing a rebozo to shade her eyes. Rebozo has a wide decorative band made by braiding the warp threads into a pattern.



PLATE XLVIII - Young girl in
the State of Yucatan wearing
a rebozo and embroidered
huipil.

Every Indian boy and man in Mexico has a zarape. During the warmer part of the day it is folded and carried over the shoulder. The Mexican Indian uses his zarape for a blanket as he takes his afternoon siesta beside the well-traveled highway. Small boys stretch out in front of the house to sleep, paying no attention to the dogs, pigs, and chickens running about. On cold mornings the native walks along the highway with a zarape held over his mouth. These people believe the cold air enters the mouth and chills the body; so to avoid the cold, the mouth is covered. Sometimes a stream of smoke rises from the zarape opening as the native walks along smoking but still keeping his mouth covered against the cold.

The rebozo is as important to the woman as the zarape is to the man. The rebozo is the Indian adaptation of the Spanish shawl. (21:3). At the time of the conquest fine pieces of cloth were used by the women as coverings. The Indian woman wears no coat or hat. The rebozo is worn over her head in church and is draped over her shoulders to act as a coat. (Plate XLVII) (Plate XLVIII) Besides being a garment for warmth it serves many utilitarian purposes. The woman walks to market carrying her produce in her arms, her baby tied on her back in a rebozo. In some regions the baby is tied in the rebozo and carried in the front. If there is no small baby, produce is carried in the same

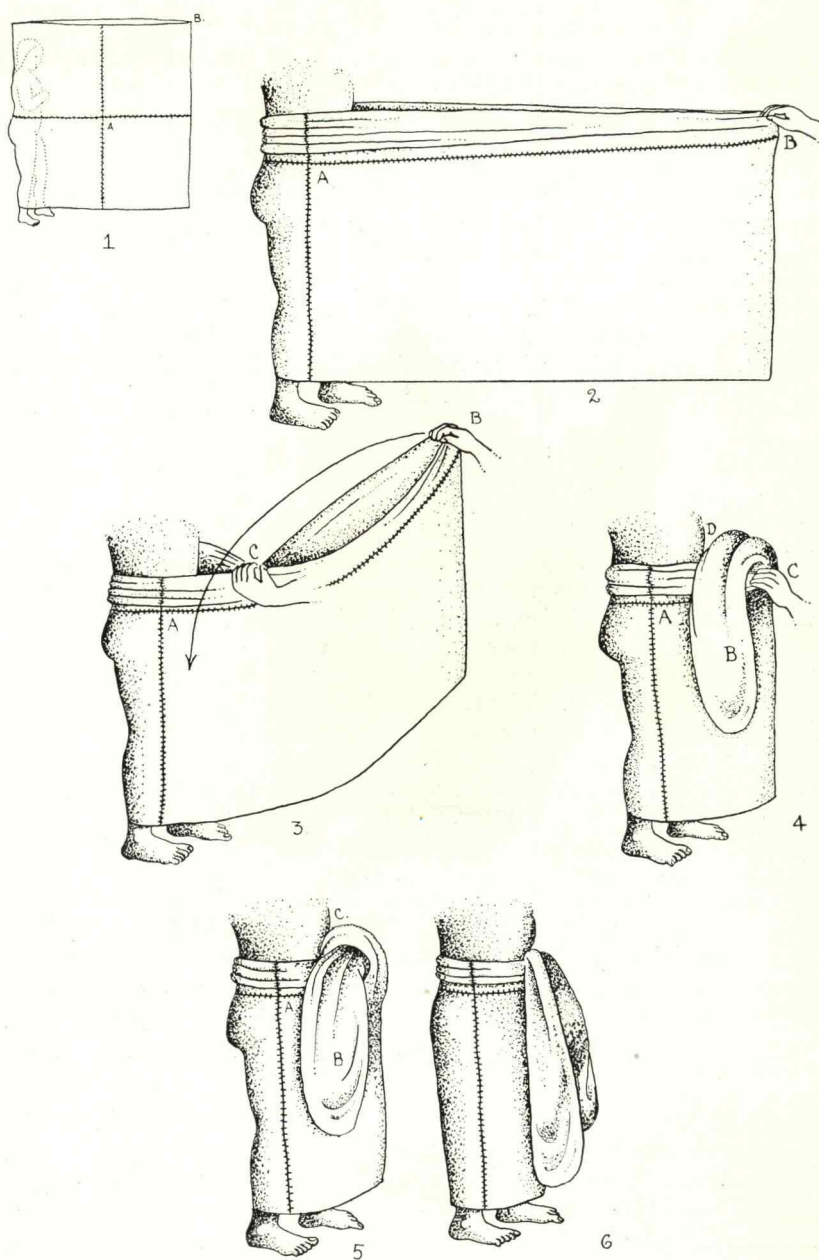


PLATE XLIX - Method of donning the large-size Zoque skirt. The loop hanging down the front may be thrown over the shoulder to act as a waist.

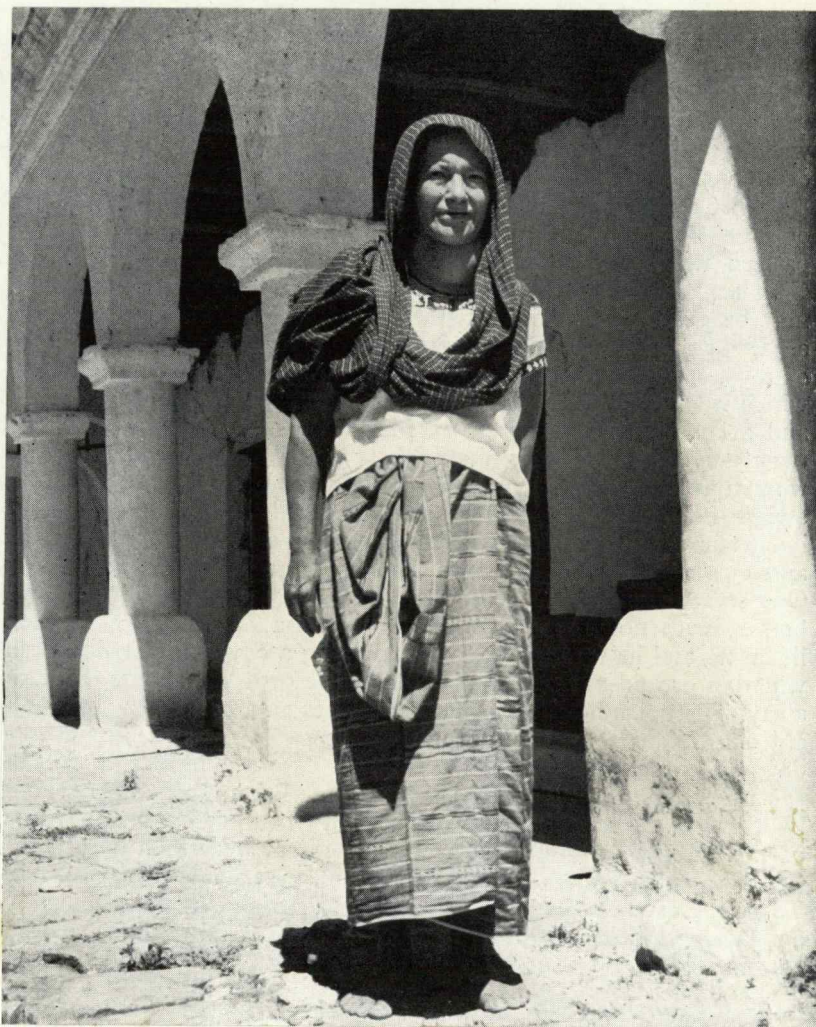


PLATE L - Zoque woman wearing a long skirt tied at the side. Her rebozo is worn over the head.



PLATE LI - Zoque Indians wearing ordinary and wedding costumes. Woman on the left is wearing the skirt folded in the front. Man at the right has a tilmalli tied on the shoulder.



PLATE LII - Otomi girl from the State of Mexico wearing an Otomi costume. Her neckpiece is of a heavy material. The skirt is made of two strips of contrasting material.

manner. The Zapoteca woman in Oaxaca, because of the cold, wears a rebozo wound around the head with one end hanging down her back (24:224).

The style of the rebozo in Mexico does not vary a great deal, but the skirts of different areas are quite distinctive. There are two styles of skirts, the envuelta or wrap-around, which is from five to five and one-half yards long; and the plegada or plaited skirt, eight yards long. The envueltas are gathered in at the waist and held in place with one or more belts. The plegadas are worn in one of several ways. The Zoque woman pulls her skirt around her body tightly and makes a knot with the excess cloth. (Plate XLIX) (Plate L) This leaves a loop hanging down the front, which is used as a large pocket. The larger skirts are also worn plaited and tied with belts. (Plate LI) Plaits are folded in the front, back, or all the way around. In the State of Michoacan the writer saw Tarascan women wearing skirts neatly plaited across the back in a fan-like arrangement and tied in place with several belts. The young girls wear the same style skirt in brighter colors. Most of the skirts are black wool and reach the ground. Red and other bright colors are sometimes used alone or with black. In some areas two lengths of cloth, differing in weave, design, and color, are sewed together and give a two-toned effect to the skirt. (Plate LII) Embroidery may be added

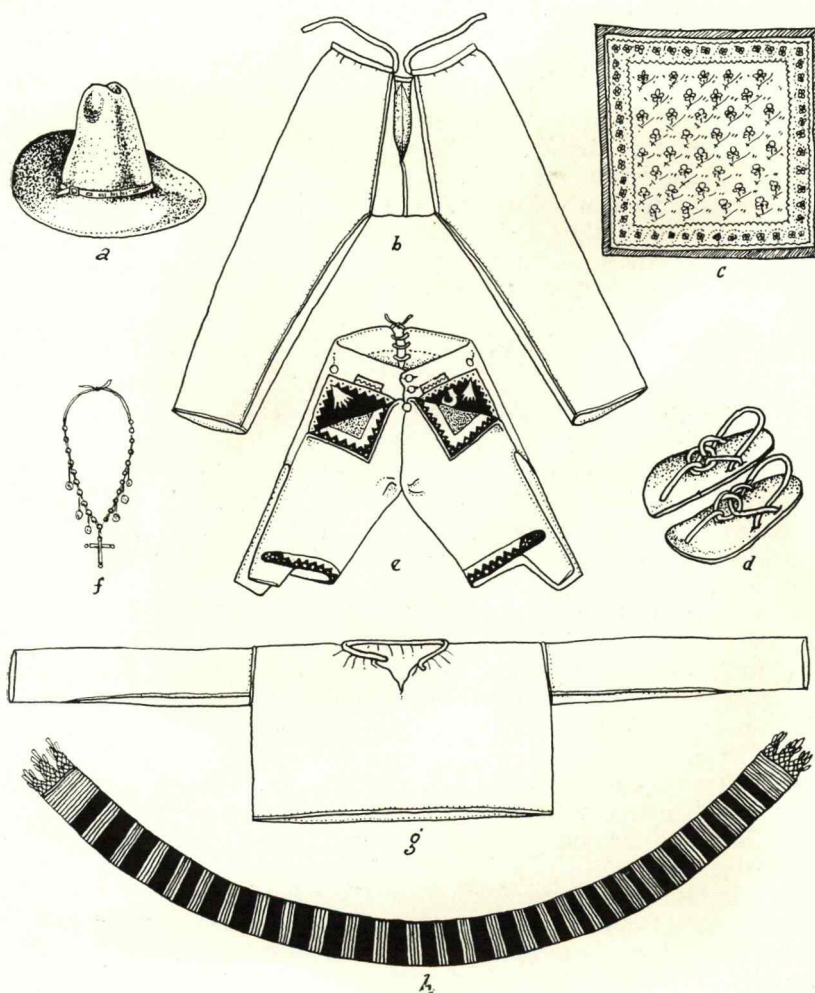


PLATE LIII - The details of a man's costume in Tuxtla Gutiérrez; a shows the typical Mexican trousers, b, leather trousers which are worn over the cotton pair. These are appliqued with pieces of different colored leather, g, is a long-sleeve shirt with a high neck, and h is the belt worn with this costume.



PLATE LIV - Man's costume in the State of Yucatan. Trouser legs are often worn rolled up to the knees.



PLATE LV - Belts and garter tassels. The belt on the right shows the figure of a native with an elaborate headdress. The garter trimmings are of gold thread, silk thread, and beads and were used during the time there was a great deal of pomp and formality in the ruling house.

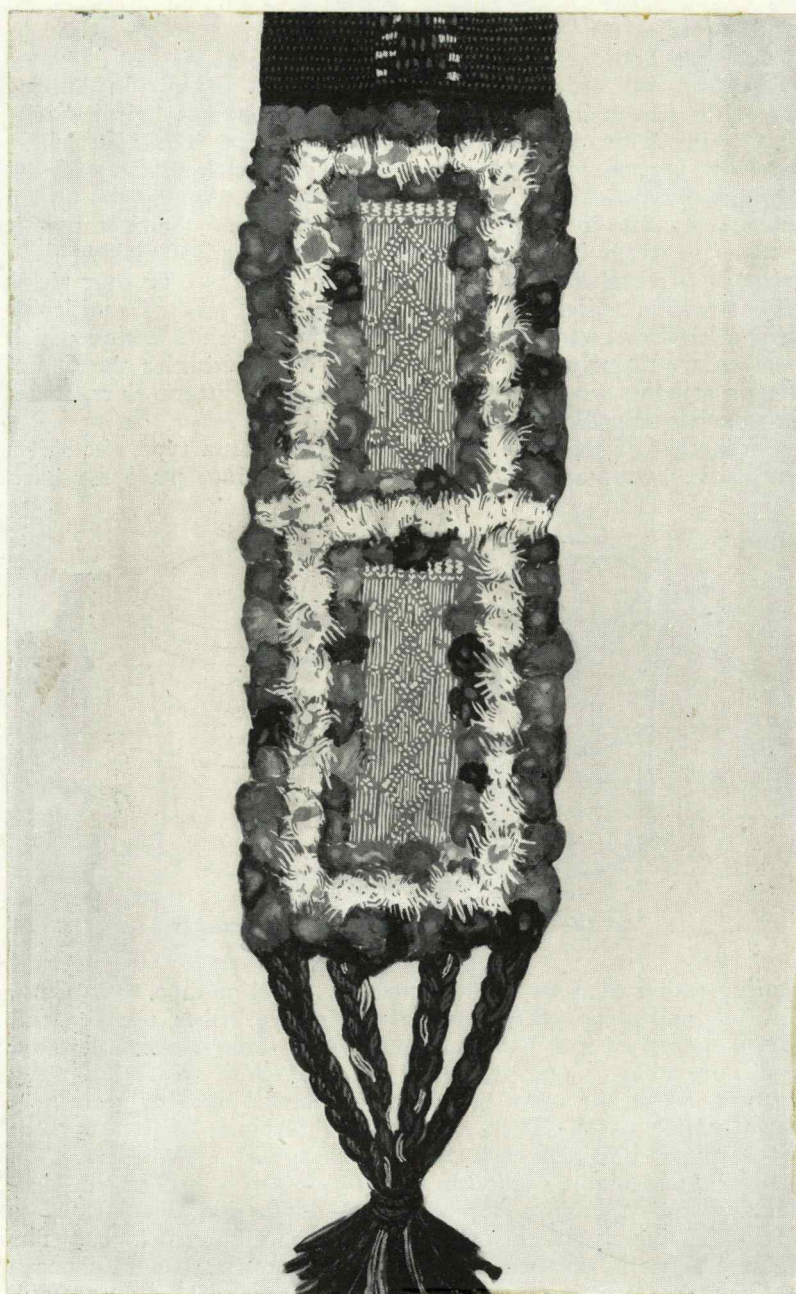


PLATE LVI - The end of an Aztec woman's belt. Trimming is made of tufted yarn worked in rows, the center of the design is lace.



PLATE LVII - Decorated end of a man's
belt from Puebla.

around the bottom, and in places a ruffled petticoat shows below.

Men's trousers are about the same in all regions. Made of light-colored cotton material, they wrap around the waist and tie. (Plate LIII) Sometimes the trousers are gathered in at the ankle. Cordry tells of the Aztec men in Cuetzalan wearing the trouser legs tucked up over the calves, a style rapidly disappearing (17:34). In Yucatan the same style trousers are worn rolled up to the knees. (Plate LIV)

The garments thus far described are worn by men or women. The faja, or belt, is universally worn by men and women of most tribes and varies from one and one-half to five inches in width and from one and one-half to three yards in length. (Plate LV) Belts are usually woven on a horizontal belt loom with a geometric, animal, floral, or human design. Some of the tribes use an elaborately decorated belt, but the tribes in Oaxaca use one with simple designs. When a belt is used to support a large wool skirt, it is sometimes backed with a strip of petate to prevent its cutting into the waist of the wearer. Belt ends may be braided, fringed, or elaborately decorated. (Plate LVI) (Plate LVII)

In most parts of Mexico men now wear a light-colored shirt tied in front. Some areas, especially those farther from the cities, retain their earlier style of garment. The



PLATE LVIII - Man's shirt made in
Ahuacatlan and Xochitepec, Puebla
but worn in the Cuetzalan region.



PLATE LIX - Aztec man and woman. Woman is wearing a neckpiece over her shoulders and another over her head. Man is wearing shirt with epaulette-like sleeves and trousers tucked up over the calves of his legs.



PLATE LX - Zoque Indians in Tabasco wearing costumes of an older period. Man at the right is wearing a suit similar to that worn in Yucatan.

Zoque Indians in Tuxtla Gutiérrez wear a short garment with long sleeves and show the bare skin between the shirt and the belt. Aztec Indians in Cuetzalán wear a shirt which is quite different. A large round or square opening is cut for the neck. A six-inch square of cloth is sewed under the outer edge and toward the neck opening. The small sleeve is joined with an under-arm seam for several inches. These shirts are never worn with the arms through the sleeves, but the sleeves dangle over the shoulders like epaulettes. (Plate LVIII) (Plate LIX) The sides of the garment are sewed up. This style seems to be worn only in this district. The huicholes wear a long-sleeved shirt which is not sewed up the sides. The back and front are gathered into the belt (17:26-31).

Men in Yucatan wear a straight blouse-like type of shirt similar to the pajama jacket in this country. (Plate LX)

In the warmer areas Indian women often went about their work wearing the long-style skirt and no blouse. When they appeared at the market or on the street, the long end of the tied skirt was brought over the shoulder and served as a partial covering. A quechquemiltl, or neckpiece, was worn by the Aztec women and was made of two rectangular pieces of cloth sewed together to form a square with a neck opening. These were made of cotton and in some cases had a woolen band woven into the outer edge. When they were



PLATE LXI - Market scene in Cuetzalán
showing women wearing Aztec neckpieces.

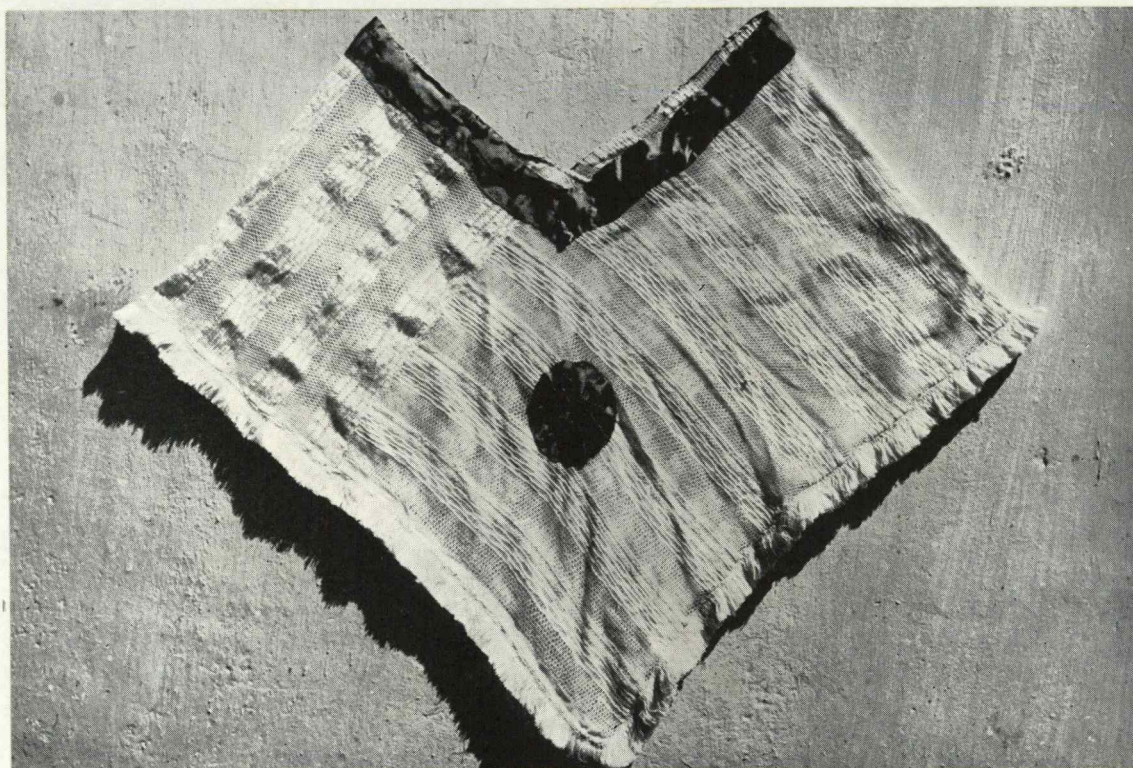


PLATE LXII - Aztec neckpiece (quechquemitl) of lacey-type weave. The neck is faced with ribbon, and there is a rosette of ribbon on the front.



PLATE LXIII - Silk huipil from Yucatan, over one hundred years old. Shades and tints of red and green are used in cross stitch embroidery at the top and bottom. Silk embroidery on net forms the bottom ruffle and a band above the hem.

washed, the wool shrank and gave a puckered effect. Embroidery and edgings in yarn were often added as further decoration. Formerly a girl wore this type of neckpiece for the first time on the day of her marriage. Married women wore them at any time, especially at fiestas. Another neckpiece of this type was worn over the head as protection for the elaborate headdress and to shade the eyes. (Plate LXI) These neckpieces were woven in plain weave or renque weave combined with a plain or patterned weave. Fifty years ago the Totonac women wore these lacey pieces edged with imported brocaded ribbon. (Plate LXII) Skirts worn with this garment were of white cotton and heavily embroidered with designs of animals, flowers, and birds in red and blue. The skirts fit snugly with drapery at one side and when worn with the lacey quechquemiltl made an attractive costume.

Another type of blouse in common use is the huipil. It may be narrow, woven in one piece, or wide, with several lengths sewed together. There is a center opening for the head, and the sides are sewed together. Mexican garments are usually woven to the size desired instead of the finished material being cut into the proper shape. Huipils in Yucatan are made of a light-weight material and are elaborately embroidered in cross-stitch around the neck and hem in a bright floral pattern. Wide ruffles are added at the

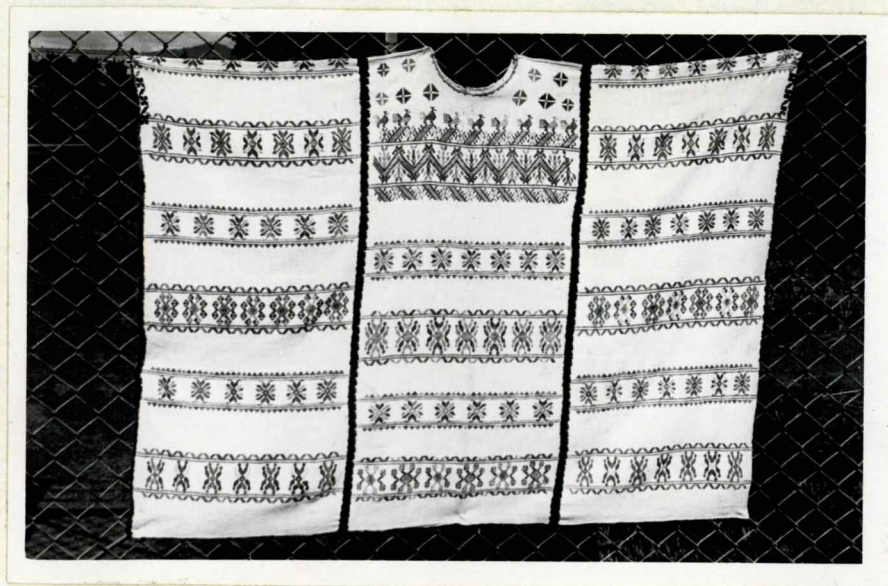


PLATE LXIV - Early nineteenth century huipil.
The bands of design are woven in cotton and
wool combinations. Strips of weaving are
joined with bands of braided faggoting. A
small design in shades of red is added at
the sleeves.



PLATE LXV - Zapotec woman and child
wearing the huipil and a rebozo wrapped
around the woman's head.

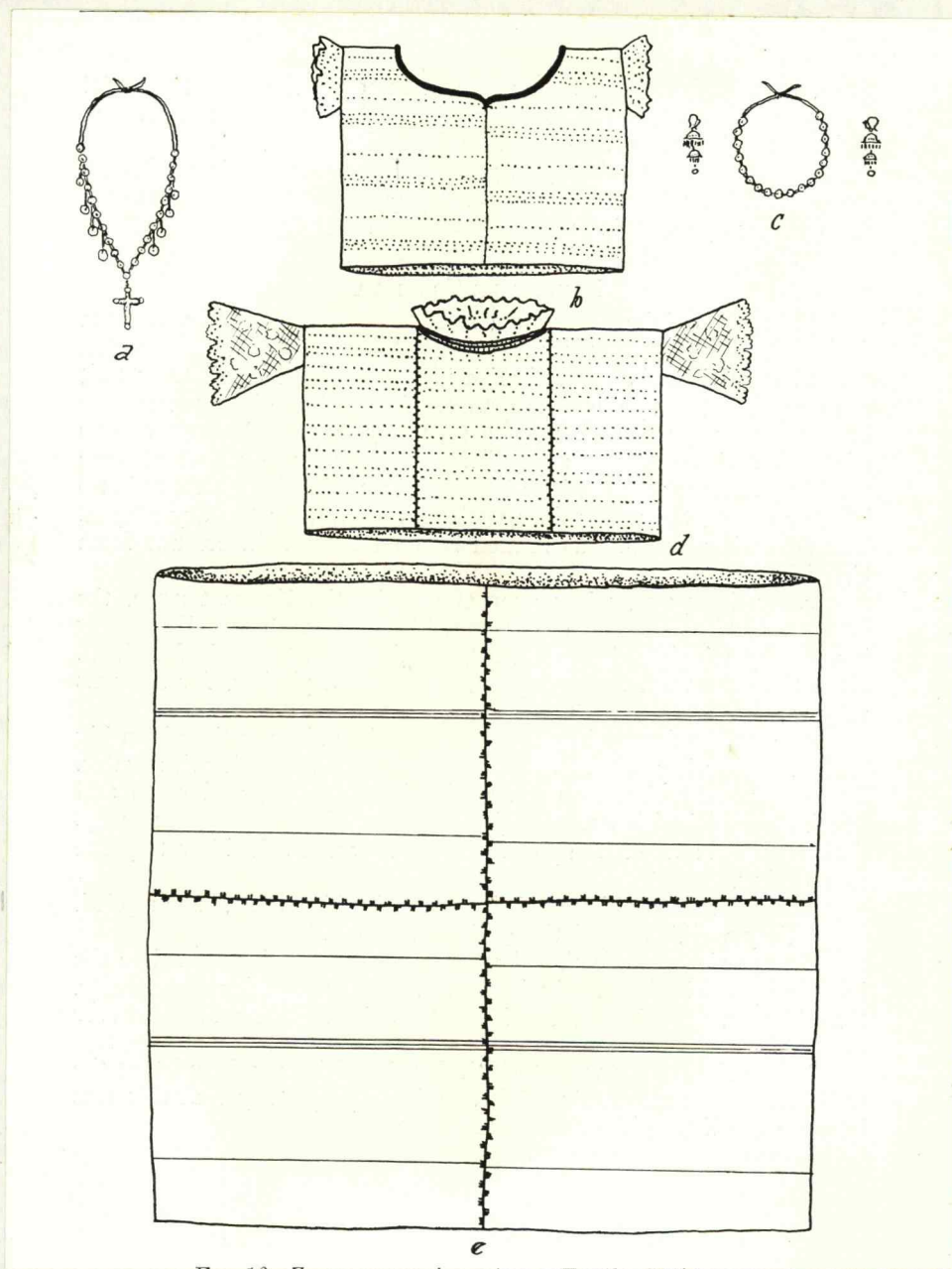


PLATE LXVI - Garments worn by the Zoque woman.
 The huipil at the top is worn as a blouse, and
 the one below is a head covering. The skirt is
 made of two strips of cloth and sewed together.

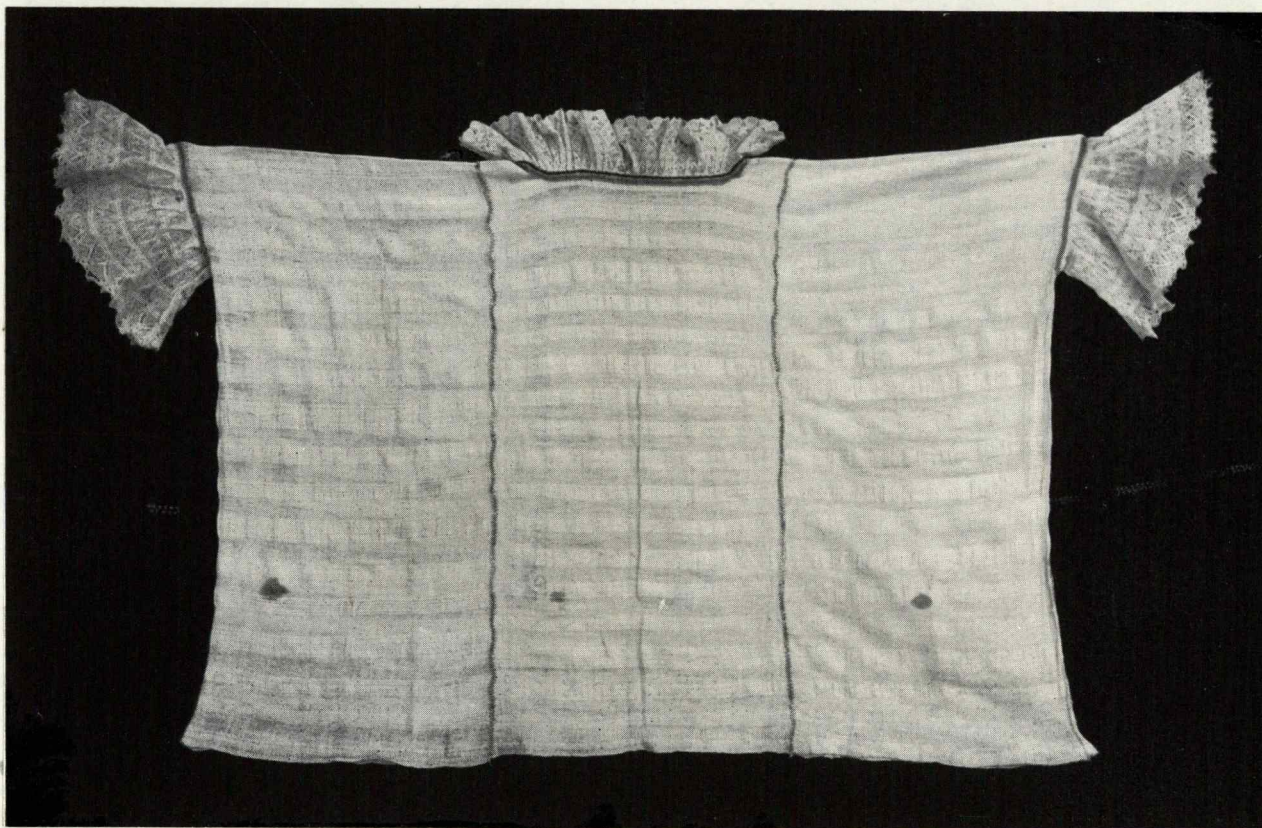


PLATE LXVII - Handwoven huipil used for headdress. This is made in three sections and embroidered together.



PLATE LXVIII - Zoque woman wearing a huipil
to church.



PLATE LXIX - Zoque woman with a huipil headdress. The women wear this garment in this manner when they go to market.

bottom. (plate LXIII) Natives who cannot afford the elaborate huipil wear one of coarse cotton with a stamped design to simulate embroidery. From a distance these cheaper garments look like the more expensive pieces.

When two or more strips of weaving are joined to make a garment, a stitching similar to faggoting is worked in colored yarn and adds to the decorativeness of the costume. (Plate LXIV) The writer saw many huipils made of wool and cotton in which the entire garment was covered with cross-stitch designs. The colors are bright, and the design is usually geometric. This style huipil reaches almost to the knees of the wearer and involves a great deal of work. When bands of embroidery are used, they are placed around the neck, over the shoulders, and down the front. (Plate LXV)

The Zoque Indians wear huipils as a headdress. (Plate LXVI) A fine piece of cotton is woven, and a lace ruffle is added around the neck and at the small armholes with pastel rayon stitching at the joining seams. (Plate LXVII) When this garment is worn to church, the neck ruffle is placed above the forehead, and the two sleeve ruffles hang over the shoulders. (Plate LXVIII) When the huipil is worn on the street or to the market, one or both sleeves are brought over the top of the head. (Plate LXIX)

Huipils made of sheer, loosely-woven material with bands of woven designs are usually shorter and are tucked into the skirt.



PLATE LXX - Types of Zoque huipils of Chiapas. These are woven by hand and embroidery is done in black.



PLATE LXXI - Bag of handwoven blue, dark-blue, and white wool. Animal and bird designs are seen in the handle.

The Zoque huipil resembles some of our modern blouses. Large round neck openings are edged with embroidery, ribbon, or with lace ruffles. All of these huipils the writer saw were trimmed in black and had a black design embroidered on the edge of the ruffle. (Plate LXX)

Colorful huipils are being replaced by short-sleeve blouses made of commercially-woven material. Bands of embroidery are sewed on or are worked directly onto the material. The writer saw blouses with gathers held in place with embroidery similar to our smocking.

Bags are decorative and are used for a variety of purposes. The Otomi and Huichol Indians use many bags which have a geometric or natural design woven into them. Others are covered with embroidery. (Plate LXXI) The straps by which these bags are carried are made similar to the belts, and some have quite elaborate designs woven into them which may or may not match the colors and the designs in the bags. Most of the bags of this type the writer saw were about the same size - approximately twelve inches square.

The Huichol men wear belts made of small bags about three inches square. Two bags are left open as pockets, and the others are sewed shut. A yarn embroidery stitch closes the bag, and the same yarn is braided for an inch before another bag is added. Each belt is made up of ten to twelve bags and forms a regular part of the costume of this tribe.



PLATE LXXII Modern bag made in the State of Puebla



PLATE LXXIII - A bag
woven of maguey fiber
and decorated with
two pink stripes and
flowers embroidered
in maguey fiber.



PLATE LXXIV - Ayate woven of maguey fiber.

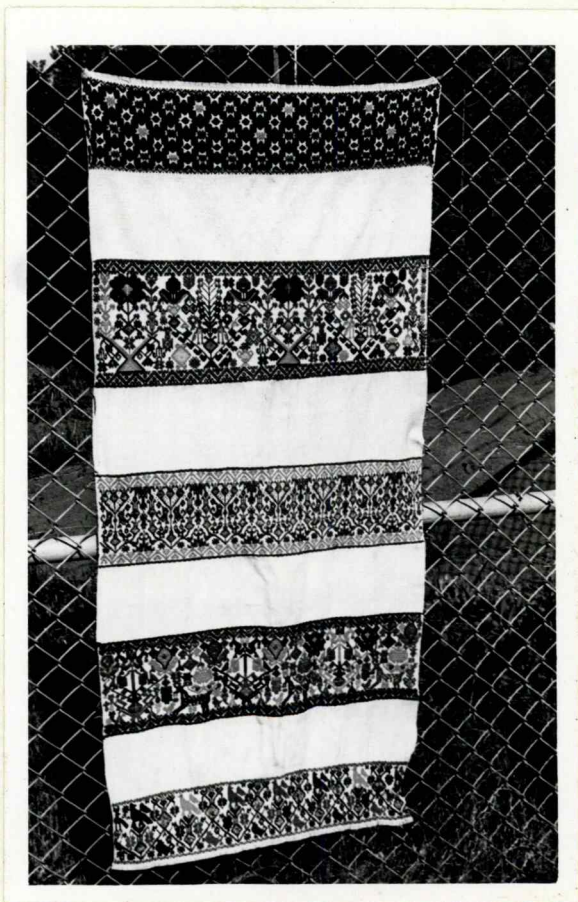


PLATE LXXV - Ayate. Woven of heavy cotton yarn and embroidered in bright colored wools. This garment is over one hundred years old.

Eighteen-inch bags are woven in the State of Puebla and are used by the natives for shopping. They are made of heavy cotton yarn with geometric designs and conventionalized figures woven in. This is modern commercial weaving and is crudely done. (Plate LXXII)

Maguey-fiber bags are woven by the men in the Jalisco state prison in Guadalajara and are sold in that area. (Plate LXXIII)

Ayates, or carrying cloths, may be used by men or women. Among the Otomi Indians the ayate is a marriage garment. The bride's family makes a strip three-fourths of a yard wide and one and one-half yards long, and the groom's family makes a strip the same size. The ceremony consists of sewing these two strips together. Because of the sentimental attachment these ayates are hard to buy (42:160). Some of the ayates are woven of a very fine cotton and are used as altar cloths; others are of coarser cotton or are made of maguey fiber. (Plate LXXIV) All of the ayates have bands of embroidery. (Plate LXXV) The women carry produce to the market tied in an ayate, with the bundle hanging down their backs and the weight of the loads on their foreheads. Men may use them as bags to carry work tools when the need arises.

The types of textiles used in the homes vary according to the customs of the people. Ceremonial napkins, about

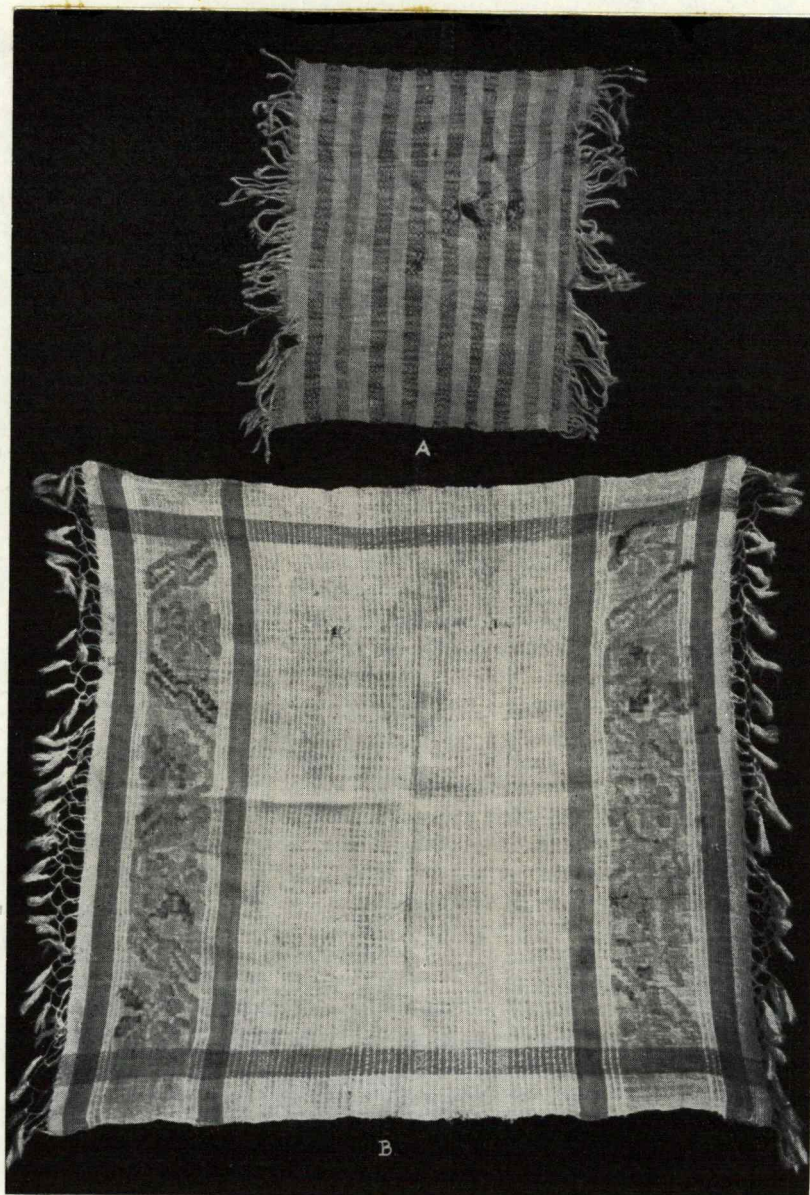


PLATE LXXVI - a, Ceremonial napkin in blue and white stripe. b, Tortilla cloth with a design woven in.

seven inches square, woven of blue, white, and natural colored cotton, are seldom seen at the present time. (Plate LXXVI) Originally the napkins were used during the ceremony of drinking at fiestas.

Tortilla cloths are used by the Zoque Indians to keep the tortillas warm when they have to be carried. Other tribes, as the Otomi, Mixtecan, Huicholes, and others, use their lovely embroidered bags for the same purpose.

Bedspreads, woven in strips and sewed together, are heavily embroidered and are used in the more elaborate homes. In many of the small villages seen by the writer, windowless adobe dwellings are used only for sleeping. Cooking and other routine activities are carried on out-of-doors. For this type of living few household luxuries are desired.

In the villages where the houses are a bit more elaborate and have windows, bright curtains, usually yellow, are used. It produces a startling effect to see the vivid accent of color against the somber exterior.

Throughout Mexico there is a strong contrast between the native Indians and the people in the large cities, who adopt the customs of the United States. In some areas it is hard to differentiate between the Mexicans and the foreign visitors. Other regions have retained enough color to make them interesting. Guadalajara is a cosmopolitan city, but the Spanish influence is very strong. The aristocratic women



PLATE LXXVII - The woman's cape worn in Tehuantepec. This headdress is made of starched lace and is worn in this manner or brought down over the shoulders as a cape.

come to church wearing lovely black lace mantillas as head coverings. Next to one of these women may be a barefoot Indian woman with her head covered with her rebozo.

One of the most colorful costumes still worn is that of the Zapotec Indians of Tehuantepec, Oaxaca. (Plate LXXVII) Hewett describes the women and their costumes as follows:

The most interesting branch of the Zapotec stock is the Tehuana of the Isthmus. The women of Tehuantepec are famous for their natural beauty, faultless complexion, Juno-like figures, and unique costumes. They are larger than the men, more energetic, more intelligent. The costume that makes them so conspicuous, wherever seen, consists of a skirt, usually of velvet, often embroidered, a broad white band around the bottom; a waist as brilliant as the velvet jacket of a Navaho, and, most spectacular of all, a combination of headdress and cape. It is a snowy white, always clean and starched. The cape-like part of it, sometimes of lace, may be worn over the shoulders, falling to the waist, with the upper part serving as a collar; again, the cape, stiffly starched, may be worn as a headdress, framing the face.....(29:330).

Numerous costumes are worn in the many dances, celebrations, and fiestas held during the year. Each special event requires a costume quite different from other costumes but equally as colorful and interesting.

The beautiful embroidered work on the pastel satin trousers worn by the bull fighters is done by hand. The work is fine and with the other significant decorations added to the costume makes the general effect one of elegance. The writer was told some of the toreadors paid as



PLATE LXXVIII - Man's trousers worn in the
Danza de los Negritos.

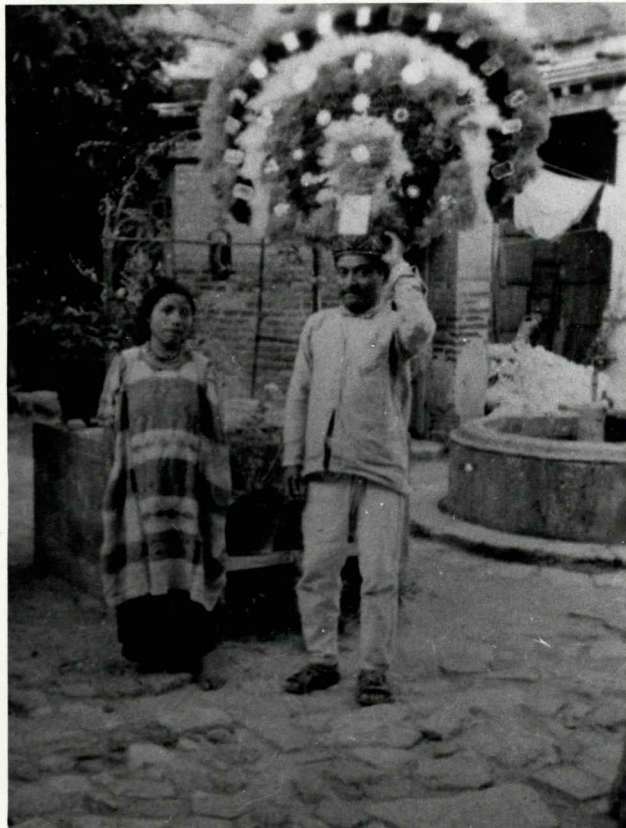


PLATE LXXIX - Man in Yucatan wearing
an elaborate feather headdress.
Woman is wearing a huipil.



PLATE LXXX - Theatrical costume with
heavily embroidered collar.

high as one thousand pesos for one costume.

China Poblana costumes, very modernized now, are still colorful. The bright red skirts have bands of green at the top and bottom. Sequins are spattered over the entire skirt, and a large eagle is worked in the center front. The blouse is of voile with a three-inch band of embroidered flowers at the neck and sleeves. A six-inch wide sash of green, white, and red is wound around the waist, over the shoulder, in back of the neck, and down the front to join the waist band. The sash reaches to the bottom of the skirt and is edged with long fringe.

Trousers worn by the men in the Danza de los Negritos are very interesting. (Plate LXXVIII) There are no side seams to the garment, and a cord is laced through several eyelets at the top to make it fit over the hips. The dance costume of this type the author saw was made of a black material similar to outing flannel and was lined with a pink-and-white striped outing flannel. The bright flower design in the front was worked in colored rayon or silk yarn and trimmed with beads. The costume is very festive.

In all of Mexico there are fine differences in the costumes worn by one tribe in different areas. As the native came in contact with the people of foreign or mixed ancestry, daily costumes and outfits used for festivals changed. (Plate LXXIX) (Plate LXXX) Some celebrations and dances with a religious theme, banned following the

revolution of 1910, are gradually being revived. Many of the old costumes and dances are forgotten, but interest in reviving them has been aroused. It is hoped records of the old costumes can be gathered through photographs of garments still in existence and through conversations with some of the older natives.

CHAPTER V

SUMMARY

Fifty years ago Mexico had not felt the effects of the tourist trade. People were carrying on work in the arts in about the same way as they had been doing for many years. Foreigners visiting the country demanded textiles and other handicrafts which could be taken home, and the natives tried to meet these demands. More woven articles had to be produced; so the quality of yarns, dyes, and workmanship was lowered. Many pieces of textiles brought by tourists are poor examples of Mexican art and are never used by the Mexicans in their daily living. When those of us who visit Mexico show a greater interest in their original art work instead of trying to convert them to our ideas, there will be more incentive for the natives to continue doing the things they do best.

A few years ago a movement was started in Mexico by the socially prominent classes to develop an interest in the native handicrafts. Since that time the nicer handwoven fabrics have become popular, and interest in preserving the older pieces has increased.

Costumes typical of certain regions are rapidly disappearing and are being replaced by cheap, ineffective American garments. The country is thus losing much of its color,

and we in turn are losing our contact with a culture much older than our own.

The traveler going to Mexico must realize the country is made up of a people with a different background and with different ideas from those we possess. The real Mexicans are now found chiefly in small villages and in the rural areas. They have much to offer in their restful simplicity and in their natural creative ability.

Those interested in and appreciative of what the Mexican people have to offer are graciously received and return to their own country with a deep feeling of respect and admiration for our Mexican neighbors.

CONCLUSIONS

There is a great deal of material written about the textiles of most countries during all periods of their history. Egypt, Italy, France, Peru, and other nations have had their developments in the field of textiles recorded. Little attempt has been made to uncover information about early weaving in Mexico. The author has collected the smatterings of material available on this subject and with the newer work being done has presented a picture of the development of Mexican textiles.

This material should be of value to college and high-school textile departments and to students who are interested in the field of historical textiles. Design motifs, techniques, and colors can be reproduced on modern garments by the high-school girls, especially by those who have the type of beauty similar to that of the Mexicans.

Students studying the Spanish language and history might acquire a greater insight into the life of the Mexican native's family life.

During the last few years textile designers and costume designers have turned to Latin America for inspiration. Few people have tried to learn about the earlier and lovelier works made before the tourist trade changed the type of work produced. The interesting modern work of the new textile designers has not yet reached the market in the United

States. Most of the material we find here has been planned and made under the direction of foreign interests and is very poor.

The study of textiles of any country involves the study of its geography, history, and people. When little is known of a nation, there is liable to be a great deal of misunderstanding. A student working in textiles must understand the people to get the most out of her work. With such increased understanding will come a greater understanding of the nation as a whole. An appreciation of the textile work of Mexico is one way of instilling a feeling of good international relations with a country which has a direct influence on our well-being.

RECOMMENDATIONS

The field of Mexican textiles has only been sampled; there is a great deal of work yet to be done. Mr. and Mrs. Cordry in connection with the Southwest Museum are studying various tribes in Mexico, but many phases of their textile crafts are untouched. The writer suggests some additional studies which might profitably be made.

1. A comparison of the zarapes of various tribes and the ways in which these have changed through the years.
2. The style, size, shape, and ways of wearing the sombrero in different regions.
3. A biographical study of Mexico's textile designers.
4. A study of the winged serpent as used in designs in various media. This is the most generally used motif and has a decided touch of idolatry.
5. Costumes and designs of the ruling house during the period of Carlotta and Maxmillian and the years just preceding.
6. A comparative study of Guatemalan, Peruvian, and Mexican textiles.
7. Dance and fiesta costumes in Mexico.
8. Industrial developments in the textile field.
9. Any garment used in the everyday life of the native might be singled out and a great deal of work done to explain its making and use.

BIBLIOGRAPHY

1. Allen, Helen Louise. American and European Hand Weaving. Madison, Democratic Printing Co., 1939.
2. Allen, Helen Louise. Mexican Lace Weaving. The Weaver 7:4-7, 1941.
3. Antrobus, Mrs. Guy. Needlework Through the Ages. London, Hodder and Stoughton, 1928.
4. Art News. Brooklyn Shows Mexican Textiles. New York, Art News, 1933.
5. Atl, Dr. A. Plenn, trans. The Purple Fabrics of Oaxaca. Mexican Folkways 1:22-23, 1925.
6. Atwater, Mary. A Primitive Weave. The Weaver 6:3, 1941.
7. Augur, Helen. The Tired Madonna of los Remedios. Travel 69:16-17, 1937.
8. Beals, Ralph L. The Aboriginal Culture of the Cáhita Indians. Berkeley, University of California Press, 1943.
9. Beals, Ralph L. The Acaxie - A Mountain Tribe of Durango and Sinaloa. Berkeley, University of California Press, 1933.
10. Beals, Ralph L. Cherán: A Sierra Tarascan Village. Washington, D. C., United States Government Printing Office, 1946.
11. Beals, Ralph L. Ethnology of the Western Mixe. Berkeley, University of California Press, 1945.
12. Brewster, Mela Sedillo. Mexican and New Mexican Folk Dances. Albuquerque, University of New Mexico Press, 1937.
13. Business Week. Postwar Fizzle. Business Week 733:50, 1943.
14. Carr, Harry. Old Mother Mexico. Boston, Houghton Mifflin Co., 1931.
15. Chase, Stewart. Mexico - A Study of Two Americans. New York, The Macmillan Co., 1931.

16. Clavigero, Abbe D. Franceseo Saverio, Charles Cullen, trans. The History of Mexico-Collected from Spanish and Mexican Historians from Manuscripts and Ancient Paints of the Indians. London, Joyce Gould, 1807.
17. Cordry, Donald Bush, and Cordry, Dorothy M. Costumes and Textiles of the Aztec Indians of the Cuetzalan Region, Puebla, Mexico. Los Angeles, Southwest Museum, 1940.
18. Cordry, Donald Bush, and Cordry, Dorothy M. Costumes and Weaving of the Zoque Indians of Chiapas, Mexico. Los Angeles, Southwest Museum, 1941.
19. Corey, Herbert. Among the Zapotecs of Mexico. The National Geographic Magazine 51:501-553, 1927.
20. Crawford, M.D.C. 5000 Years of Fibers and Fabrics, Handbook of the Exhibit. New York, The Brooklyn Institute of Arts and Sciences, 1946.
21. D'Harnoncourt, René. Mexican Arts. New York, The American Federation of Arts, 1930.
22. Diaz, Bernal. A. P. Maudslay, trans. The Discovery and Conquest of Mexico. London, George Routledge and Sons, 1928.
23. Dutton, Nellie. The Spanish Colonial Ornament. Philadelphia, H. C. Perleberg, 1935.
24. Frank, Harry A. Trailing Cortez Through Mexico. New York, Frederick A. Stokes Co., 1935.
25. Freeman, Joseph. Mexico Builds For the Future. Travel 70:6-12, 1938.
26. Garner, Bess Adams. Mexico - Notes in the Margin. Boston, Houghton Mifflin Co., 1937.
27. Gersted, Alice R. A Modern Finishing Plant in Mexico. Rayon Textile Monthly 23:327-328, 1942.
28. Gersted, Alice R. Progress in the Mexican Textile Situation. Rayon Textile Monthly 23:556, 1942.
29. Hewett, Edgar Lee. Ancient Life in Mexico and Central America. New York, The Bobbs-Merrill Co., 1936.

30. Joyce, Thomas Athol. Maya and Mexican Art. London, The Studio, 1927.
31. Joyce, Thomas Athol. Mexican Archaeology. New York, G. P. Putnam's Sons, 1914.
32. Kelemen, Pal. Medieval American Art. New York, The Macmillan Co., 1943.
33. Lebow, N. Trends of the Textile and Dye Markets in Latin America. Rayon Textile Monthly 22:268-270, 1941.
34. Lemos, Pedro. Mexico, Land of Arts and Crafts. School Arts Magazine 31:359-370, 1932.
35. Mason, Gregory. Columbus Came Late. New York, The Century Co., 1931.
36. Mason, J. Alden. Preserving Ancient America's Finest Sculptures. The National Geographic Magazine 68: 537-570, 1935.
37. Mayer, Brantz. Mexico As It Was and As It Is. London, New World Press, 1844.
38. Mena, Ramon. El Zarape. Mexican Magazine 2:7-35, 1926.
39. Merida, Carlos. Mexican Costume. Chicago, The Pocahontas Press, 1941.
40. Museum of Modern Art. Twenty Centuries of Mexican Art. New York, Museum of Modern Art, 1940.
41. Nuttall, Zelia. Ancient Feather Work at the Columbian Historical Exposition at Madrid. Report of the United States Commission to the Columbian Historical Exposition at Madrid. Washington, D. C., Government Printing Co., 1895.
42. Ogelesby, Catherine. Modern Primitive Art. New York, McGraw-Hill Book Co., Inc., 1939.
43. Ogelesby, Catherine. Modern Primitive Arts of Guatemala and the Southwest. New York, McGraw-Hill Book Co., Inc., 1939.
44. Osberne, Lilly de Jongh. Guatemala Textiles. New Orleans, The Tulane University of Louisiana, 1935.

45. Palmer, E. Indian Method of Preparing Wool and Cotton. *The West American Scientist* 7:226-227, 1891.
46. Pauer, Paul Silicio. The Apparel and Hair Dressing of the Women of Yalalag. *Mexican Folkways* 1:23-24, 1925.
47. Reath, Nancy Andrews. The Weavers of Hand-Loomed Fabrics. Philadelphia, The Pennsylvania Museum, 1927.
48. Redfield, Robert. An Ancient Art In an Ancient Village. *Mexican Folkways* 4:199-203, 1928.
49. Roberts, Frank H. H. Jr. In the Empire of the Aztecs. *The National Geographic Magazine* 71:725-750, 1927.
50. Roth, Ling. Studies in Primitive Looms. Halifax, F. King and Sons, 1934.
51. Schnitzler, Hermann. The Republic of Mexico - Its Agriculture, Commerce, and Industries. New York, Nicholas L. Brown, 1924.
52. Seler, Edward. Ancient Mexican Feather Ornaments. Bureau of Mexican Ethnology, Bulletin no. 28, Washington, D. C., Government Printing Office, 1904.
53. Spinden, Herbert J. Ancient Civilization of Mexico and Central America. New York, American Museum Press, 1922.
54. Starr, Frederick. In Indian Mexico. Chicago, Forbes and Co., 1908.
55. Toors, Frances. Mexican Popular Arts. D. F., Mexico, Frances Toors Studio, 1939.
56. Tozzer, Alfred. Excavation of a Site at Santiago Ahuizotla, D. F. Mexico. Washington, D. C., Government Printing Office, 1921.
57. Vaillant, George C. Aztecs of Mexico. Garden City, Doubleday, Doran Co., Inc., 1941.
58. Watkins, Frances E., and Amsden, Charles A. The Native Weaving of Mexico and Guatemala, An Exhibit at the Southwest Museum. Los Angeles, Southwest Museum, 1938.

59. Willoughby, C. C. Twine Weaving. *American Anthropologist* 3:201, 1901.
60. Wilson, Robert A. *Mexico: Its Peasants and Its Priests*. New York, Harper and Brothers, 1855.
61. Wissler, Clark. *The American Indian*. New York, Oxford University Press, 1938.