

CHARACTERISTICS OF ANCIENT PERUVIAN TEXTILES
IN COLLECTIONS AT OREGON STATE COLLEGE
AND THE SEATTLE ART MUSEUM

by

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CHAPTER I

INTRODUCTION

Statement of the Problem

The department of clothing and textiles and related arts in the School of Home Economics at Oregon State College has recently purchased a small collection of Peruvian textiles. In addition to these, there are at Oregon State College, individually- and department-owned textiles from ancient Peru. There is no record of the exact location where any of these were excavated nor have they been analyzed and classified. This will be necessary in order to reveal the historical as well as technological significance of them.

The Seattle Art Museum has a rather complete collection of Peruvian textiles that have not been analyzed and classified. With this information the collection will be of greater historic value.

Purposes of the Study

The purposes of the study are to analyze the ancient Peruvian textiles at Oregon State College and the Seattle Art Museum and to classify as to the location, cultural period and approximate date, describing the fiber, weave, designs and colors.

Location of the Study

The study will be made at Oregon State College and at the Seattle Art Museum.

Source of Materials

The Peruvian textiles will be the source of material.

A study has been made of looms similar to those on which the ancient Peruvians wove their textiles. It has been possible to reproduce on modern looms many of the weaves and patterns which have given a greater understanding of the problems and limitations of the hand weaver.

Reports of archaeological excavations in Peru and historical books supplied background material which showed the influence of custom and religion on the development of their textiles.

Photographs of Peruvian textiles in other collections were examined and information concerning them studied.

Visits to museums have been valuable in providing an opportunity to see many fabrics from each age together and collections other than those studied.

Limitations of the Study

Very few of the pre-conquest textiles that could be found at the time of the Spanish invasion are now in existence. As the Spanish soldiers marched through the country they carried off everything that was of any value to them and countless treasures were destroyed in their greed for gold. Many priceless textiles were burned in order to reclaim metal threads that had been woven into the fabric. Through sheer stupidity much was left to the elements to rot and even many fabrics that they used they mistreated so that later they were worthless even as fragments.

It is now illegal in Peru to carry out of the country any ancient textile no matter how small the scrap may be or how useless it may seem to be. This limits the study until more textiles will be permitted to leave the country of Peru.

Historical Background

The world of the Ancient Peruvians was the section of western South America which reaches from northern Ecuador, Peru and Bolivia with portions of Columbia,

Brazil, Argentina and Chile. This, like ancient Gaul, is divided into three parts: West of the Andes' ridge, an area about 1,500 miles long and less than 100 miles wide stretches along an arid desert coast where the sun and day mean heat, dryness and exhaustion. Through this barren world of desert and death flow rivers which make green valley islands that have an even, balmy climate. At night the moon seems to bring coolness, dew, moisture, refreshment and growth. It is in these well-watered portions where human life has been almost wholly confined.

Far above the series of coastal valleys there are other valleys of great importance. In contrast to the delightfully mild climate of the coast, the weather in the lofty Andes is usually brutal with ice, lightning, thunder, tempests and sere, dry summers. In the higher places there is often snow, and so very few trees that fires can be used only for cooking because of the lack of wood. During the winters the people weave wonderful blankets, rugs and garments from the wool of the alpaca, llama, guanaco and vicuna. When the sun comes out during the rainy season many plants grow, and diversified crops provide food.

East of the Andes there is the jungle country called the "green hell". Even today only a peculiar type of being

can survive the incessant, twelve-month rain torrents, which create horror and disease, rank vegetation, swamps, swarms of mosquitoes and other voracious insects. Here, malaria, beri beri, typhoid, leprosy and horrible skin ailments prevail. The equatorial heat and dampness turn everything to rust, mould or powder. From this area there is nothing that has come down to us from the past. It is a land of danger and mystery and almost entirely cut off from the rest of Peru.

How the Indians of South America got there or where they came from, no one knows or ever will know. Speculative anthropology has brought them by sea from Polynesia, the Orient, and even from Africa. They have been thought to have come from the north by canoe, from Argentina or Brazil and from Siberia via Alaska and down the coast through Central America. The Book of Mormons in 1 Nephi chapter 18 tells of the lost tribe of Israel which landed in North America and later spread southward. However, they came; we have archaeological evidence that the migration started approximately 25,000 to 10,000 years ago. (1) As long ago as 1,000 B. C. in present Peruvian Ancash province people were expressing themselves in stone carvings very similar to those on Easter Island. From about 100 B. C. to 500 A. D. many coast peoples were

producing notable ceramics and metal work.

The ancient Peruvians attained a high culture or civilization and developed certain arts and industries to a point never attained by any other American race. Many of their textiles, including their feather costumes, are beyond compare and reached a stage of perfection that has not been surpassed by any found in excavation of any other past civilization.

There is no evidence of the beginning of the art of spinning and weaving in Peru as the earliest woven fabrics show the same perfection and variety of techniques as those made later. Textile manufacturers and experts marvel at the perfect yarns, the number of techniques and remarkable skill of the weavers. William S. Murphy in his "Textile Industries" says of Peruvian threads, "It may be that the makers of Cashmere shawls, Cacca muslins, Aztec veils, and Peruvian robes inherited the long labors of a thousand generations; but so far as the spinners of what we call modern civilization are concerned, the ideal has been realized and belongs rather to the past than to the present or to the future. The perfect

1. Means, Ancient Civilization of the Andes, p. 29.

thread is not to seek; it has been made." (2) Two 7-ply yarns have been found that far surpass in fineness those that can be made on the modern machine with the same materials. While Gobelin tapestries seldom have more than 20 warps to the inch, one Peruvian tapestry has been found that has 42. "In tapestry Peru reached its highest textile development. The harmony of color, the beauty and fastness of the dyes, and the perfection of the spinning and weaving, place these fabrics in a class by themselves, not only as compared to other textiles of this land, but as regards those of any other people." (3)

The natural conditions of soil, winds, sunshine, and skies did something for and to humanity that has not been done anywhere else in the world. The arid climate and peculiar burial customs have preserved for us textiles woven more than 1,000 years ago. The dead were often buried in a sitting position, dressed in elaborate clothing and bound with a simple white cloth. It is some of these fabrics that we have today. Many of these webs are as strong and their colors as bright as they were when taken

2. Mead, Old Civilizations of Inca Land, p. 36.

3. Mead, p. 37.

from the primitive looms. "The list of Old World textiles is a part of the confused history of three continents, Asia, Africa, and Europe. Nowhere is there told, in all this vast area, a complete textile story. In all the world there is only one region where we may study a complete textile history, the creative efforts of a single racial group, living within a known and contiguous geographical area, over an immense period of time. In Peru, west of the Andean rampart, from innumerable graves along the Pacific coast, one of the world's greatest, and certainly the world's most complete textile art has been preserved for mankind . . . The enormous quantities of fabrics taken from these graves contain every basic technical method of fabric construction, every type of fabric decoration known anywhere else in the world, and also a large number of technical methods not as yet found outside of these fruitful graves." (4)

On the word of an English authority "it is not too much to say that if the whole of the textile art of the Old World were wiped out it could be reconstructed practically in its entirety without loss of technique from a study of the textile products of ancient Peru". (5)

4. Crawford, The Conquest of Culture, p. 209, 210.

5. Antrobus, Needlework Through the Ages, p. 106.

These most extraordinary textiles of a prehistoric people were woven on looms that consisted of two sticks, one at the top and the other at the bottom, over which the warps were stretched. In the ordinary loom, a heald rod lifted every other thread, forming the shed. The weft was beaten up with a weave sword, which was the only other implement used besides the bobbins and spindles. When tapestry was made, the held rod was not used, the shed being formed by a weave dagger and sometimes with the fingers. The lower bars were held securely by being attached to the weavers' waists. On the flaring rim of a vase found near Chan-Chan there is painted the scene of an early Chimu cloth factory. There is a person who apparently is in charge seated under a canopy and elaborately dressed. Three other men are getting instructions from him. In the next five sections there are women weavers, each provided with a bit of cloth to copy and a jug containing refreshment. There is then a kitchen with an official in charge and a workman to help prepare food that is shown in the process of preparation and being cooked. It is from this and other pictures from later periods that give us the story of the Peruvian loom.

There were two kinds of cotton in ancient Peru. The white is a long staple fiber that is even in diameter, has a great many convolutions per inch and averages from 1

to 1-3/4 inches in length. The other is a reddish brown and about $\frac{1}{2}$ inch shorter with fewer twists. Cotton was grown along the coast but because of the intercommunication cotton was taken to the mountain area where it was used as a medium of exchange for the wool of the highlands. Conquests were also responsible for the wide use of all fibers which were used by all cultures.

One factor in Peru which differs from all other textile areas in the Americas is the presence of the llama, guanaco, alpaca and vicuna in large numbers. The fibers from these animals are susceptible to dyeing and take colors in the same manner as the wools of Central Asia and the silks of China. This stimulated the immigration of the gifted people and is responsible for the great numbers of rich colors and beautiful color combinations.

There are a few references to the use of various other animal substances being used in textiles, but these are of minor importance and are very seldom found.

There has been very little study of ancient dyes. Mead says that the dyes were vegetable, animal or mineral and always color fast. The early Peruvians understood the use of mordants to a high degree thus being able to make the fibers more receptive to the dye and with superior retention. Both wool and cotton were available in natural

shades of brown. Much of their black was human hair in its natural color which was combined with vicuna for a lustrous blue-black effect. The locality determined the colors and shades used. All colors were known in all areas, but each locality preferred certain colors and combinations of colors.

The importance of Peruvian textiles cannot be overestimated. Archaeologists have never discovered in South America a single trace of writing among the native population. It is only through folklore and a study of the designs found in the ancient ruins that the story of people can become known. The textile fragments rescued from the debris of immemorial time constitute the autobiography of the Indians. In their textile designs the Peruvians pictured their mode of dress, their methods of hunting and fishing, many of their industries, the warfare, the foods they used, their social and cultural life and the advancement of their civilization.

Whatever the form or pattern, "it had a common significance, and this was mostly religious." (Antrobus, p. 115) They show more than any other people a clear conviction of unending life in their burial customs. It was the dead that were the powerful, for their spirits were with the gods and they were free to intercede for those on earth. In the tombs was placed everything that

would help the deceased to gain an important place in the next world. The power was supposed to be in the head, (which explains the decapitation of the enemy) and so the sculptured heads of personages who had been important on earth were placed in the grave to reinforce the power of the dead man. For similar reasons elaborate textiles with symbolic significance were placed on the mummy and wrapped around him.

The Andeans had an implicit belief in the omnipotence of symbols. Regardless of the naturalness of the design, the idea of appealing to the aesthetic feelings was not the purpose. (Every design in a fabric is symbolical.) When we see buds, blossoms, tendrils or fruit in a picture we are seeing the words "fertility" and "growth". Personages, colors, plants, flowers are all symbols that will have meaning in a spiritual world. It is through these symbols that the men speak to their gods and the gods speak to the men. They are visible wishes, prayers, anxieties and thoughts of men who live in intimate dependence on nature. It is through symbols that their gods, spirits and demons become visible. Behind each figure, symbol and color there stands a sacred law which gives us woven and embroidered sacred writings of prehistoric Peru.

Thus we find the missing hieroglyphic writings. Some day we shall learn how to read this "writing", and the thousands of textile pictures will form a "library" where we will find the past speaking to us in the magic "words" of ancient days.

The folklore of Peru, as told by the natives to the Spaniards when they first entered the country, very often proved to be based on fact by the archaeologists. It is upon a combination of folklore and archaeological data that Means used when formulating the cultural periods of Peru in his Study of Peruvian Textiles. The same classification will be used for this study.

CULTURAL PERIODS IN THE ANDEAN AREA AS SHOWN BY
MODERN RESEARCH INTO FOLK MEMORY
AND BY ARCHAEOLOGY as in Means, p. 48

Coast Cultures	Approx. Dates	Mountain Cultures
Archaic cultured folk gradually arrive in small groups from the north in possession of rudiments of various arts and industries.	?B.C. to A.D. 500	Archaic cultured people arrive from north through inter-Andean plateaus and Amazonia. They gradually built up the advanced archaic culture known as Tiahuanaco I, notable for its sculpture and its architecture.
Gradually Early Chimu culture in the northern part of the coast and Early Nazca in southern part emerge from the archaic stage and attain to brilliant individuality. Intensive agriculture architecture in adobe, fine ceramics, and superb textile art all characteristic of this period.		
Contact and conflict with the mountain folk	500 to	Contact and conflict with the coast-country folk.
Conventionalization in art and other characteristics derived from Tiahuanaco II civilization predominate on the coast throughout its length.	600 to 900	Inaugurated by influences from the coast, the Tiahuanaco II culture, with distinctive characteristics, flourishes far and wide through the highlands.
A period of comparative poverty in cultural matters due to break-down of Tiahuanaco II influences. Earliest phase of Late Chimu and Late Nazca.	1100 to 1400	One tribe, that of the Incas, begins a spectacular climb to imperial power, gradually imposing its sway over all rival societies and laying the foundations of a true empire.

Coast Cultures

Approx.
Dates

Mountain Cultures

The Incas conquer the coast and establish their imperial power and much of their culture there, receiving, however, much local color from Late Chimu and Late Nazca culture.

1400
to
1530

The Inca empire reaches its greatest power and its greatest glory. A vast imperial society ably governed and well maintained. But towards the very end of the period, signs of imminent disruption appear.

I. The Early Chimu Culture, 0-600 A. D. The Early Chimu culture extended along the northern part of the coast of Peru about 450 miles from the Gulf of Guayaquil down to the Pativilca Valley. The textile art was highly developed and the general character was realistic. There is no record of any of these textiles in existence today.

II. Early Nazca, 0-600 A. D. This culture was located on the southern coast, mainly in the Ica and Nazca Valleys. The textiles are characterized by designs in richly varied coloration. The textiles glow with splashes of scarlet, crimson, pink, orange, yellow, green, blues, purple, brown, gray, black, and white. There are many mythological monsters, part human and part animal. Their meaning is lost but we can admire the coloring and the skill with which they are drawn. The general characteristics are symbolical creatures, formalism and conventionalism. The characters and characteristics most frequently

used are:

A. The spotted cat, a benevolent creature with leaves or pods in its front paws. It is considered the "Bringer of the Means of Live". (Means, Study of Peruvian Textiles, p. 15)

B. The cat demon which is sometimes part human, sometimes part bird. It almost always has the decapitated human heads of slain people and sometimes the whole body.

C. The bird demon is usually associated with decapitated heads attached to it in various ways. It is conventionalized and has no human attributes.

D. The multiple-headed god consists of two or more unlikelike faces joined together in lines. It is far removed from realism, has four or fewer digits, and has curling protuberances sticking out all around the face.

E. The centipede god sometimes has a human face, hands and feet, and sometimes it is all animal. It, too, grasps decapitated heads.

F. There are many other figures ranging from fairly realistic representations of human or pseudo-human figures to depictions of reptiles, insects, fish, birds, crustacea, and other life-forms all of which are portrayed in gorgeous coloring.

G. Minor details include the protruding tongue; the mouth mask; the headdress of a broad cap of two or more layers, while in the center over the eyes there is usually a small, conventionalized face. Sometimes there is a serpent-like cloth from the top of the headdress. Always the headdress is ornamented with secondary faces, human, feline, or nondescript. Ceremonial staffs or weapons are borne with great frequency, with clubs of various types, spears and spear-throwers, knives, and sling shots. They used face painting in stripes or large patches of color. Two or three values of the same color were used in one piece and from 7 to 13 colors. There was much consideration for detail, curvilinear figures and few geometric forms. Webs were frequently embroidered; these were always white cotton. Their striped cottons were brown and white and blue and brown. Striped wool had red-purple, tan, orange, green-blue, rose, and bright red with some black. The Nazcans used scaffolding yarns and end-to-end warp locking.

III. Tiahuanaco I, 0-600 A.D. No textiles have been discovered from this period and no information concerning any that may have been woven at this time is available.

IV. Tiahuanaco II, 600-900 A.D. This culture was in the highlands generally and in the region around the southern

end of Lake Titicaca particularly. "Its peculiar aesthetic style, which is conveniently summed up in the frieze carved in relief upon the celebrated Monolithic Gateway at Tiahuanaco is so distinctive that it is easily recognized wherever it occurs and in whatever medium it is presented." (Means, Study of Peruvian Textiles, p. 19)

The creator god is shown as a short, stocky figure with a large square face, round eyes, a thick flat nose, and an oblong mouth. All around this is a frame from which a number of ray-like tabs project, each ending with a geometric puma face. He has a girdle from which hang conventionalized animal or human faces.

All Tiahuanacan II art is highly conventionalized. The hands usually have four digits that are quite natural. Tears are typical, mantles suggest wings, legs and feet are angular, there is a boldness and certainty of outline. Anthropomorphized birds or else men masked as birds and wearing flowing capes are often used. Designs are sometimes made up of arbitrarily combined motives, such as eye-motives or hand- or foot-motives, and each is separated from its natural context and put into a pattern that does not cohere in any rational sense. There is a pronounced tendency toward bilateral symmetry of design, the main outlines of the design running

parallel with the warp and weft and the designs built up in patches of color. There were never any slits, the meeting of weft colors being interlaced. Squares are woven together with a thread passing through the end loops of adjoining pieces, uniting them so closely that they appear to have been woven in a single piece. There are some all-over patterns of geometrical nature. Heads of birds interlocked and repeated and the heads of fish and beasts were treated the same way. Step-sided frets, sometimes interlocking were frequently used. Plain weaves with warp-float pattern stripes are typical of this culture.

V. Late Chimu, 900-1400 A. D. This culture was the Early Chimu revived and the area approximately the same, extending southward to include Pachacamac.

Characteristic of this area and time is the habit of making finely detailed, highly conventionalized, interlocking patterns which were built up of a variety of motives that were chosen for their attractiveness, rather than for any significance which their component parts may have had. The flaring headdress that is in the design on the wall of ruins at Chan-Chan and the arabesques on another wall as shown in plate 43 of Kelemen, vol. 2, are typical of the Late Chimu art. Diagonal stripes, diagonal lines in designs, slightly curvilinear frets, fishes and

stripes are often used. Horizontal rows of birds, llamas, crosses and rectangles containing six-pointed stars or animal forms are characteristic. There is much use of cotton with single and multiple warps. There are many all-over patterns of widely spaced motives of bird forms. The most unique characteristic is the use of embroidery on structurally patterned textiles. Delicate gauzes of fine net background are embroidered. Most frequently used colors are hues of yellow, brown, blue, red, purple, orange, green, and black.

VI. Late Nazca, 900-1400 A. D. The peoples of Pisco, Ica, and Nazca Valleys made up the culture we call Late Nazca. Their art is at times quite similar to the Late Chimu art. They used small diamond shapes enclosing a bird and placed in diagonal lines, bird forms were used singly, interlocked or in combination with other animal forms and rectangles contained llamas and cats. There were simple geometric forms with stepped or plain outlines, S-shaped figures, frets, angular and repetitive patterning, reciprocal hooks, double latchhooks, "inversion of alternate motives on a vertical axis or on both axes for disposition within an indistinct rectangle." (O'Neale, p. 43) Rose red, which has faded to a golden brown is used often for the ground color. Checkered llamas, corners of stepped bands, fringes, and single-face brocade

were popular. The colors are used in combinations of from four to seven different colors with blue almost always there. The outstanding colors are red, yellow, tans, browns, orange, blues, white, and green. Scaffolding yarns and end-to-end warp locking are used as in the early period.

There are some characteristics that are common to both of the late cultures which make it difficult to classify many textiles.

VII. Inca, 1100-1530 A. D. The Inca dynasty started in the mountain region around Cuzco and spread until the entire Andean area, as well as other areas which do not concern us in this study, were conquered. Of the textiles made during the early part of this period we know nothing as we do not as yet have any specimens of it. And, strangely enough, although the Inca textiles are the most recent in point of time, they are also the rarest of all pre-Spanish Andean textiles with the exception of Early Chimú of which we do not have any. Inca textiles are distinguished by the sobriety of their colors of black and brown, through subdued yellows, reds, and blues. There is a high level in conventionalized patterns and forms. Stripes and small all-over patterns are most common, and garments are remarkable for the

excellence of their technique rather than for the brilliance of their hues.

Technological Classification of Peruvian Fabrics

The classification that Means uses in A Study of Peruvian Textiles will be used in this study.

I. Tapestry.

A. Ordinary tapestries.

The outstanding characteristic is that the warp is completely hidden by the weft. In most tapestries the warp is of cotton and the weft of wool. The colors are carried only as far as the pattern requires and does not go from selvage to selvage. Where colors meet they may be interlocked, interwoven or woven back leaving a slit or jour. When two colors do not harmonize, a third color-- usually black -- is used as the limning or outlining of the major color. The limning may be interlocking, interwoven or eccentric wefting which means that it circles each warp thread as it goes in a diagonal direction. Figure 8 wefting and spiral wefting are sometimes used. They are self-explanatory.

B. Brocaded tapestry.

"In tapestry of this kind-- which may or may not have limning, eccentric wefting, and slits-- there is a

secondary pattern wrought by means of an auxiliary or secondary weft inserted into the web while it is still in the loom, the tapestry proper serving as a base fabric."

(Means, Study of Peruvian Textiles, p. 31)

C. Embroidered tapestry.

The secondary pattern in embroidered tapestries is woven into the web "with a needle after the web has been taken from the loom . . . there are two tests which aid in determining which is which: the first is that brocades usually have floats at the back of the cloth, whereas embroideries usually have knots or loose ends; the second is that the auxiliary weft of brocades usually lies more closely and firmly upon the base fabric than do the threads of embroidered stuffs". (Means, Study of Peruvian Textiles, p. 31)

II. Plain Webs.

- A. Undecorated.
 - B. Striped in the warp.
 - C. Striped in the weft.
 - D. Check-patterns and gingham.
 - E. Embroidered plain webs.
 - F. Brocaded plain webs.
- These were woven on the loom.
- G. Plain webs painted.

III. Double Cloths.

Double cloth consists of a textile woven with two warps of different colors that interchange as do the two wefts of different colors, forming a design identical on both sides with opposite colors. These are nearly always all-cotton or all-wool.

IV. Feather Work.

This class or work consists of cloth to which feathers are attached in such a way that they cover the entire surface.

V. Gauze and Voile.

A. Undecorated.

"In gauze the warp threads are paired and loosely twisted around each other in such a way that the weft threads could be passed through the loose bends thus formed. Voile is merely a loosely woven web without the element of twisting even when either or both the warp threads and the weft threads are paired". (Means, p. 33)

B. Brocaded.

C. Embroidered.

VI. Miscellaneous, Rare and Combined Techniques.

A. Needle-coiling and braided fabrics.

B. Tassels, ropes, and fringes.

C. Rare or indeterminate weaves.

D. Sundry combinations of techniques.

<u>Periods</u>	<u>Techniques</u>
Archaic (including Tiahuanaco I)	Network and reticulated meshes Plain webs, undecorated Possibly beginnings of ropes or cords and tassels
Early Chimu and Early Nazca	Tapestry, ordinary (Very doubtful) Plain webs, undecorated, embroidered, brocaded, and painted or printed Double cloth Gauze and voile Network and reticulated meshes Cord-type fringes Braided and knitted fabrics
Tiahuanaco II	Tapestry, almost wholly ordinary tapestry Plain webs (Perhaps of all classes, but this point is not yet clear) Double cloth; gauze and voile; network and reticulated meshes; braided and knitted fabrics Fringes, either loop (cut and uncut) or tab variety
Late Chimu and Late Nazca	Tapestry of all kinds Plain webs of all kinds Double cloth Feather work Chaquira Gauze and voile of all kinds Network or reticulated meshes All known miscellaneous, rare, and combined techniques
Incaic	Most fabrics were tapestries, plain webs, or gauzes and voiles

A foot note in Means, p. 38, explains to some extent the difficulty met when classifying ancient textiles.

"The attention of readers is specially called to the recent work of O'Neale and Kroeber, 1930, which will be found to

contain data of great interest, some of them supporting what I have said here, some of them running counter thereto. Discrepancies such as this merely serve to indicate once more, how very inchoate our knowledge of this subject is as yet".

In classifying these two collections it was necessary to use the materials of several authors in order to find reference to similar work and design. Often two or more writers would describe textiles quite similar and each date his own in a period or place different from the rest. The characteristics of each culture have been given and the techniques common to the periods. In describing the textiles, it seems unnecessary to state again the period in which the detail is most apt to appear, unless there was some doubt because of characteristics of two or more periods in which case each outstanding characteristic was dated as to period or place in the period. On several occasions fabrics identical to those in this study were shown. They were dated, then, according to the authority, and stated as such.

The study of these specimens will be recorded in the sequence of cultural period and the classification of technique. On some plates more than one technique has been used. These will be placed so that one of them is in the correct position. All dates are A. D., as even the

earliest Nazca comes after the year 100 A. D.

Many textiles were framed. It was impossible to examine them closely enough to determine the fiber content. These will be designated merely by the statement "framed".

Pictures of the textiles analyzed in this study are in the appendix.

ANALYSIS OF THE COLLECTIONS AT OREGON STATE COLLEGE
AND THE SEATTLE ART MUSEUM

Figure 1

Tapestry belt.
Size, $7/8$ x 76 inches.
Framed.

The warp in this fabric is circular. There is a flat, padded core which is fastened securely to both sides of the fabric by weft threads that cross over in a double weave fashion. The designs on both sides are identical with colors reversed. There are 9 different geometric designs which are in groups of five of one pattern. Each has a different color scheme and all colors are used.

There is a tassel at one end of twisted loop weft threads.

The designs are in the Tiahuanaco II style and may be dated as between 600 and 900.

Figure 2

Tapestry fragment.
Size, 3 x 19 inches.

In this specimen the 22 warps per inch are thick, giving a heavily ribbed effect. The weft count is 70 picks per inch.

The design consists of anthropomorphized birds and fish enclosed in triangular fields of green, yellow and black. The fish are red, black, blue and orange. The birds are red, green and blue-green. The ground is red.

There are no limning or slits. The tail, eyes and body lines of the birds are Tiahuanaco II style, while the fish are Late Chimu.

This specimen represents the period when Late Chimu art was beginning to break free from Tiahuanaco II. Therefore, this fabric may be dated as of the last part of the Tiahuanaco II period, about 750 to 900.

Figure 3

A tapestry fragment.
Size, $9\frac{1}{4}$ x 34 inches.
Framed.

This tapestry is rich in coloring of bright red, pink, brown, three tans, green and yellow. Limning is used in interlocking wefting. It is very fine with 37 warps and 128 weft picks per inch.

The design is an abstract geometric pattern probably representing a puma as there are puma heads and feet with other unidentifiable designs.

The style of the various motives is Tiahuanaco II, yet they fail to combine themselves into a coherent composition.

Means, p. 44, dates a similar fabric as Tiahuanaco II period, as between 750 and 900.

Figure 4

Tapestry fragment.
Size, $12\frac{1}{2}$ x $16\frac{1}{2}$ inches.
Framed.

There are both jords and interlocked wefting in this fabric, the jords occurring only on small areas while the interlocking is used on long lines.

The geometric forms with the step-sided interlocking frets are of Late Nazca art, and the curvilinear frets are similar to those in Late Chimu art.

Red, yellow, green, purple and black are the colors used. There are 12 warps per inch and 60 weft threads per inch.

This fabric is possible of the Late Nazca period, between about 1100 and 1400.

Figure 5

Tapestry border.
 Size, $2\frac{5}{8} \times 15\frac{3}{8}$ inches.
 Cotton warp, cotton and wool weft.

In this specimen the design is made up of stripes of varying widths in tan, red, light blue, royal blue, yellow, purple, green, white and dark blue. There are 24 warps per inch and 82 weft picks per inch.

The colors and stripes are typical of the late Nazca period, from about 900 to about 1400.

Figure 6

Tapestry fragment with fringe.
 Size, $4\frac{3}{4} \times 12\frac{1}{4}$ inches.
 Cotton warp, vicuna wool weft.

This fabric is even and fairly fine with a warp count of 12 threads and a weft of 92 picks per inch. There are no jours but much limning in interlocking wefting.

The motive is either a stylized fish or a geometric, abstract man. There are three squares in which these motives are placed. Surrounding the squares are borders of geometric designs.

The two fringes are tightly twisted loops of cotton about $1\frac{1}{4}$ inches long.

This is in the Late Nazca period, between about 900 and 1400.

Figure 50

Tapestry fragment.
 Size, 3×7 inches.
 Framed.

In this specimen there are both interlocking wefting and jours. It is very fine with 20 warp threads per inch and 112 weft picks per inch.

The design is an eight-pointed star in a rectangle. The colors are olive green, red, black and yellow.

This design is typical of the latter part of the Late Nazca period, about 1100 to 1400.

Figure 7

A tapestry fragment.
Size, $8\frac{1}{2}$ x $3\frac{5}{8}$ inches.
Cotton warp, vicuna wool weft.

The weave in this fabric is very fine, with a weft of 168 picks per inch and a warp of 24 threads per inch. The colors are joined by interlocking weft.

The simplest of designs is used, an all over of rectangles, stepped on the diagonal. The colors are yellow, black and rust.

This design is typical of the earlier phase of the Late Nazca period, between 900 and 1100.

Figure 8

A tapestry fragment.
Size, $2\frac{5}{8}$ x $8\frac{7}{8}$ inches.
The warp and weft are both of wool.

This specimen consists of three rectangles of red tapestry. On each there is a geometric, checkered representation of a llama of yellow and green. Interlocking wefting is used.

There is a heavily ribbed effect due to the six-strand warp which is 15 threads per inch. The weft count is 76 picks per inch.

O'Neale, plate 29, shows this same design and classifies it as Late Nazca.

Figure 9

Kelim rug fragment.
Size, 5 x 15 inches.
Wool warp and weft.

This specimen is of tapestry weave, having jords, yet the design on both sides of the fabric is identical and opposite in color. The warp is a heavy rope of four threads per inch and the weft is heavy- two-fly brown and yellow yarns of eight to the inch.

The design is a series of lozenge-shaped figures, alternating yellow and brown from a central core and forming diagonal lines.

The design is of the early part of the Late Nazca period, about 900 to 1400.

Figure 10

Tapestry fragment.
Size, 19 x 19-3/4 inches.
Framed.

The design consists of bold zig-zag stripes about two inches in width, containing highly conventionalized double bird designs. The stripes are red with brown birds, red with tan birds, tan with red birds, tan with brown birds and brown with tan birds. There is careful liming in black in interlocking wefting. The birds show a characteristic reversal of motive on both the vertical and horizontal axes that is typical of the Nazca art.

The textile is rather fine, having 24 warps per inch and 104 weft picks per inch. The colors are those used by the Incas.

This fabric is probably of the Late Nazca period, between about 1100 and 1400.

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Figure 11

Tapestry panel.
Size, 22 x 37-3/4 inches.
Framed.

In this fabric the weave is rather fine, the weft being about 168 picks per inch with the warp 24 threads per inch. There are a few jours but the majority of the lines are diagonal, so the slits are small.

The design is of stylized birds, deer and fish scattered over the ground in seemingly disorderly fashion. The individual motives are all used in Late Chimú art. There is Tiahuanaco II influence in the placement of the motives.

Borders of stripes with a wide central panel containing conventionalized pumas in the same colors as the main fabric are at each end.

According to the designs this may be said to be Late Chimú period, between 900 and 1100.

Figure 12

A fragment of tapestry.
Size, 12 x 1-3/4 inches.
Cotton warp, vicuña wool weft.

In this fragment of tapestry a jous, the design is distinguished by careful and consistent limning in black and red, carried out partly in eccentric wefting and partly in wrapped weave, which consists of the weft wrapped around a single warp thread spirally. As a result of the variations of weaving there is a waviness in the warps and in the weft.

The ground color of the design is yellow. Upon this are rows of lozenges enclosing in each two conventionalized birds. The birds are white with red limning on a ground of black or yellow which is limned with white, red or black. This is on a field of red limned with red or black. The lozenge is 3 1/4 x 6 1/4 inches. There are two shown on the fragment.

There are 16 warps per inch and the weft count ranges from 60 to 76 picks per inch.

In classifying the fabric, the jours, limning, colors, arrangement of pattern and the form are considered. The colors are of Late Chimu, the lozenge frame is from the latter period. The survival of Tiahuanaco II influence is apparent in the stepped lines and limning, but the jours are Chimu.

Therefore, this specimen may be dated as the earlier half of the Late Chimu period, probably between about 900 and 1100.

Figure 13

A fragment of tapestry.
Size, $7\frac{1}{2}$ x $5\frac{7}{8}$ inches.
Cotton warp, vicuna wool weft.

In this fabric the weave is rather fine, varying between about 66 to 76 weft threads per inch with 18 warps. There are jours and eccentric wefting only on either side of the red border.

Upon a ground of yellow are wrought rows of lozenges, forming diagonal lines. In each lozenge there is a stylized bird of brown. The field of the lozenge is yellow with a wide border of red.

The design represents the Late Chimu period, probably between 900 and 1400.

Figure 14

Tapestry border.
Size, $4\frac{1}{2}$ x 22 inches.
Cotton warp, wool weft.

There are jours and eccentric wefting in this specimen with red limning used throughout. Nineteen pairs of warps and 84 weft picks per inch are used.

The design is made up of stripes in red, brown, golden yellow and red with a central stripe $2\frac{5}{8}$ inches wide which contains highly conventionalized bird head motives that interlock and are arranged in diagonal lines. The colors are golden yellow, purple, brown, blue and blue-green. The eyes of the birds are embroidered.

This fabric is of the Late Chimu period, between 900 and 1400.

Figure 16

Tapestry
Size, 3 x 29 $\frac{1}{2}$ inches.
Framed.

There is a ribbed effect, due to the double warp which is 22 threads per inch in this specimen. The weft is 64 picks per inch. There is much black limning used in interlocking wefting.

The design is on a band and arranged in rectangles about 3 x 4 inches, each of which contains a highly conventionalized double-bird motive wrought in green, on a red ground, or red on a yellow ground. A narrow red border is on either side.

This design is very similar to the decoration on the wall of the Hall of the Arabesques at Chan-Chan.

This is Late Chimu period, of about 900 to 1400.

Figure 17

Tapestry fragment
Size, 6 $\frac{1}{2}$ x 12 $\frac{1}{2}$ inches.
Framed.

In this specimen the interlocking weft and the simplicity of the geometric forms are characteristic of Incaic art. The arrangement of the squares is, however, typical of Late Chimu. The design is made up of two small red squares, each set in the center of a large green square and the two bordered with red.

With the Inca feeling this fabric is probably from the latter part of the Late Chimu period, about 1100 to 1400.

Figure 18

A tapestry fragment.
Size, $13\frac{1}{4} \times 16\frac{1}{4}$ inches.
Framed.

This fabric is very fine, having a weft count of 120 picks per inch. The warp is of 32 double threads per inch. The colors are red, pink, green, yellow, black and white.

The design consists of eight highly conventionalized birds in a squared area and surrounded by Z-shaped figures. Striped borders are on both sides of the design panel, the two outer borders being wider than the others and containing stylized birds.

The center bird motifs are similar to those in figure 38 in Means while those in the border are very much like those in the arabesque wall decorations at Chan-Chan.

This textile represents the latter part of the Late Chimu period, probably between about 1100 and 1400.

Figure 19

A tapestry panel.
Size, 19 x 38 inches.
Framed.

Stripes bearing abstract bird motives and the colors of red, blue, yellow, brown and yellow-brown seem to be derived from Incaic art. The black lining is interlocking.

The effect is relatively fine, although the weft varies from 56 to 100 picks per inch and there are 19 warps per inch.

This fabric is probably from the Inca period.

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Plate I-A

Tapestry ribbon.

Size, $\frac{1}{2}$ x $9\frac{1}{4}$ inches.

Cotton warp, vicuna wool weft.

This specimen has a series of side fringe areas made by extending the weft yarns $\frac{3}{8}$ inch beyond the edge of the fabric. Jours are used in the interlocking fret motive. This alternates with the fringe area, which is in two sections, separated by a few rows of tapestry.

There are 18 warps and 42 weft yarns per inch. The colors are yellow, black, brown, pink and golden yellow.

This is of the Late Chimu period, about 900 to 1400.

Figure 20

Brocaded tapestry.

Size, 3 x $19\frac{1}{4}$ inches.

Cotton warp, wool and cotton weft.

In this specimen the design is made up of tapestry stripes in red, yellow and tan with a brocaded central band. The brocade design is a counterpaired, stylized puma within a rectangle, and wrought in red and yellow with black limning.

The warp is tripled, giving a ribbed effect, the count being from 5 to 8 per inch and the weft from 100 to 124 picks per inch.

This fabric is typical of the late Nazca art, between 900 and 1400.

Figure 21

Brocaded tapestry belt.

Size, 2 x 22 inches.

Framed.

On a red tapestry ground the brocade design is arranged in rectangles, each of which contains a highly conventionalized bird motive wrought in red, cream, green,

black, yellow and tan. On the body of each bird there is a secondary bird motive.

There are 18 double warps and 84 weft picks per inch.

The style is Late Nazca, of between about 900 and 1400.

Figure 22

Brocaded tapestry.
Size, 6-3/8 x 11-1/8 inches.
Framed.

A fabric with a design almost identical to this is described in O'Neale as "a monochrome tapestry border; double-face pattern weave stripe". The design is in a panel of squares, each of which contains a conventionalized llama wrought in blue, white, red, black, green, yellow, brown and golden-brown. The ground is red tapestry.

There is some limning. There are 20 pairs of warp yarns and 80 weft picks per inch.

This design shows some Tiahuanaco II influence, especially noticeable are the tears. The specimen, then, may be dated as the early part of the Late Nazca period, between about 900 and 1100.

Figure 23

Brocaded tapestry poncho.
Size, 24 x 35 inches.
Vicuna wool warp and weft.

The colors in this fabric are yellow, green, red, yellow-brown and blue. The base fabric of olive green tapestry has a warp count of from 15 to 20 yarns per inch with a weft of from 60 to 92 picks per inch. There are three brocaded panels, each consisting one-half of the panel in plain color and the other half decorated with eight-pointed stars and geometric figures. The warp crosses the garment horizontally.

The neck and arm openings are edged with a pink and light green cord, twisted and sewn on.

This specimen, because of its colors and design, appears to be of the latter part of the Late Nazca period, from about 1100 to 1400.

Figure 24

Brocaded tapestry border.
Size, $3\frac{1}{2}$ x $19\frac{1}{2}$ inches.
Cotton warp, wool weft.

In this specimen the design is made up of tapestry stripes in purple and golden-yellow, with a wide brocaded border stripe. The brocade design is of highly conventionalized birds in lozenge shapes, arranged in rows that give a diagonal line. The colors are red, purple, yellow and orange-yellow.

There are 12 double warps per inch and 40 weft picks per inch.

This fabric represents the latter part of the Late Chimú period, of about 1100 to 1400.

Figure 26

Brocaded tapestry belt.
Size, $7/8$ x $27-3/4$ inches.
Framed.

There are 32 warps and 80 weft picks per inch in this fabric, the double warps running across the belt.

The design consists of yellow and black interlocking, highly stylized fish motives. There are very narrow borders of red overcast embroidery.

The colors and design are suggestive of Inca culture, but the workmanship is earlier. This fabric is probably Late Chimú period, between 1100 and 1400.

Figure 27

Embroidered tapestry band.
Size, 6 x 17-3/4 inches.
Framed.

The warp yarns are paired, running from 16 to 18 pairs per inch. The weft is 120 picks per inch. The colors are yellow, green, blue, red, white, brown and black. The field is red.

The design is arranged in square panels, each of which contains a highly conventionalized man. The colors are in patches, the lines are parallel to the warp and weft, and there is pronounced limning.

The design is of the latter part of the Tiahuanaco II period, about 750 to 900.

Figure 28

Embroidered tapestry.
Size, 4 1/4 x 16-3/4 inches.
Framed.

At the bottom of this fragment of red tapestry there is a border design of running birds arranged in a series of rectangles. The colors are shades of red, blue, green, purple, blue-green and yellow.

The warp count is 28 threads per inch and the weft is 80 picks per inch.

This represents either the last part of the Tiahuanaco II culture of about 750 to 900 or the first part of the Late Nazca period, between 900 and 1100.

Figure 29

Embroidered tapestry poncho.
Size, 29 x 30 inches.
Framed.

This specimen is of tapestry with bottom, side and center borders of embroidery. There is a looped, twisted

warp fringe at the bottom with tassels sewn on at the side and center bottom. The design is of two geometric figures.

This fabric represents the latter part of the Tiahuanaco II period or the first part of the Late Nazca period.

Figure 30

Embroidered tapestry band.
Size, $3\frac{3}{4}$ x 16 inches.
Framed.

The design in this textile is of diagonal stripes of conventionalized pumas, tooth-sided interlocking frets, and birds. There are borders on both sides and an additional narrow border sewn onto one edge.

The colors are red, pink, yellow, tan, brown and green. There are 27 triple warps per inch and the weft is 144 picks per inch.

The design represents the latter part of the Late Chimú period, between about 1100 and 1400.

Figure 31

A fragment with embroidered squares.
Size, $7\frac{1}{4}$ x $7\frac{1}{4}$ inches.
Framed.

In the two opposite corners there are squares about $3\frac{1}{4}$ inches embroidered with distorted people. The figures are wearing short skirt-like garments. One carries a knife and the other a bludgeon. The feet have three digits each. From one chin there hangs an H-like ornament, suggestive of the protruding tongue. Another figure has its head thrown back and long hair is hanging straight down behind. The figures appear to be falling through space.

The colors are black, green, yellow and brown. The design is woven into the cloth with a darning stitch. There are 34 warp yarns per inch and 36 weft picks per inch.

This specimen represents the Early Nazca period, between about 100 and 600.

Figure 32

An embroidered fragment with needle-coiling.
Size, 2-3/4 x 8 inches.
Framed.

This fragment is embroidered in crewel stitch on a plain web. The figure is a fantastic animal resembling in some ways the cat demon. There is a protruding tongue, snakes held in each paw which has four digits, and it seems to have a face on both ends of the head.

The colors are rich and exciting. They are red, pink, brown, tan, golden-brown, yellow, green and black.

The border is a series of small tabs of needle-coiling. There is a core which has around it a finely made covering of tubular needle-coiled fabric.

This represents the Early Nazca period, between about 100 and 600.

Figures 33 and 34

Embroidered fragments.
Size, 6 1/4 x 4 and 6-1/8 x 3-7/8 inches.
Framed. Said to have come from Paracas.

These two fragments are nearly identical in design and technique. They are probably from the same garment. The designs are stylized men very similar to the figures on the Monolithic Gateway. They are wrought in red, black, and yellow on a base fabric of golden-brown which is allowed to show as part of the design. On the body of each figure there is an even more stylized man and in the lower right-hand corners are very highly stylized animals.

If the textiles are from the Necropolis of Paracas they may be from the latter part of the Early Nazca period. However, because of the close resemblance to the central figure on the Monolithic gateway, they may be safely dated as of the early part of the Tiahuanaco II period, between about 600 and 750.

Figure 35

Embroidered cloth.
Size, 6 x 8½ inches.
Warp and weft of cotton.

In this specimen there are three bands of embroidered geometric designs. Each is of slightly different width and each has a different design. The patterns are embroidered into the white base fabric at every three warps which gives a tapestry effect.

In the base fabric there are 14 warps and 27 weft picks per inch. The colors are red, black, green, yellow, blue and purple.

The designs and colors are of the Tiahuanaco II period, of about 600 to 900.

Figure 36

Embroidered cloth.
Size, 5½ x 6 inches.
Cotton warp and weft.

A conventionalized bird in a lozenge of 1 x 1-3/4 inches is dispersed in rows on a brown cotton ground. The design is of wool in yellow, red and green.

There are 32 warps and 38 weft picks per inch.

The design is Late Nazca, about 900 to 1400.

Figure 37

Embroidered cloth.
Size, $21\frac{1}{2} \times 27\frac{1}{2}$ inches.
Framed.

There are three rectangles containing highly stylized men on the left side of the fabric and two highly stylized fish and a stylized man on the right-hand side. The colors are pink, blues, magenta, yellow, brown, golden-yellow and blue-green.

There are 38 warps and 44 wefts per inch. Limning is used in the figures on the left. Diagonal lines predominate in all of the figures.

There is strong Tiahuanaco II influence but the design represents the early part of the Late Nazca period, between about 900 and 1100.

Figure 38

Embroidered cloth.
Size, $5 \times 8\text{-}3/4$ inches.
Cotton warp and weft.

The warp count in this specimen is 10 threads per inch and the weft is 17 per inch. The color of the ground is tan with white embroidery. The design is a highly stylized human face placed in two horizontal rows of four faces a row.

The design is Late Chimu, of about 900 to 1400.

Plate I-E

Embroidered fragment.
Size, $2 \times 3\frac{1}{2}$ inches.
Vicuna wool warp and weft.

This small fragment is embroidered in black, brown and tan in a chain stitch on a rust ground.

This specimen is certainly pre-Spanish but further dating is impossible.

Figure 39

Brocaded cloth.
Size, 7 x 18 $\frac{1}{2}$ inches.
Framed.

This band is of red tabby weave with red and tan brocaded figures which bear a close resemblance to figure 16 in Means. The flaring headdress, lack of girdle and the weaving technique are Chimu.

There are 12 warps and 18 weft picks per inch.

This is probably of the latter part of the Tiahuanaco II period, between about 750 and 900.

Figure 40

Brocaded band.
Size, 5 $\frac{1}{2}$ x 16 inches.
Framed.

A tabby weave ground bears a brocaded design of stylized birds in brown and white. Two brocaded borders are brown and white stripes.

There are 16 warp yarns and 30 weft picks per inch.

Available sources give no similar designs. This could be of the latter part of the Tiahuanaco II period or the early part of either the Late Nazca or the Late Chimu periods. It is more like the Late Nazca art, between about 900 and 1100.

Figure 41

Brocaded child's shirt.
Size, 24 x 32 inches.
Framed.

In this specimen the base fabric is of tabby weave cloth, covered with rectangles of alternating red and tan upon each of which is wrought a stylized fish, puma or bird motive in red or tan. The tapestry border is of green, brown and yellow.

The warp count is 14 and the weft is 26 picks per inch.

The design represents the Late Nazca period, of between 900 and 1400.

Figure 42

Brocaded cloth.
Size, $2\frac{1}{4}$ x $16\frac{1}{8}$ inches.
Framed.

The pattern of this specimen consists of three bands, two decorated with puma motives and the center decorated with geometric figures. The colors are red, green, white, yellow and tan.

Limning is used throughout. Twelve doubled warps and 56 weft yarns are used per inch.

The pattern is Late Nazca, of between about 900 and 1400.

Figure 25

Brocaded band.
Size, $1\frac{1}{4}$ x $19\frac{1}{4}$ inches.
Warp and weft of vicuna wool.

The design on this band is arranged in rectangles, each of which contains a conventionalized puma. The colors are red, orange, dark blue, and yellow. The warp of 14 threads runs across the band. There are 32 weft picks per inch.

This specimen represents the Late Chimu period, between about 900 and 1400.

Figure 44

Brocaded band.
Size, $1\frac{1}{8}$ x 19 inches.
Wool warp and weft.

The design in this fabric is a conventionalized cat in red, dark blue and yellow on a red ground. There are 14 warp threads and 32 weft picks per inch, the warp of brown wool running across the fabric.

This specimen is Late Chimu in style, of the period between 1100 and 1400.

Figure 45

A fragment of brocaded cloth.
Size, 7-3/4 x 7 1/2 inches.
Framed.

In this fabric the base material is of fine, ecru, voile on which a red brocade weft forms a charming geometric pattern in diamond-shaped frames. The base fabric is allowed to appear systematically in such a way that it forms part of the design.

There are 26 warps and 36 weft picks per inch.

A tapestry border has a brocaded stripe of lozenge-shaped figures.

The design is Late Chimu, between about 1100 and 1400.

Figure 46

Brocaded cloth.
Size, 5 x 10-3/4 inches.
Framed.

In this specimen conventionalized double-headed bird motives in red and yellow on a brown tabby weave base fabric are placed in rows which give diagonal lines. There are 32 warp yarns and 56 weft picks per inch.

This represents the later phase of the Late Chimu period, between about 1100 and 1400.

Figure 47

Fragment of tie-dyed cloth.
Size, $7\frac{3}{4}$ x $20\frac{1}{2}$ inches.
Framed.

The designs in this fabric are probably applied to several cloths and then sections cut out of each and put together to form a patchwork design with an additional weft and warp thread so that it has the appearance of having been woven together.

There are 24 warp threads per inch and 32 weft picks per inch. The colors are white, red, yellow, green, dark blue and light blue.

The technique and colors are of the latter part of the Early Nazca period of about 100 to 600.

Figure 51

Painted textile.
Size, $6\frac{1}{2}$ x $21\frac{1}{2}$ inches.
Framed.

There are 38 warps and 44 weft picks in tabby weave in this specimen. The design is painted slightly off grain on a pinkish-tan ground in several shades of brown and tan. The interlocking step-sided frets, and the details as patches of outlined color are typical of Tiahuanaco II art. The headdress, double bird, bird tails and general face shapes are Late Chimu.

This fabric may be dated at the opening of the Late Chimu period, between 900 and 1100.

Figure 52

Painted cloth.
Size, 25 x $33\frac{3}{4}$ inches.
Framed.

The design in this fabric consists of diagonal bands on which there are conventionalized birds, men and deer with alternating rows of zig-zag lines or interlocking

curvilinear frets. The warp count is 14 and the weft 44 picks per inch.

The style is that of the Late Chimu period, between about 900 and 1400.

Figure 53

Painted cloth.
Size, 14 x 18 $\frac{1}{2}$ inches.
Framed.

The warp count is 44 and the double weft is 64 picks per inch. The colors are red, tan and brown on a tan ground.

The design is of two step-sided triangles, one being composed of three triangles and a square and the other of one triangle, a square and bottom band. The designs were painted and then appliqued onto the base cloth.

The style is that of the Late Chimu period, between about 900 and 1400.

Figure 48

Double weave cloth border.
Size, 1-3/4 x 14 $\frac{1}{4}$ inches.
Framed.

The warp in this specimen is completely covered by the weft. The design is of a highly stylized man and geometric figures in rectangles. The colors are red and yellow.

These figures represent the Tiahuanaco II period, about 600 to 900.

Figure 54

Fragment of double weave border.
Size, $7\frac{1}{4}$ x 25 inches.
Framed.

On a tan tabby weave fabric a double weave border in brown and tan is sewn which depicts a bird holding a decapitated human head. There are 24 warps and 40 weft picks in the base fabric and 20 warps and 34 weft yarns per inch in the double weave border.

The design is clearly Late Nazca, of about 900 to 1100.

Figure 55

Double cloth.
Size, $6\frac{1}{4}$ x $6\frac{1}{2}$ inches.
Cotton warp and weft.

The design in this fabric is an all over of rectangles stepped on the diagonal, each half centered with a square spot. The colors are brown and cream. There are 44 warps and 58 weft yarns per inch.

The design is Late Nazca, of between about 900 to 1400.

Figure 56

Double weave fragment.
Size, $4\frac{1}{2}$ x $7\frac{3}{4}$ inches.
Wool and cotton warp and weft.

In this fabric the double weave is so tightly beaten up that it completely covers the warp threads. The warp is very coarse which gives a noticeably ribbed effect. There are 9 warps and 60 weft picks per inch.

The design is of geometric figures arranged in bands. The colors are four shades of brown and cream.

The design and colors are of Late Nazca art, between about 1100 and 1400.

Figure 49

Double weave fragment.
Size, 7 x 14 $\frac{1}{2}$ inches.
Framed.

The design in this specimen is made up of lozenge-shaped figures enclosed in rectangles. The colors are brown and tan. There are 20 warps and 34 weft picks per inch.

The technique, colors and design are of the Late Chimu period, between about 900 and 1400.

Figure 57

Double weave panel.
Size, 14 $\frac{1}{2}$ x 18 $\frac{1}{2}$ inches.
Cotton warp and weft.

The design of stylized men and birds in zig-zag bands is very similar to the decorations on the wall of the Hall of the Arabesques at Chan-Chan.

There are 30 warps and 40 weft picks per inch. The colors are brown and tan.

The style is that of the Late Chimu period, between about 900 and 1400.

Figure 58

Double weave fragment.
Size, 4 x 11 $\frac{1}{2}$ inches.
Cotton, warp; cotton and wool, weft.

The weft is orange, yellow, magenta and brown that is woven to form a geometric striped pattern. There are 8 warps and 22 weft picks per inch.

The warp threads are looped at top and bottom and stop about 2-3/4 inches from the ends of the looped weft. O'Neale calls this technique "double-face pattern weave". (p. 56)

This is of the Late Chimu period, about 900 to 1400.

Figure 59

Double cloth fragment.
 Size, $7\frac{3}{4}$ x $15\frac{1}{2}$ inches.
 Cotton warp and weft.

The design in this double weave specimen is made up of horizontal bands of alternating rows of man and llama motives. The colors are dark blue and tan. The warp is 40 threads per inch and weft 74 picks per inch.

The style is Late Chimu, of between 900 and 1400.

Figure 60

Band of double weave.
 Size, $6\frac{1}{2}$ x $17\frac{1}{2}$ inches.
 Framed.

In this dark blue and tan double weave band there are 32 warp threads and 44 weft yarns per inch.

The design is made up of a row of conventionalized llamas in a step-sided band.

The style is Late Chimu, of between 900 and 1400.

Plate I-C

Featherwork.
 Size, $7\frac{3}{8}$ x 2 at the top and $3\frac{1}{2}$ inches
 at the bottom.

The base fabric of this specimen is white cotton voile on which the feathers are applied by looping the quills over a thread and securing by a knot in a second thread. The feathers are laid on in a shingle fashion. The fabric is circular with the blue feathers on all sides.

It is impossible to date this specimen other than to say that it is either Late Chimu or Late Nazca. In either case it would date from between 900 and 1400.

Figure 61

Gauze fragment.

Size $18\frac{1}{2}$ x $5\frac{1}{4}$ at the bottom and $11\frac{1}{4}$ inches
at the top.

Framed.

This is the only true gauze fabric in this study. The design is a stylized face combined with geometric motives in gauze weave on a tabby weave cloth. There are 24 warps and 34 weft yarns per inch.

The fabric is of the Early Nazca period, about 100 to 600.

Figure 62

Brocaded voile fragment.

Size, $16\frac{3}{4}$ x $19\frac{1}{2}$ inches.

Framed.

The base fabric is a fine voile of 22 warps and 24 wefts per inch of blue on which there is embroidered highly conventionalized pelicans. They are in tan with red and white body detail and possess a great degree of liveliness.

The design is typical of the latter part of the Late Nazca period, between about 1100 and 1400.

Figure 43

Braid.

Size, $\frac{3}{8}$ x $11\frac{3}{4}$ inches.

Wool.

The colors of this ten-strand braid are red, blue and gold. It is impossible to date this as the colors and technique were used in all of the pre-Inca periods. It is safe, however, to date it before 1400.

Figure 63

An ornamental rope.
Length, $56\frac{1}{2}$ inches.
Framed.

A succession of short loops surrounds in shingle fashion a central cord. These loops are put on in a zig-zag pattern, the colors being red, pink, blue, yellow and white.

It is impossible to date this specimen further than to say that it is certainly pre-Spanish.

Plate I-D

Tassels.
Length, $2\frac{1}{4}$ to $2\frac{1}{2}$ inches.
Vicuna wool.

There are five tassels of rust and brown, tied at the top with yellow and black. Similar tassels are shown in O'Neal, plate 48b, and are dated as Late Chimu. There is no way to definitely date this specimen more accurately.

Figure 64

Tapestry mat with bamboo warp.
Size, $6-7/8$ x $7\frac{1}{2}$ inches.
Framed.

There is no record available on this type of work which is a tapestry weave on bamboo warp. The design is composed of squares of colors arranged in diagonal lines with interlocking weft. The colors are white, red, green, purple, golden-tan and blue.

There are five warps and 38 weft picks per inch.

The pattern is shown in Doering, figure 64 and dated as Nazca. The colors are Incaic. It is safe, then, to date this fabric as of the latter part of the Late Nazca period, between about 900 and 1400.

Figure 65

File cloth fragment.
Size $3\frac{1}{4} \times 20\frac{1}{2}$ inches.
Framed.

In this specimen there are three stripes containing geometric designs and one wide panel composed of rectangles containing stylized birds. The colors are red, yellow, green and black.

The designs are in the Tiahuanaco II style and may be dated as between 600 and 900.

Figure 66

Drawn work fragment.
Size, $22\text{-}3\frac{3}{4} \times 28$ inches.
Cotton warp and weft.

This fabric of drawn work is unusual and the only example of this technique in this study. There is a carefully planned series of small areas which are left undrawn. These are of tabby weave with a warp of 52 and a weft of 64 yarns per inch. At each undrawn area, the drawn area threads are bunched together to give an open effect to the fabric which has been dyed black.

Crossing the center both horizontally and vertically, there are three small bands of wool embroidery in shocking pink and yellow.

Means dates a similar fabric as representing the Late Chimu period, between about 900 and 1400.

Figure 67

Fragment of surface weave cloth.
Size, $5\frac{1}{2} \times 22\frac{1}{2}$ inches.
Cotton warp and weft.

The design of this fabric is a simple weft stripe of royal blue, red and white on a brown ground with red warp threads placed at regular intervals to give a checked effect. The red yarn is of wool.

There are 16 warps and 44 weft threads per inch.

This fabric is of the Late Nazca period, between 900 and 1400.

Figure 68

Surface weave cloth.
Size $10\text{-}\frac{3}{8}$ x $15\frac{1}{2}$ inches.
Cotton warp and weft.

The ground color of this fabric is dark blue tabby weave with a warp pattern of white. The design is of two bird forms confined within a lozenge-shaped area, and placed diagonally confined with zig-zag rows alternating in both directions.

There are 18 warps and 20 weft threads per inch.

The weave is Tiahuanacoid but the birds are Chimu. This fabric may be dated as the early part of the Late Chimu period, of about 900 to 1100.

Figure 69

Surface weave cloth.
Size, $9\text{-}\frac{1}{8}$ x $9\text{-}\frac{5}{8}$ inches.
Cotton warp and weft.

This fragment is so badly worn that it is impossible to tell exactly what the design is. There are zig-zag diagonal lines and alternating diagonal stripes that seem to be of conventionalized birds.

The colors are blue on a brown ground. There are 10 warps per inch and 30 weft picks per inch.

The design seems to be either Late Chimu or Late Nazca, in either case it is between about 900 and 1400.

Figure 70

Knitted band.
 Size, $3\frac{1}{2}$ x $41\text{-}3\frac{3}{4}$ inches.
 Framed.

This specimen is of circular knitting. The design is of human figures with decapitated heads. It is repeated on both sides in different color combinations. The end has a tab variety of fringe which consists of four finger-like tabs, each circular.

The colors are black, red, yellow, green, brown, purple, orange and brown.

The design strongly resembles the figures on the Monolithic gateway, but the decapitated heads and the manner of rendering the feet are Nazca. This fabric is interesting as a combination of Early Nazca and Tiahuanaco II arts. Therefore, it may be dated at a time when those two cultures were reacting upon each other, the Early Nazca period, about 600.

Figure 15

Tapestry border with double weave design.
 Size, $1\text{-}3\frac{3}{8}$ x $33\frac{1}{4}$ inches.
 Cotton warp, wool weft.

In this specimen the design is made up of tapestry stripes in red and pink with a double weave central stripe of geometric figure of yellow and brown. There are 20 warps and 56 wefts per inch.

There is no indication of Tiahuanaco II influence, so this fabric may be dated as of the latter part of the Late Nazca period, between about 1100 and 1400.

Figure 71

Tapestry border with double weave design.
 Size, $2\frac{1}{2}$ x $7\text{-}5\frac{5}{8}$ inches.
 Warp and weft of wool.

This specimen is a loosely beaten-up red tapestry, having a center band of green, black, light blue and yellow brocaded, geometric design.

There are 18 warp threads and 64 weft threads per inch.

The colors are Incaic but the workmanship falls short of their standards. This is probably Late Nazca, about 1100 to 1400.

Figure 72

Painted tapestry.
Size, 13 x 21½ inches.
Framed.

In this specimen there are 13 warps and 60 weft threads per inch. The colors are brown on a tan ground.

The design is composed of alternating rows of stylized birds and animals arranged diagonally. The creatures have characteristics of both Nazca and Chimu cultures. The protruding tongue and the feet are typical of Nazca while the headdress and tail lines are Chimu.

There have been no references to painted tapestries in any available sources.

This design, then, seems to be either Late Chimu or Late Nazca; in either case the date would be about 900 to 1400.

Figure 73

Sling shot.
Length, 122 inches.
Framed.

The sling shot is padded tapestry weave. The circular warp is three-strand and gives a heavily ribbed appearance. There is a geometric design of red, green, yellow and blue.

The cords at either end are braided, ending with

tassels.

It is impossible to date this specimen accurately. The design is Tiahuanaco II so it could be of that period or any later period. It is certainly pre-Spanish.

Plate II-A

Sling shot.
Probably maguey fiber.

This sling shot is not of woven material, but is figure 8 and spirally wrapped around a core. The cord is braided. The colors are brown and tan.

There is nothing to indicate the culture. It is impossible to date this specimen further than to say that it is certainly pre-Spanish.

Plate II-B

Spindle used in the pre-Spanish periods. Exact dating is impossible.

Plate III

Spindle and samples of wool used in pre-Spanish cultures. The wooden spindle has had painted designs that are now so faint that it is impossible to determine what they were.

The wool is all vicuna with beard hair in samples a, b, c, d and f. All are dyed except e, which is white.

Plate I-B

This is a bit of white cotton in the process of being spun.

Plate IV

On this plate is shown at the top four spindles and bobbins of wood with painted designs which are so faint it is impossible to tell the design or colors.

In the center there is a carved wooden figure of a man. On the left hand side of him is shown a wooden, shuttle-like piece that may have been used to wrap the yarns on. No other object like it has been found in available sources so it is impossible to know definitely just what it was used for. On the right hand side of the plate is a wooden weave dagger.

It has been impossible to determine what the object at the bottom of the plate is or what it was used for.

CONCLUSIONS

The study of ancient Peruvian textiles is of vital interest today, not only because we learn from the study about past civilizations, but because the same race, very little modified, is now living in the Andean region today. It is safe to assume that physically and geographically Peru is about as it was when the textiles were made that have been described in this study. The general way of life is much as it has been for centuries. The people still have the ability to perform again the miracles of artistic creation that their ancestors perfected in the past. But not until a true understanding of their history and of their present needs in relation to their past is known, will they be able to surprise the world with a renaissance of their former genius.

Much can be discovered by the comparisons of color and design on their pottery, architecture, metal work and textiles. The same designs were used by one group on all mediums of expression, and by knowing the meaning, date or location of one, many others may be successfully classified. This study is of such great importance that Miss Grace Denney, professor of Home Economics at the University of Washington, has taken a leave of absence for

one year and has gone to Peru to compare the textile and pottery designs.

The true story in its entirety can not be found in Peru alone, as the Indians from Southwestern United States, Mexico, and Central America have similar backgrounds and possibly a common origin. There are designs on pottery found in Arizona that are identical to some found in Peruvian art. A comparative study of the art of Peru with the art of Central America, Mexico and Southwestern United States would be of value in completing the ancient American history.

More tombs are being discovered each year in Peru. As more treasures are unearthed, further comparisons and investigations should be made. This study by no means answers all of the questions that we ask of the past. It is only when archaeology has provided us with all that there is in Peru and other areas that tell of the past that the study of ancient Peruvian textiles will be complete.

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ADVANCE BOND

APPENDIX

PICTURES OF TEXTILES

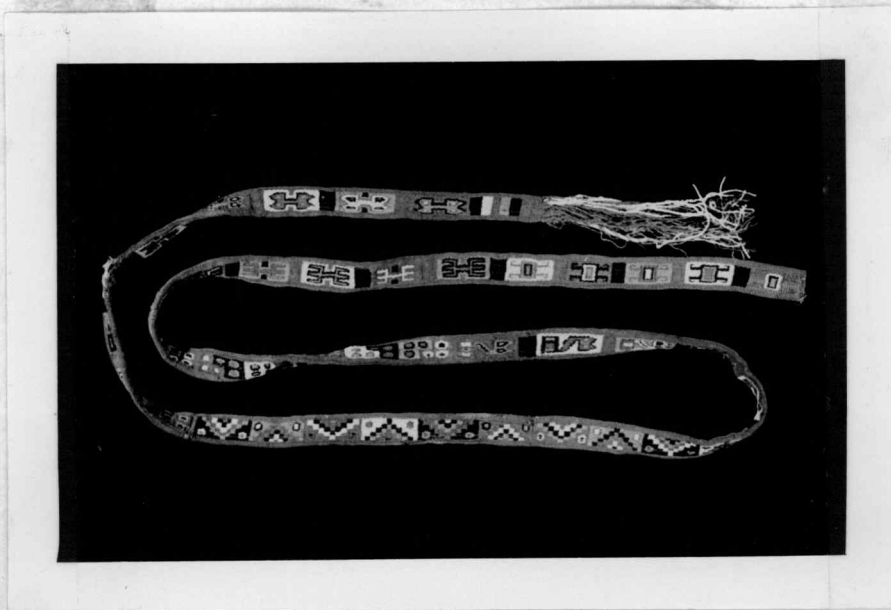


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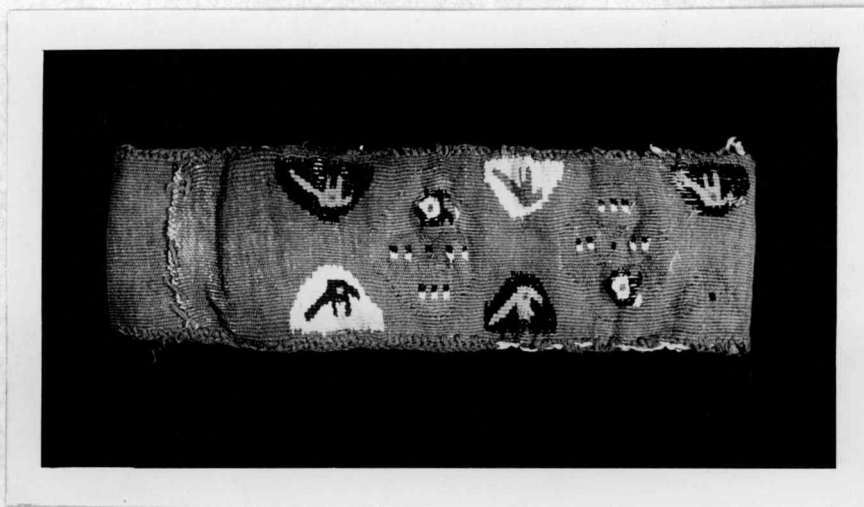


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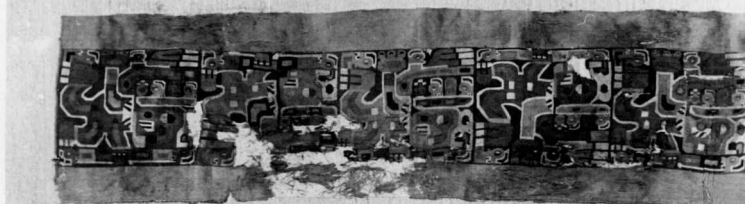


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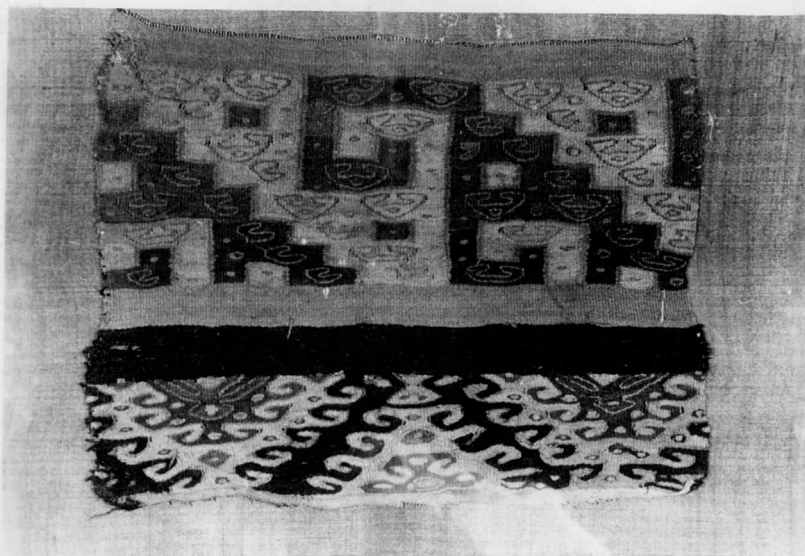


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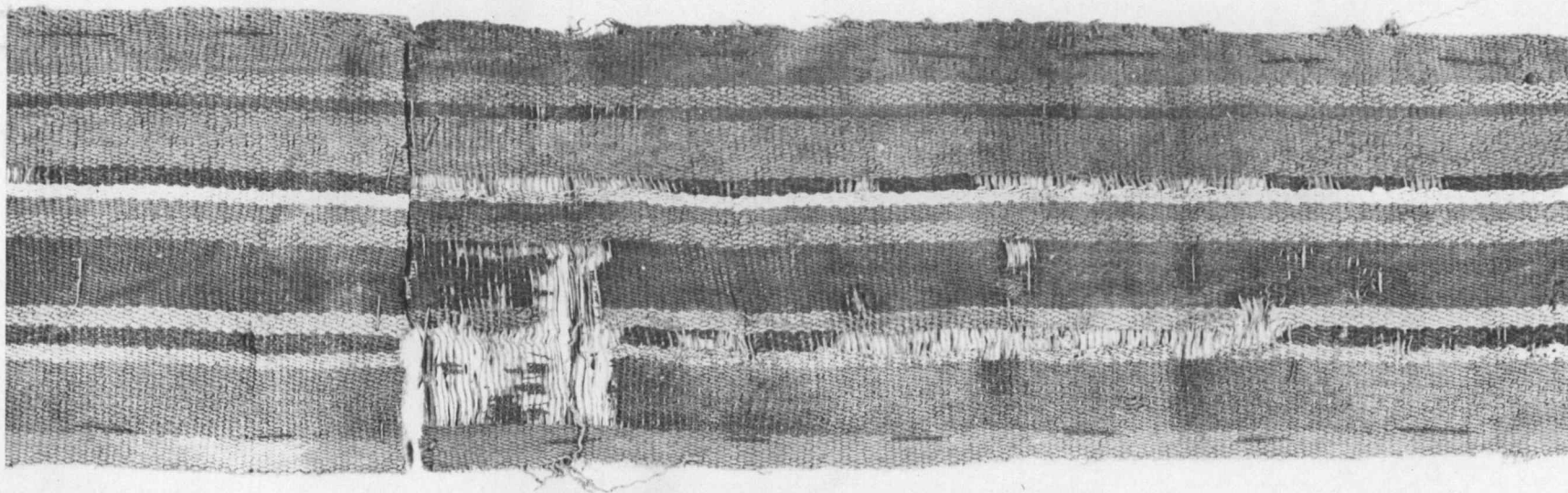


Figure 5.

Figure 6.



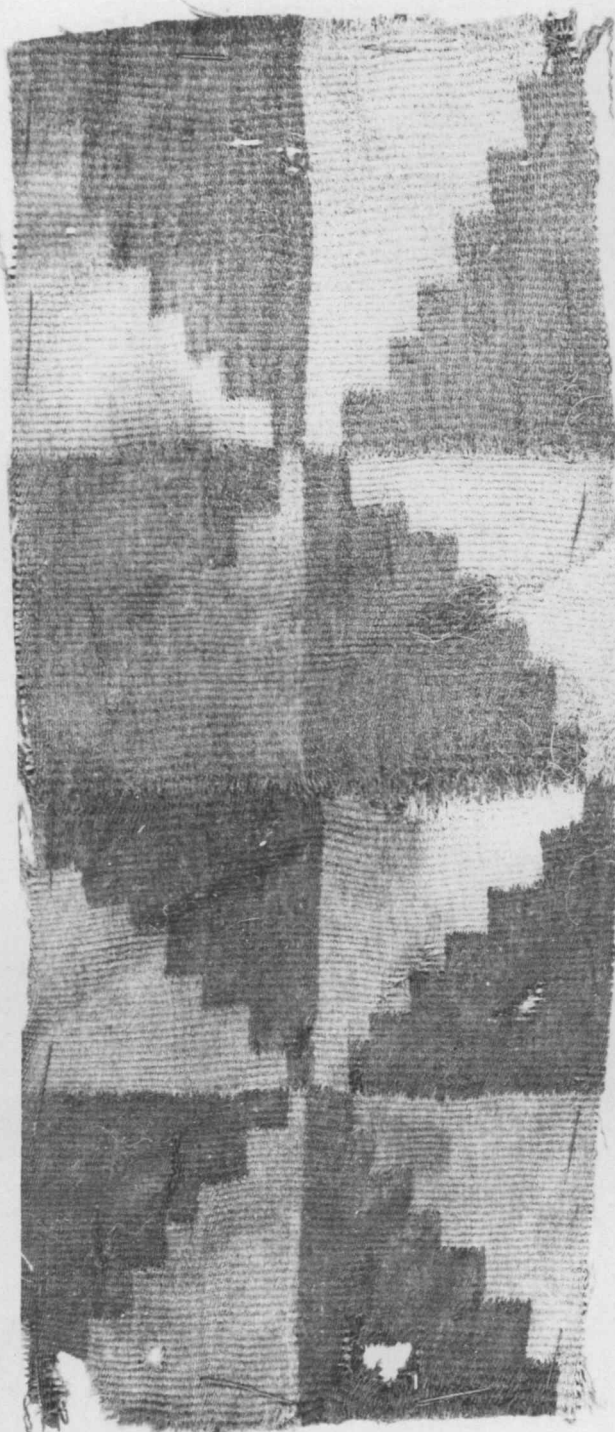


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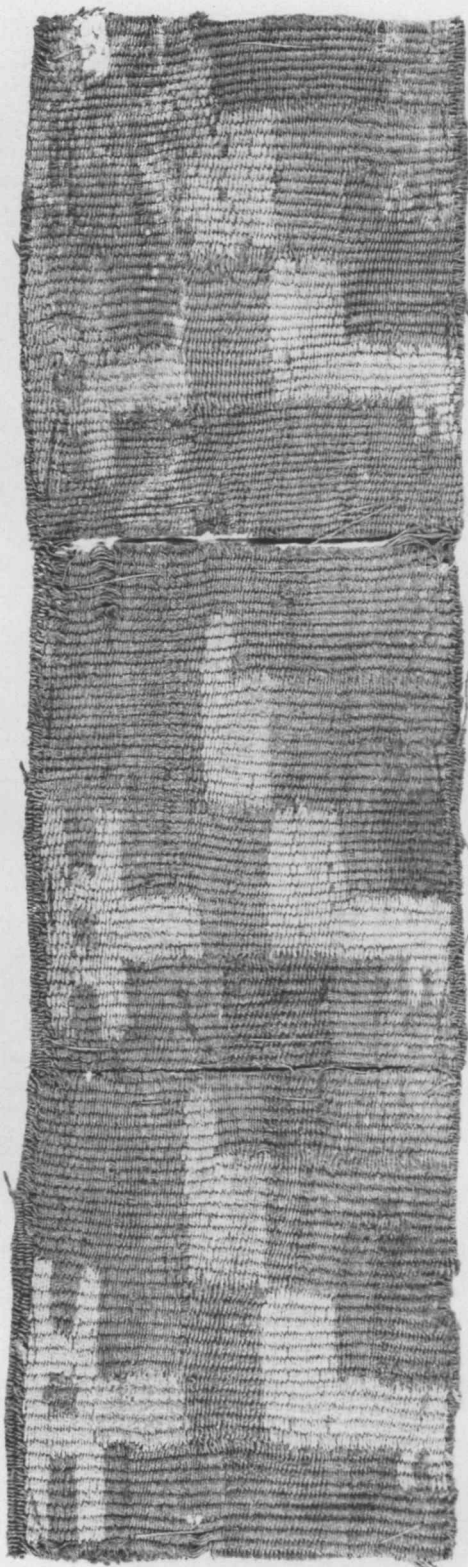


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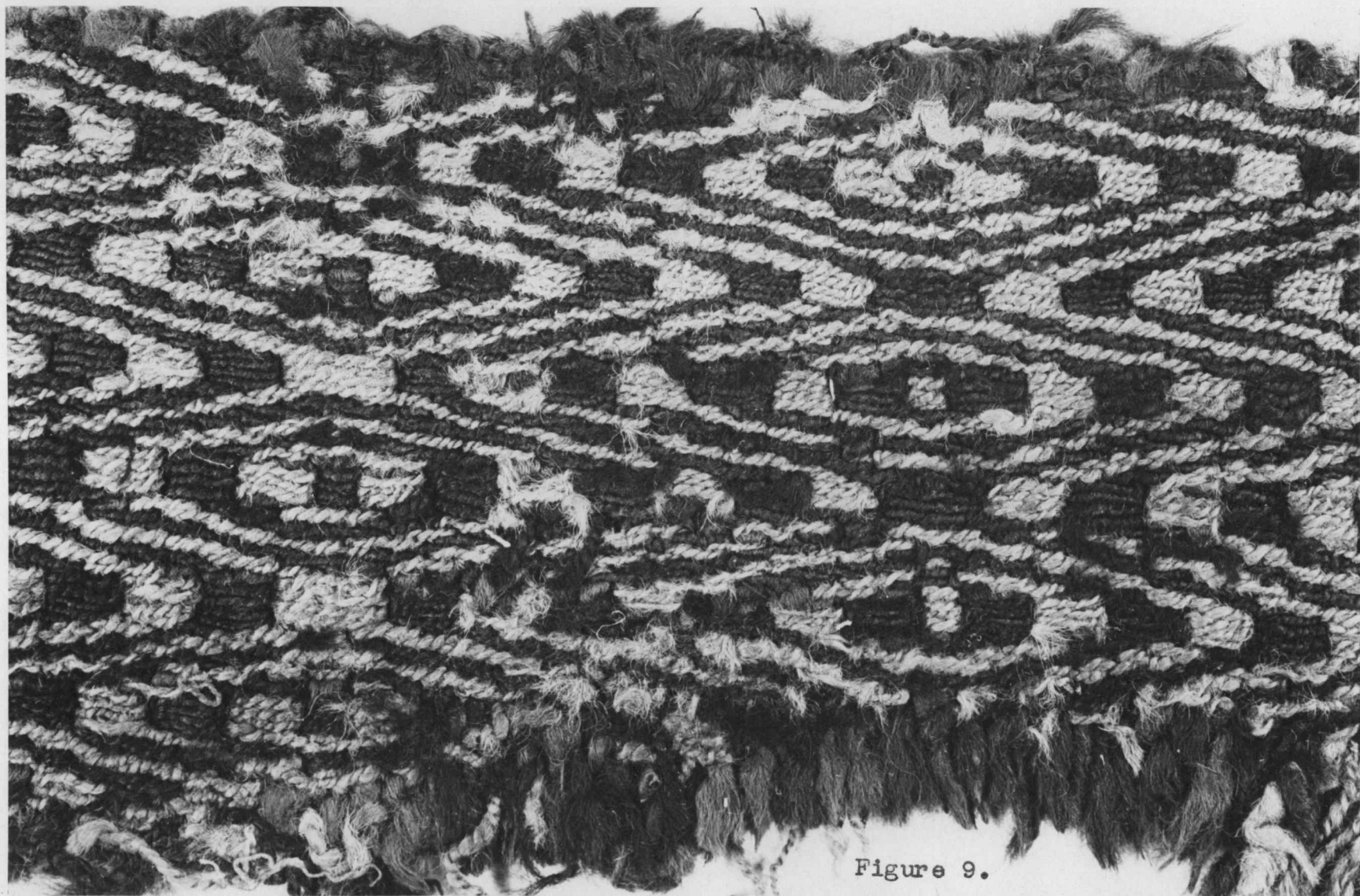


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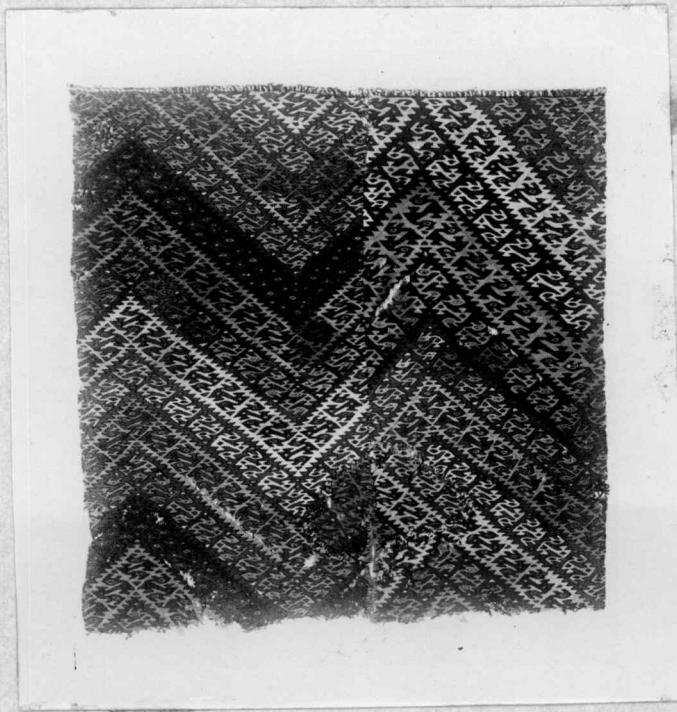


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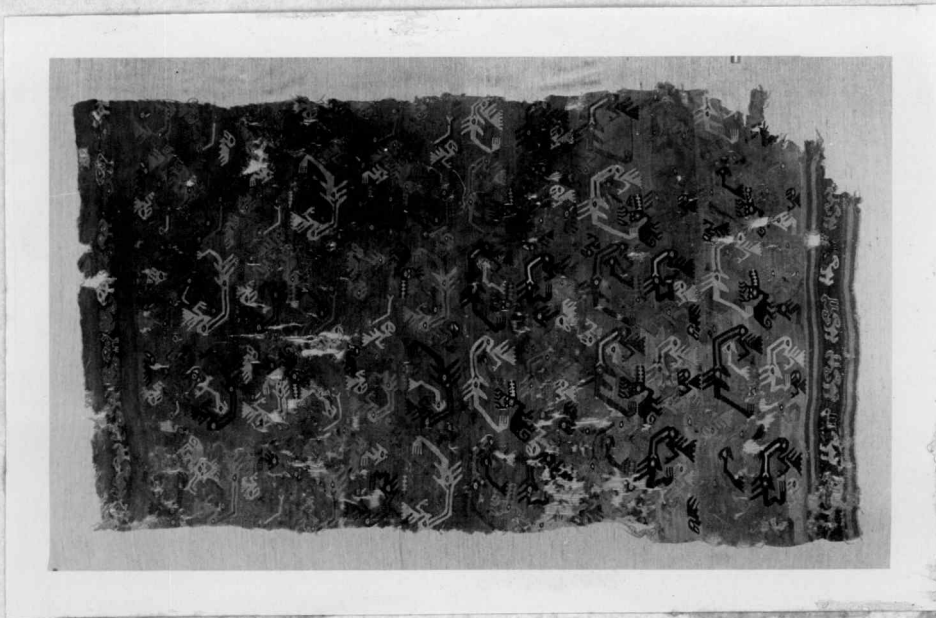


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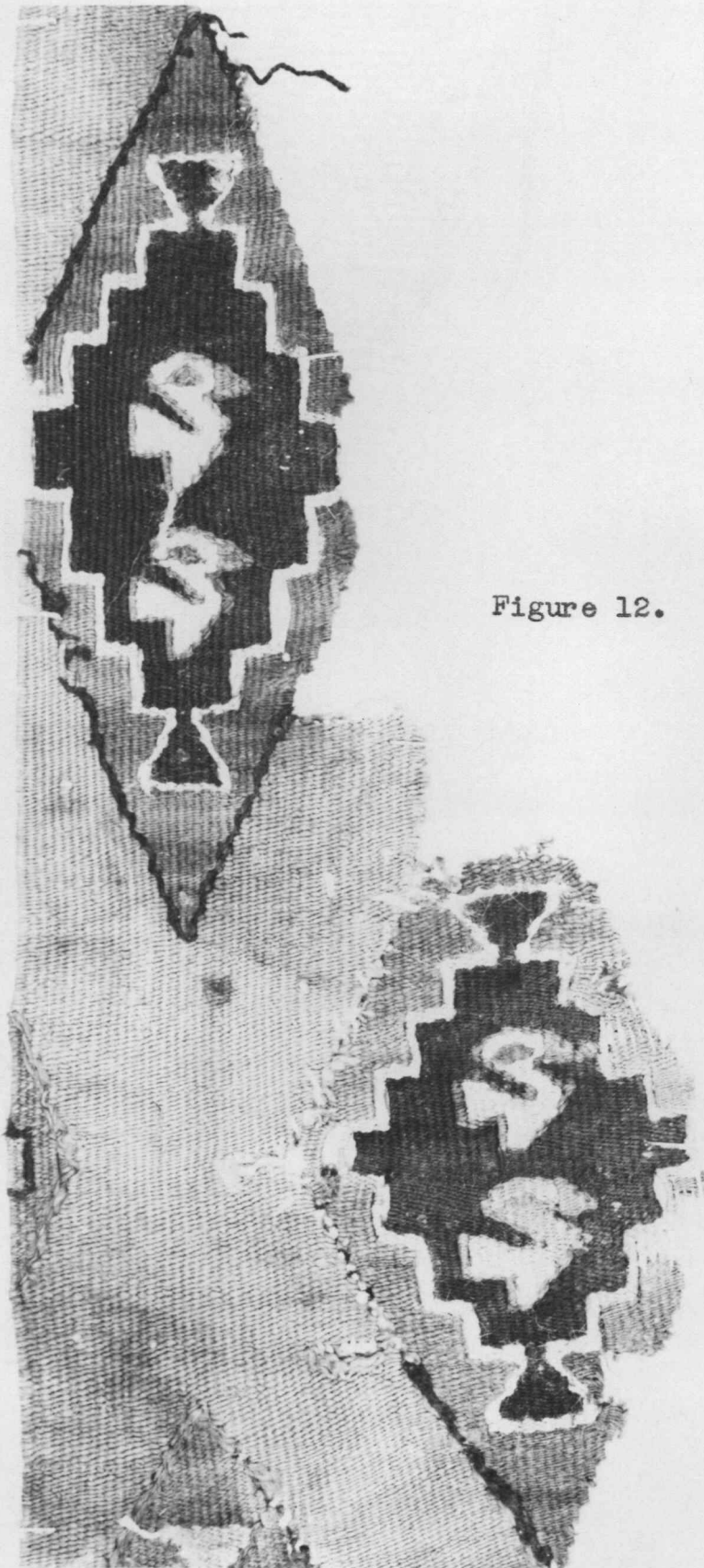


Figure 12.



Figure 13.

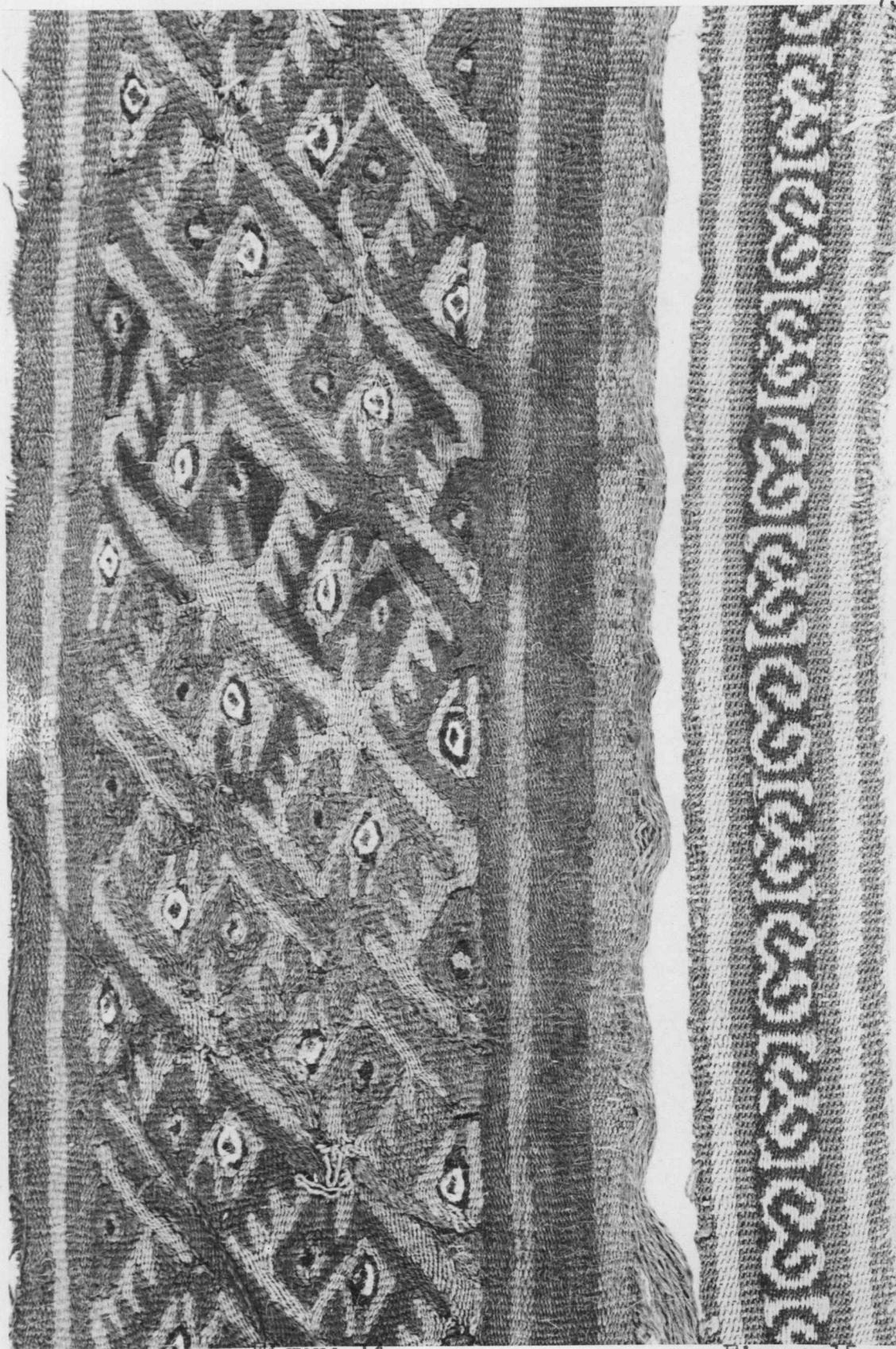


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Figure 15.

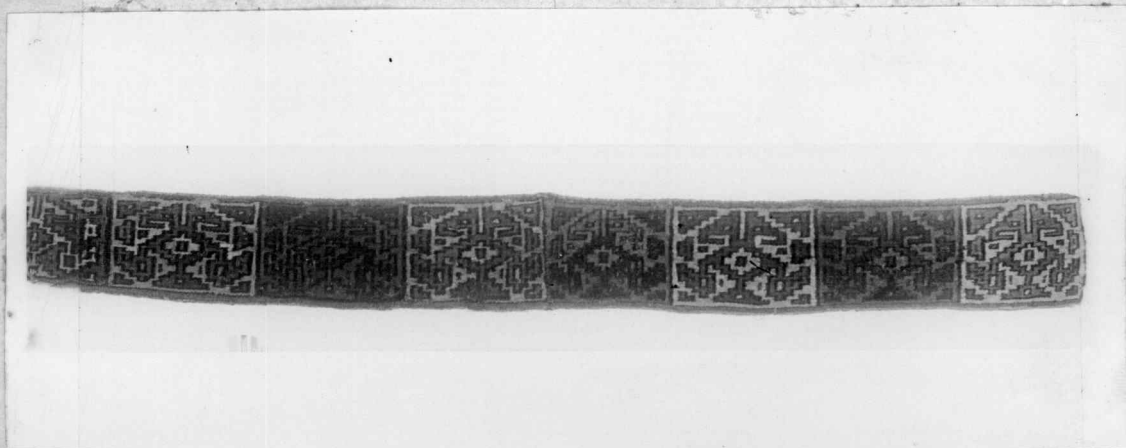


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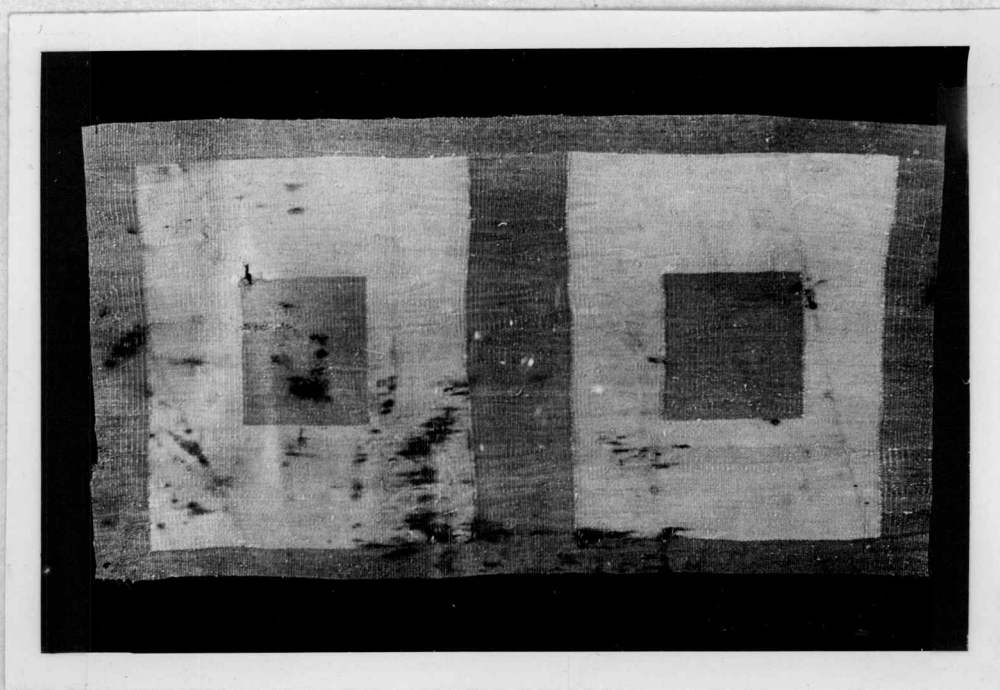


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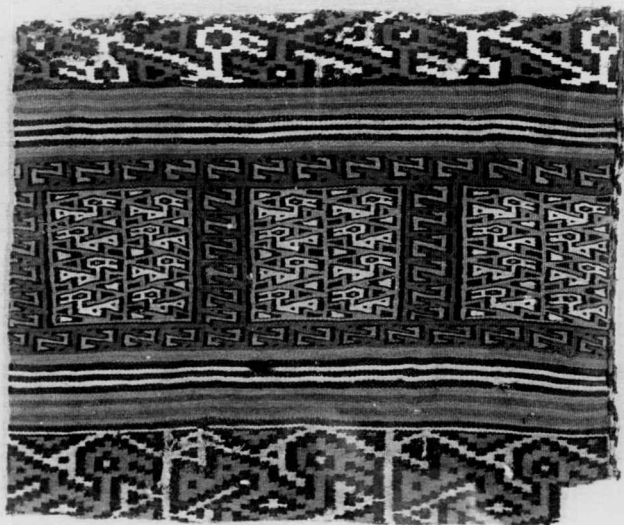


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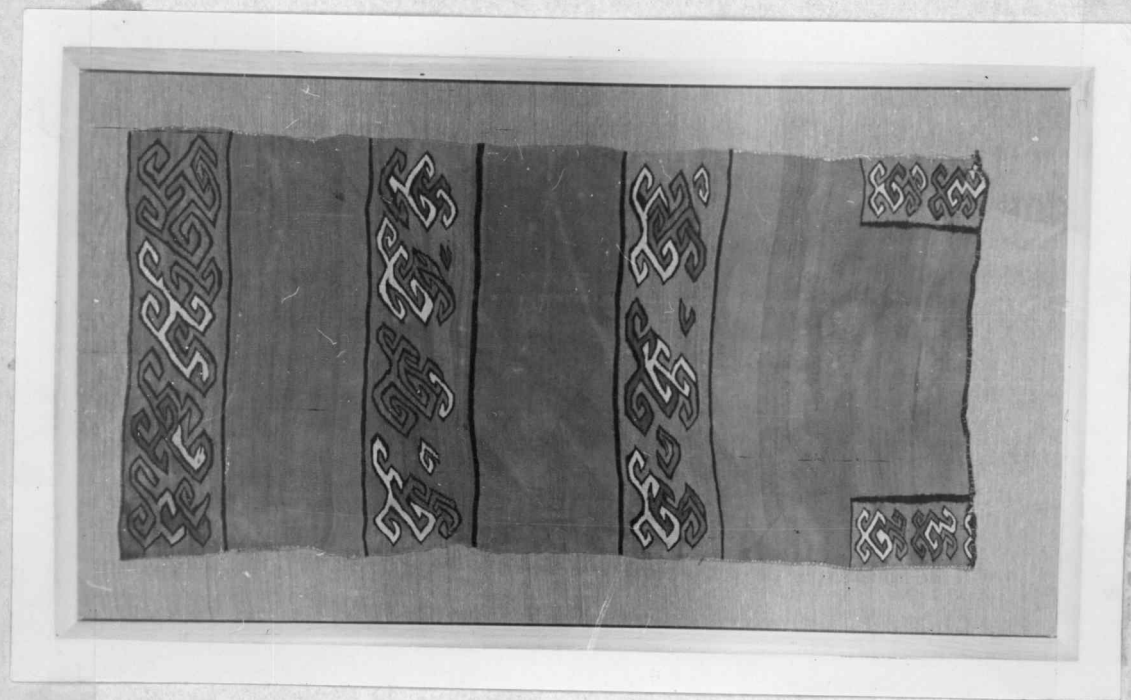


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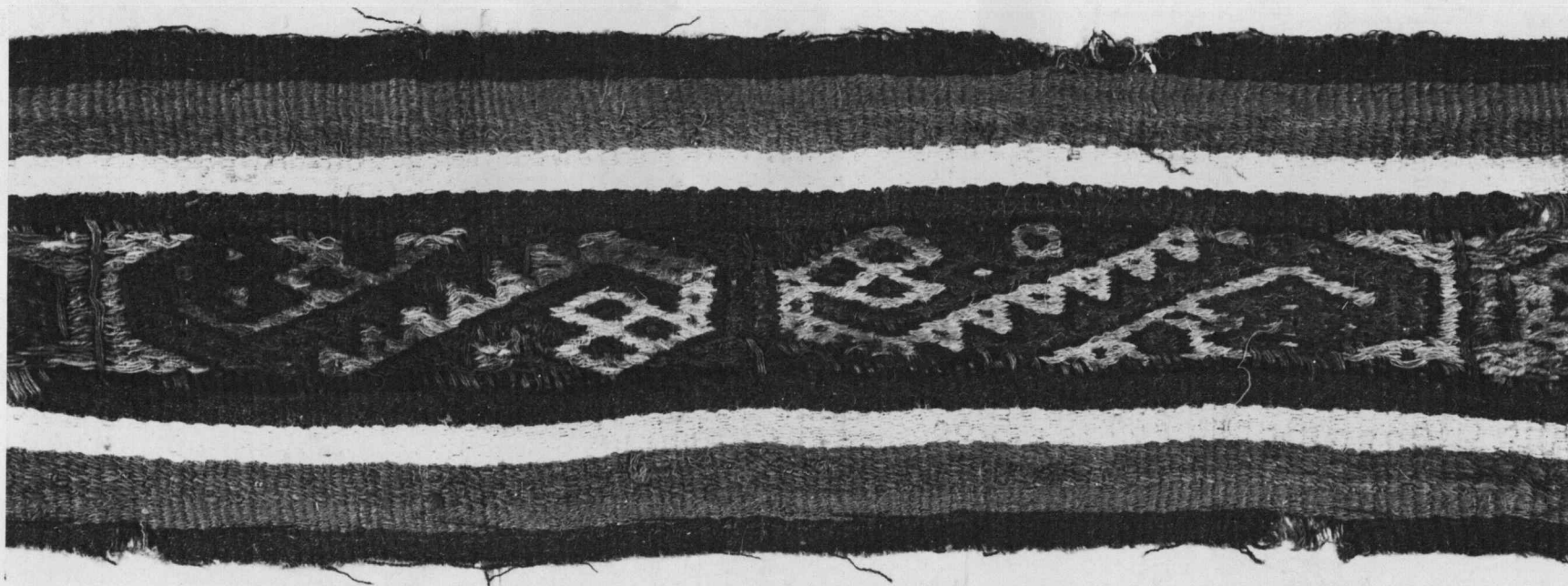


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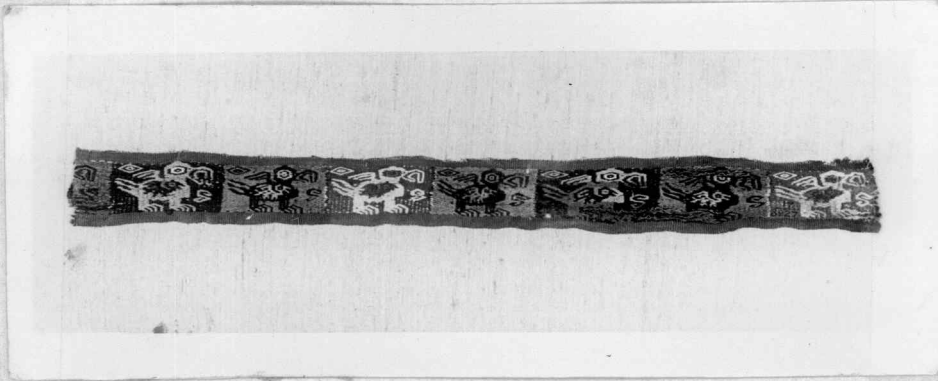


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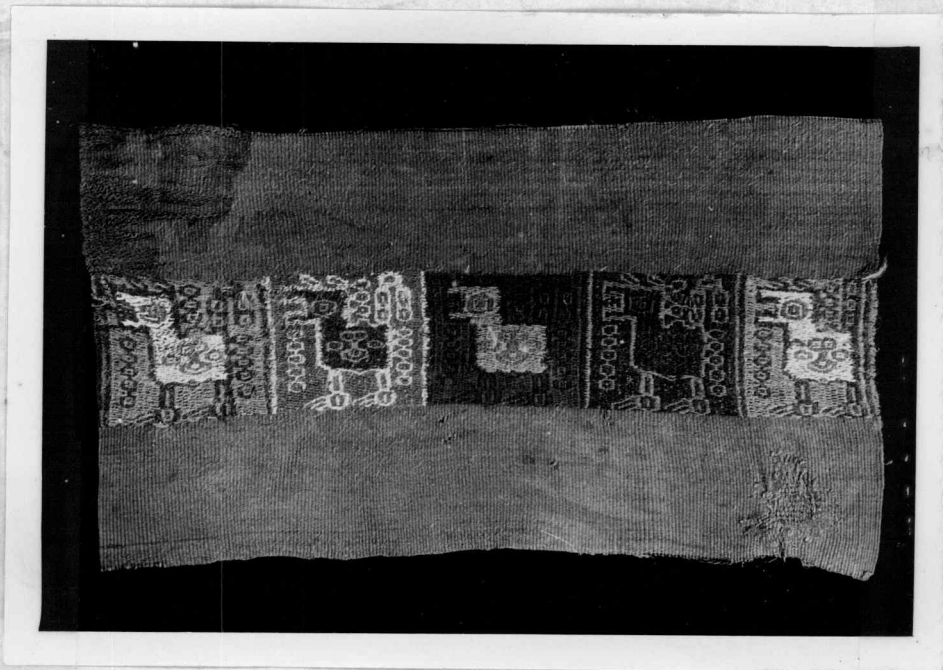


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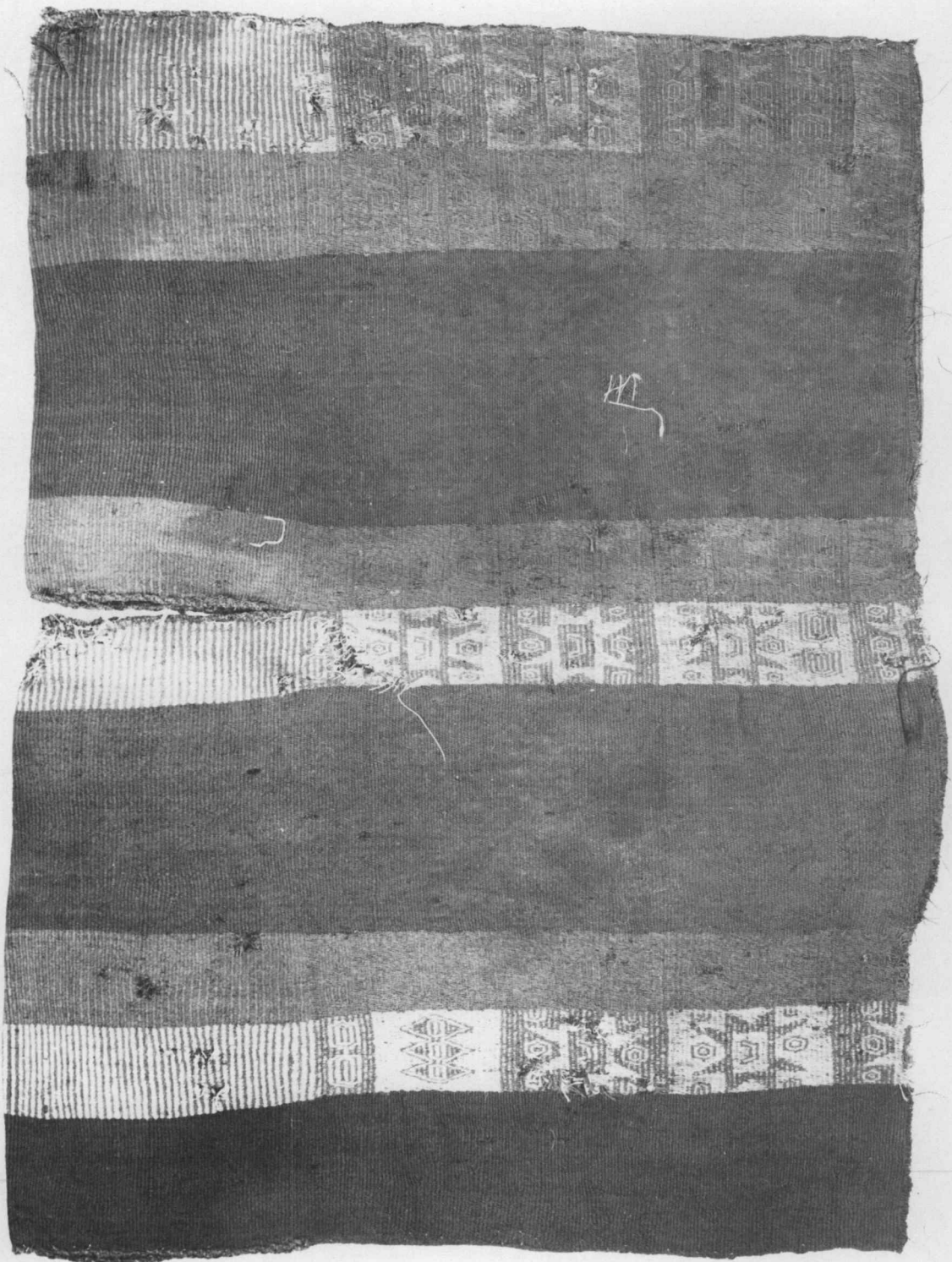


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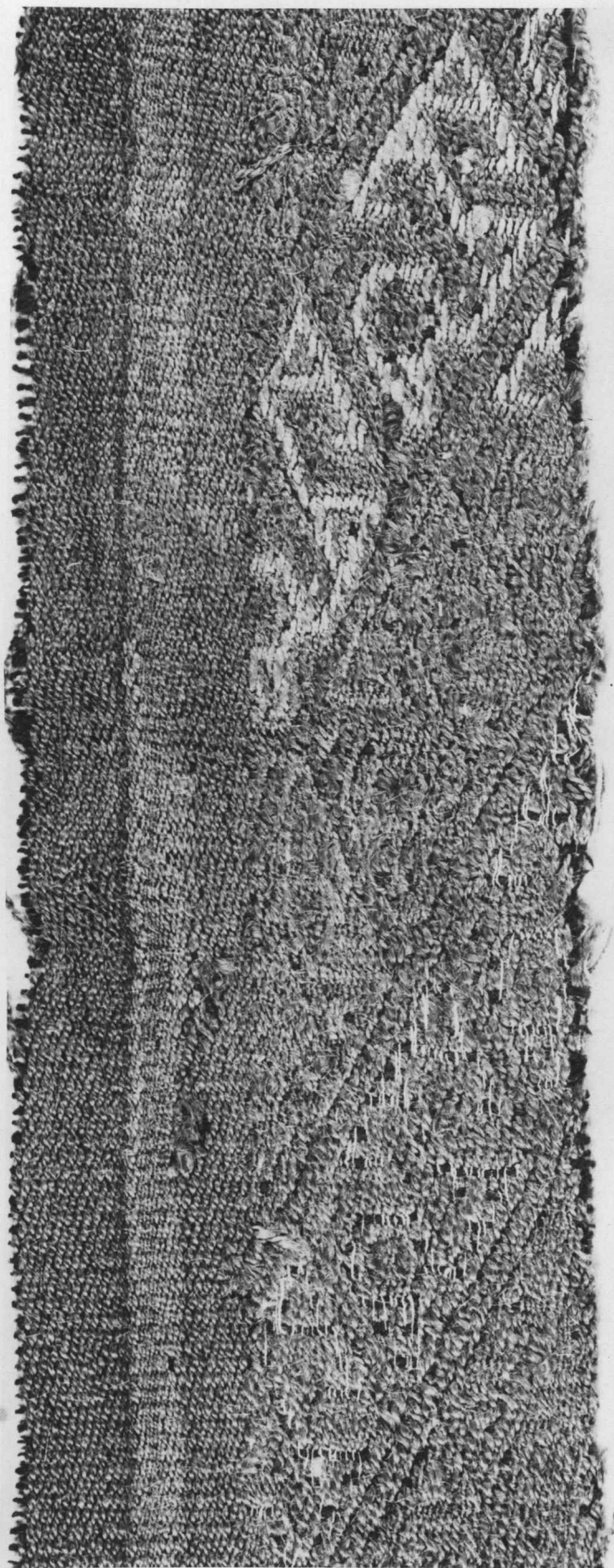


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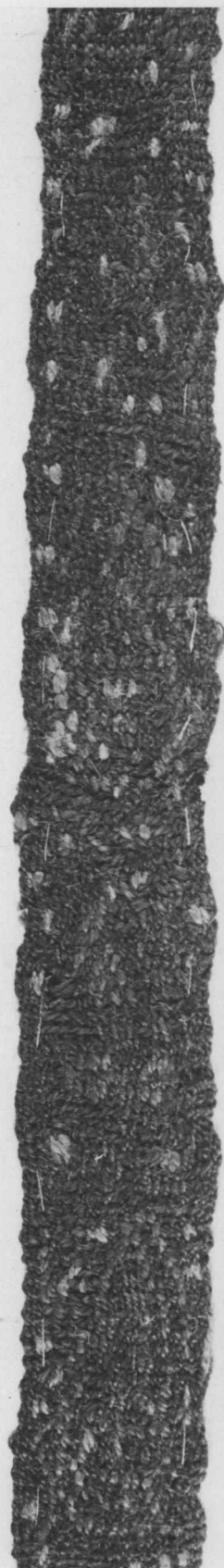


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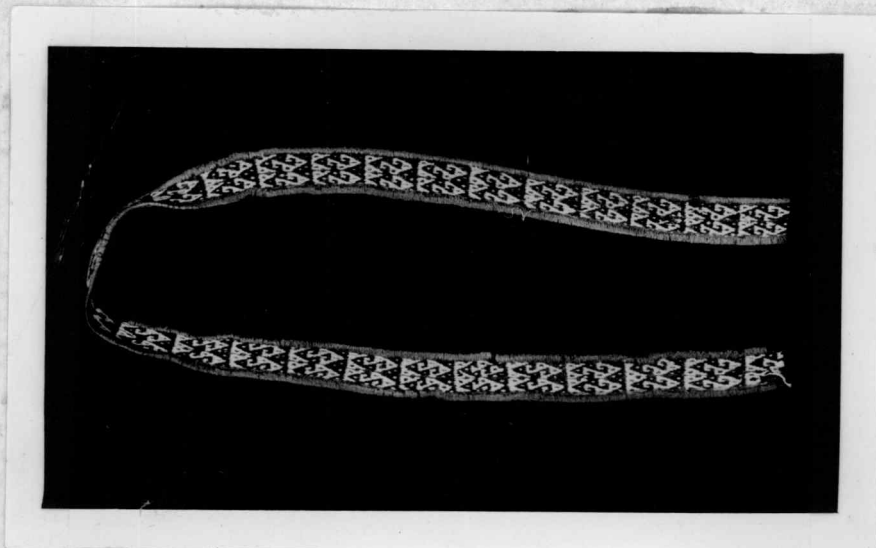


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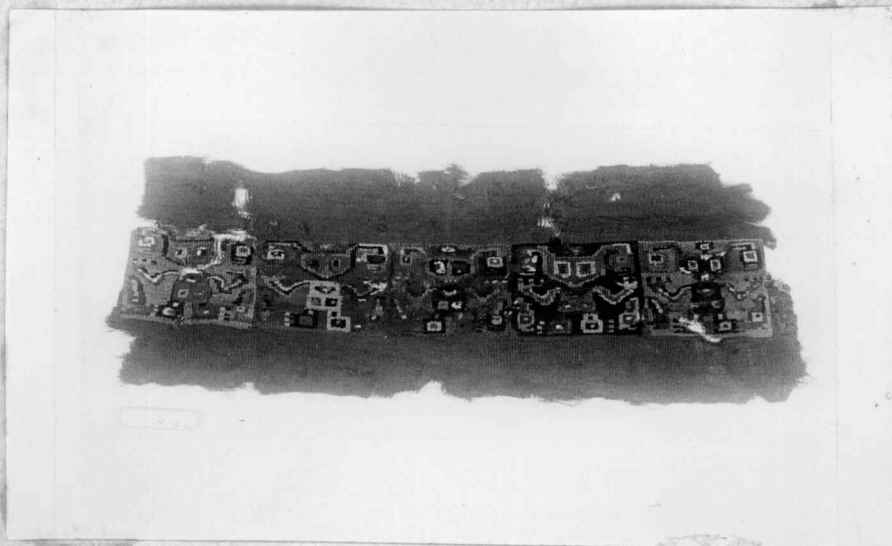


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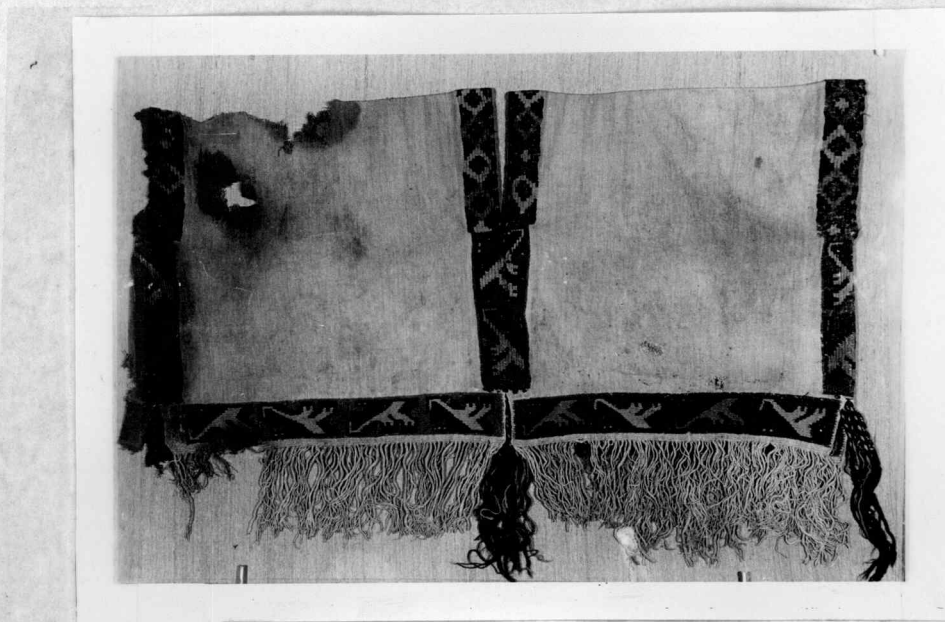


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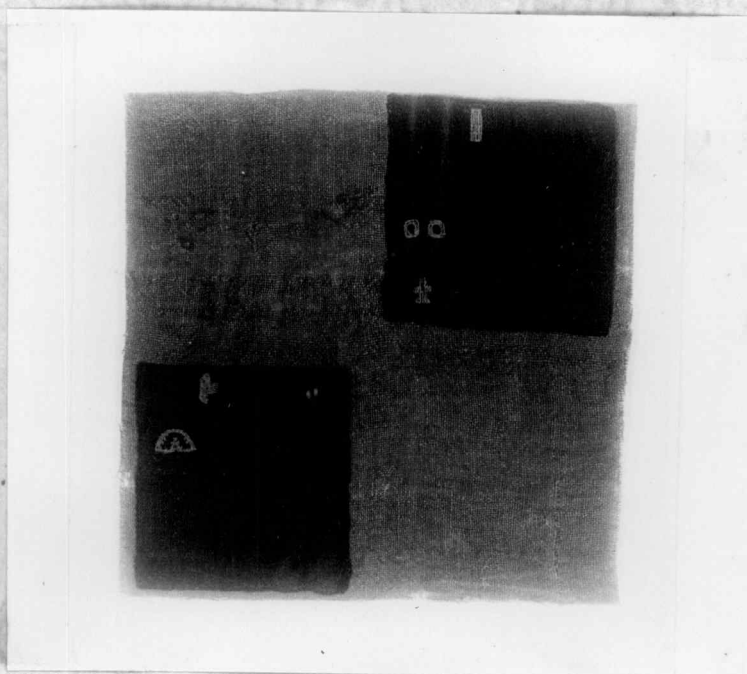


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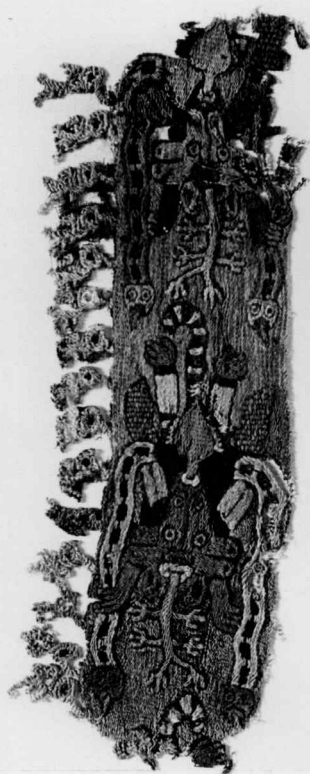


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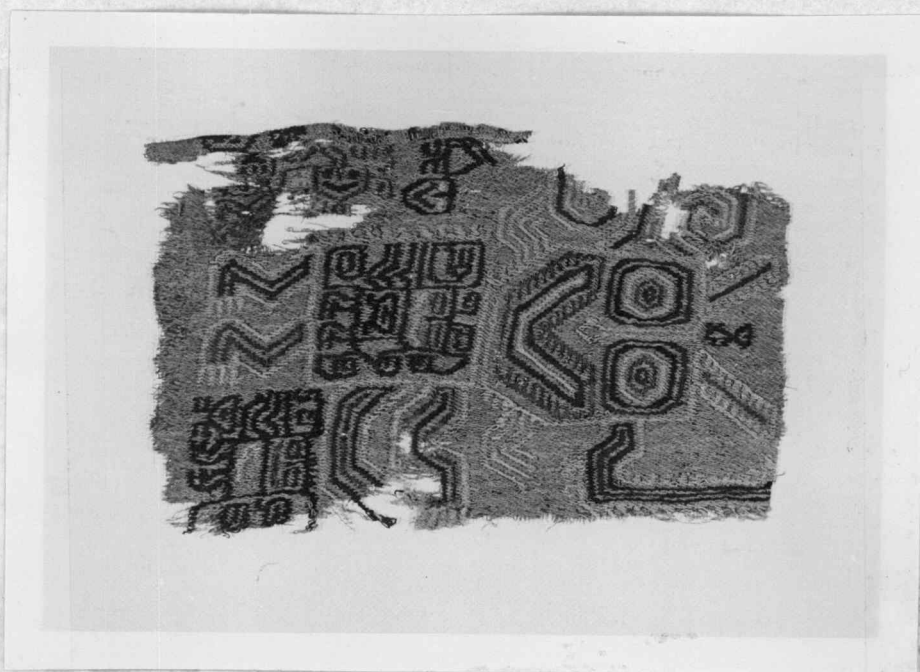


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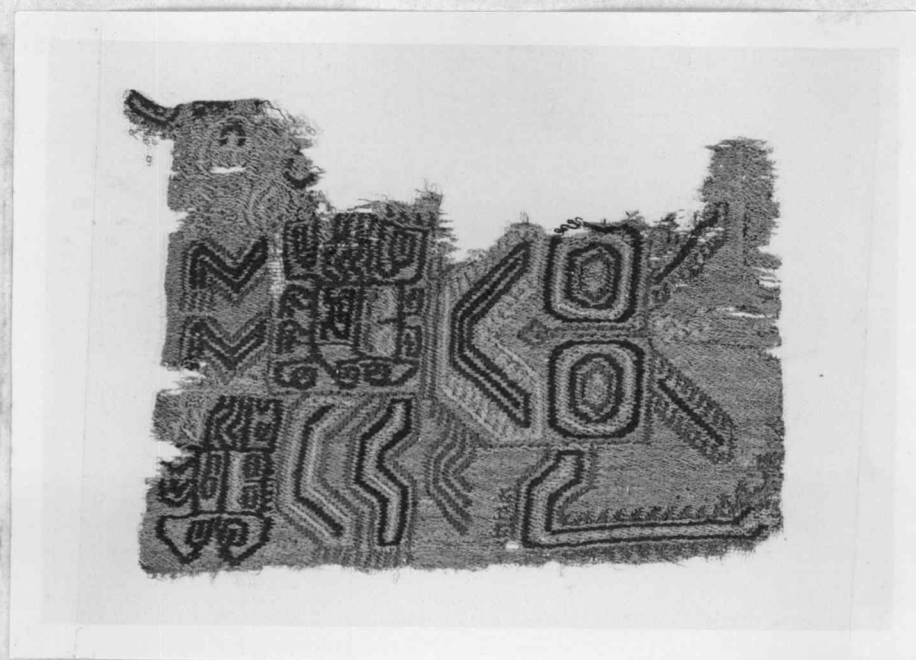


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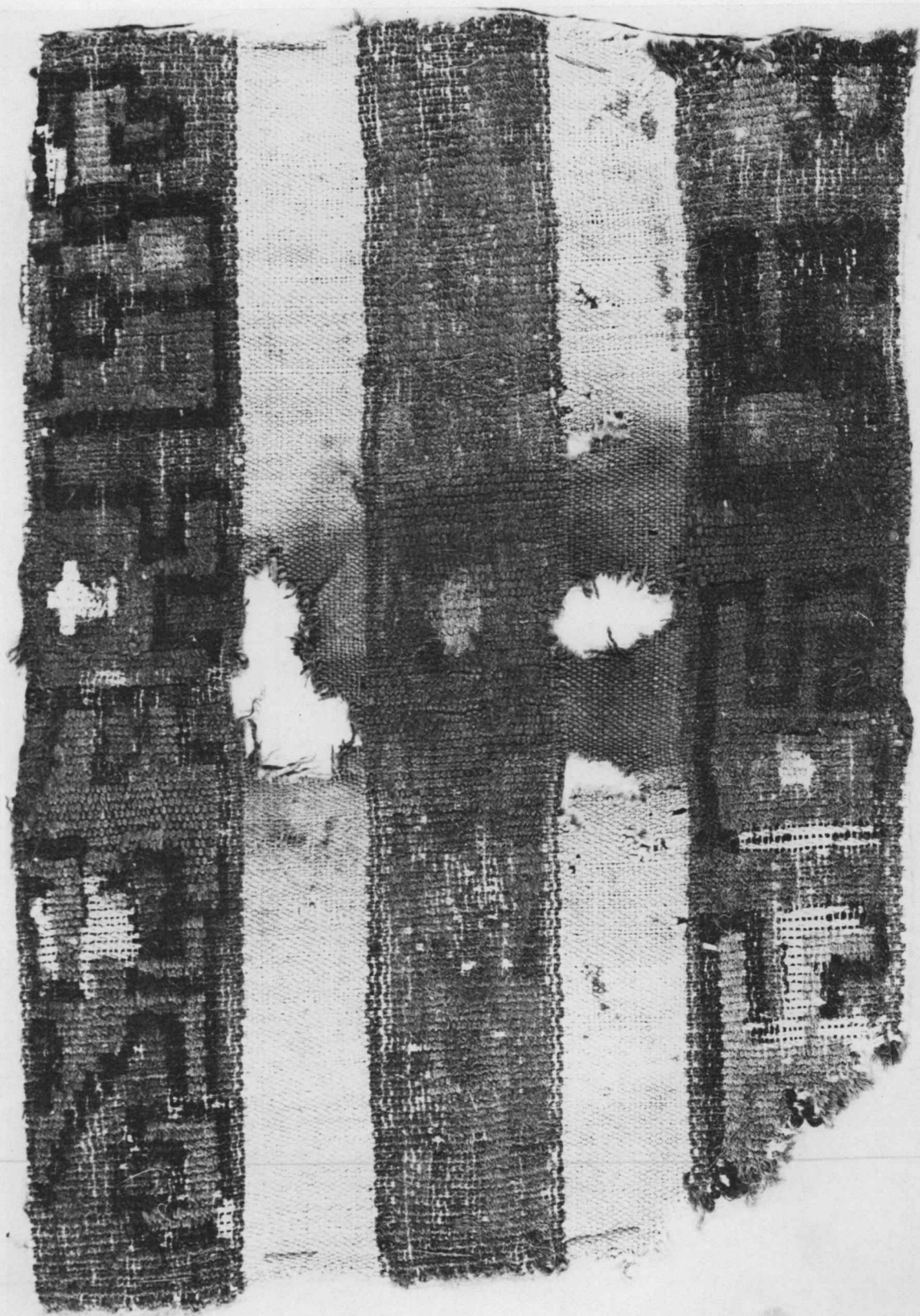


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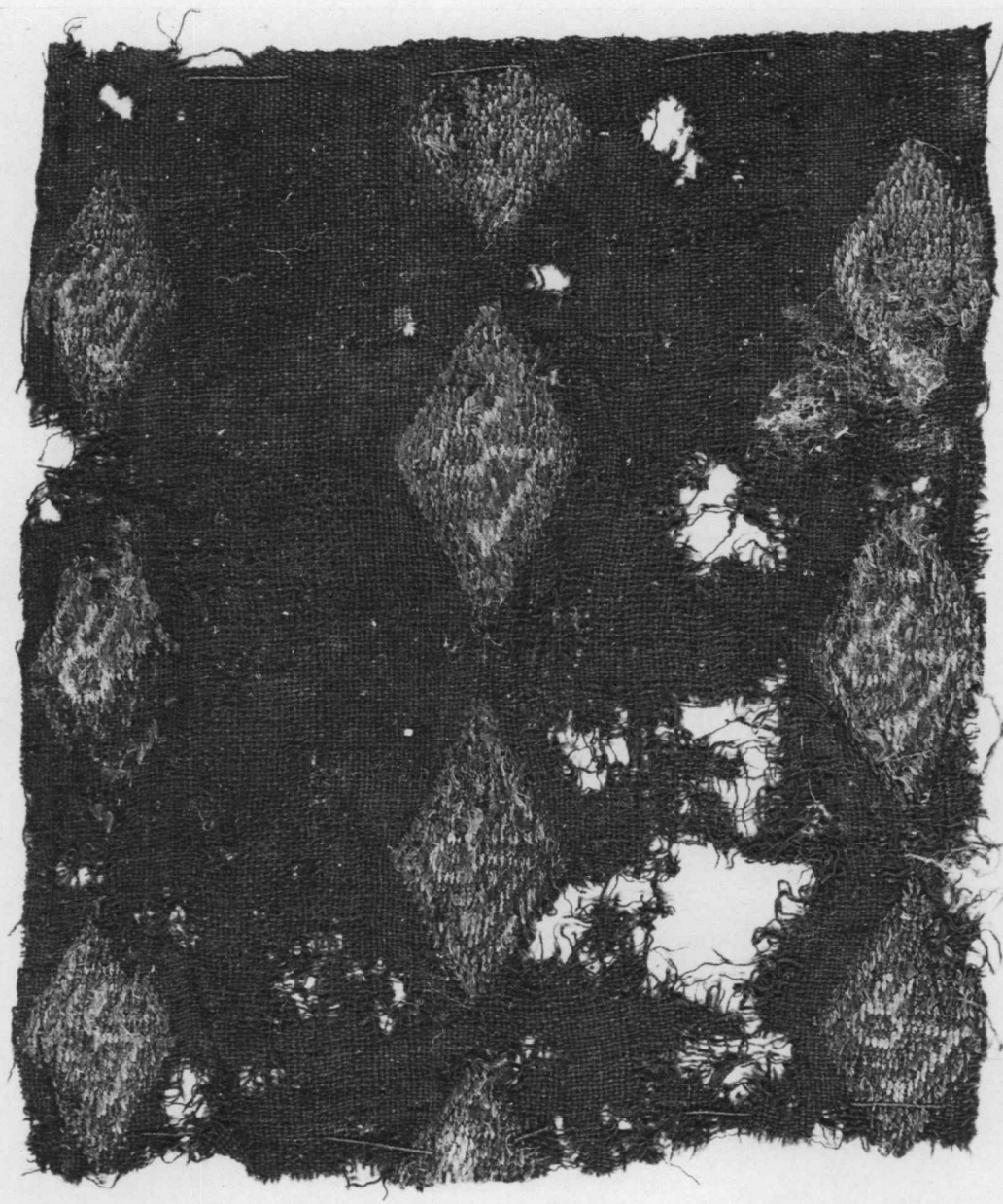


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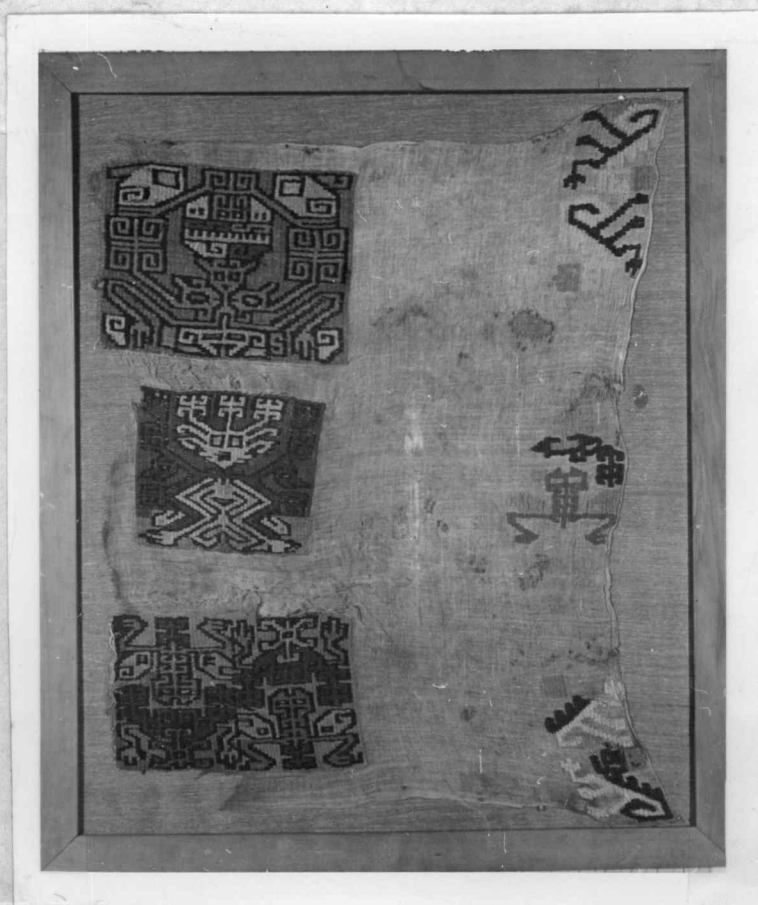


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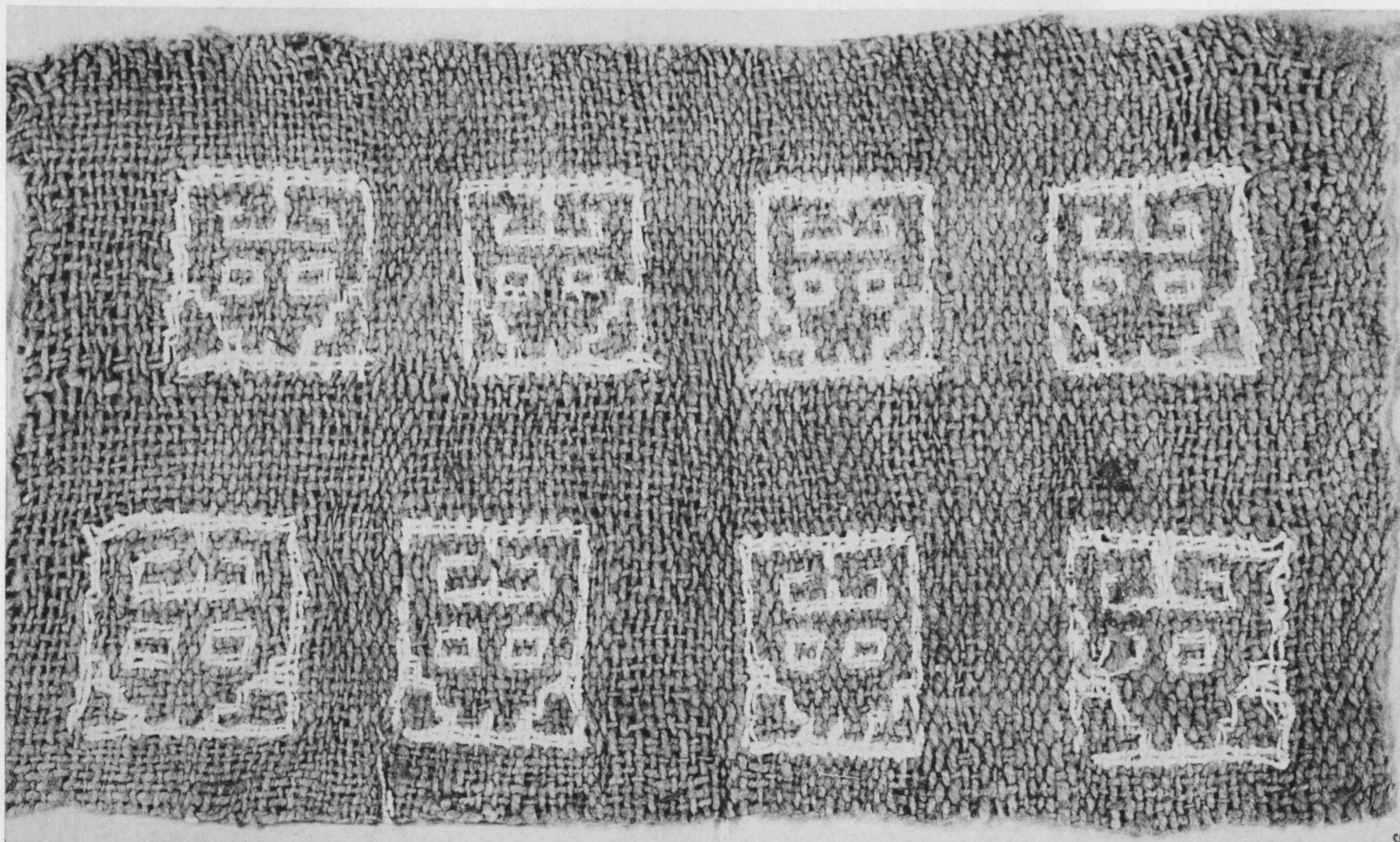


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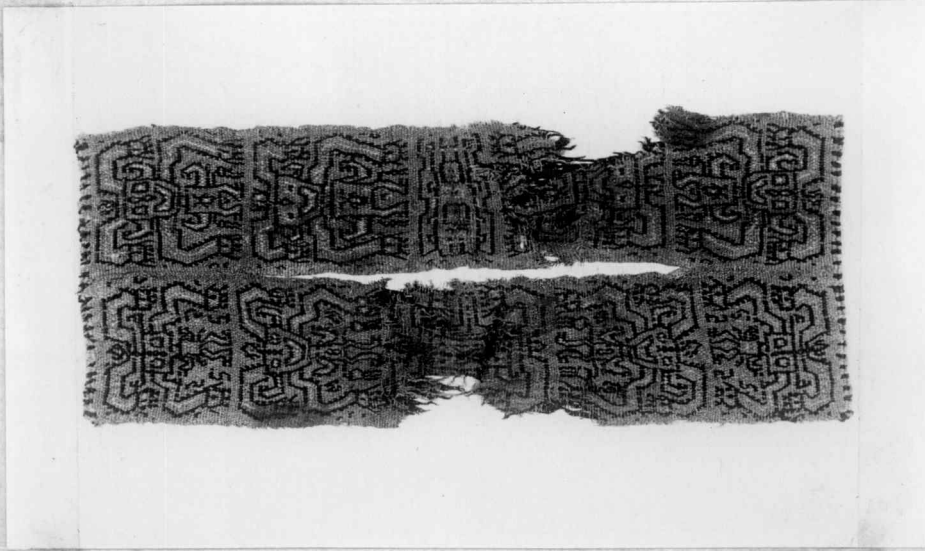


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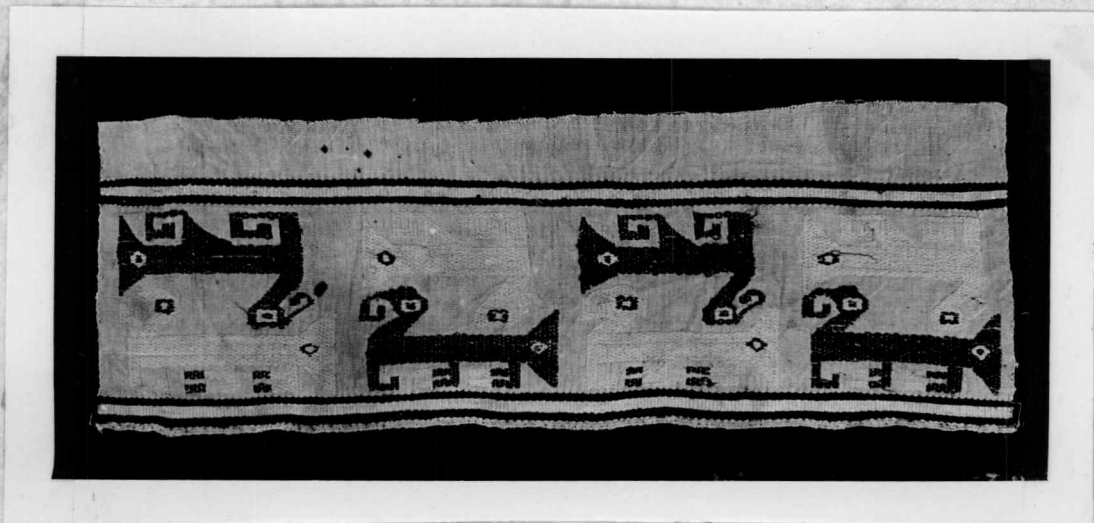


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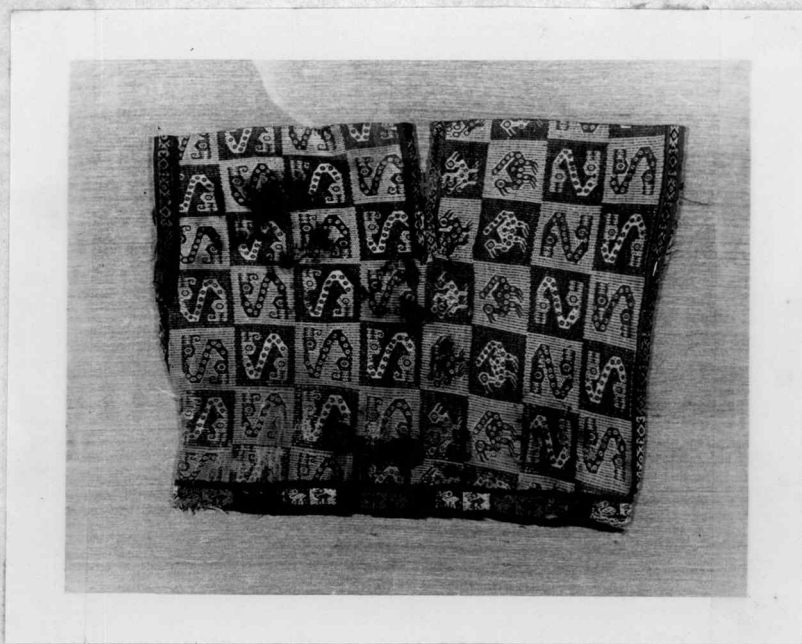


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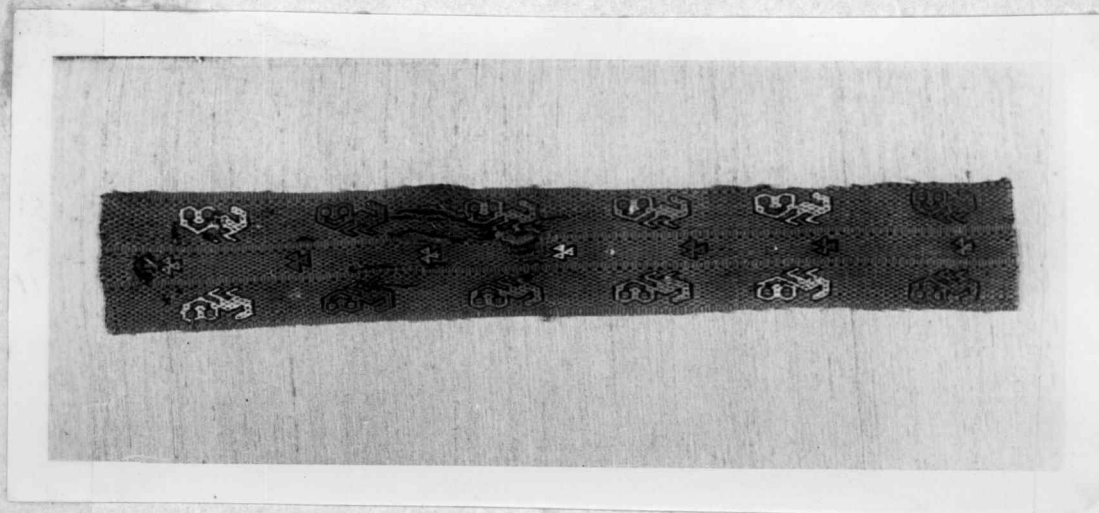


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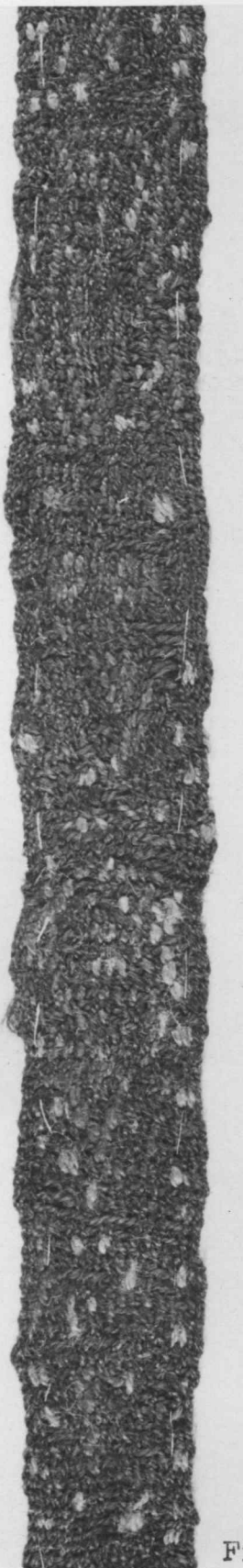


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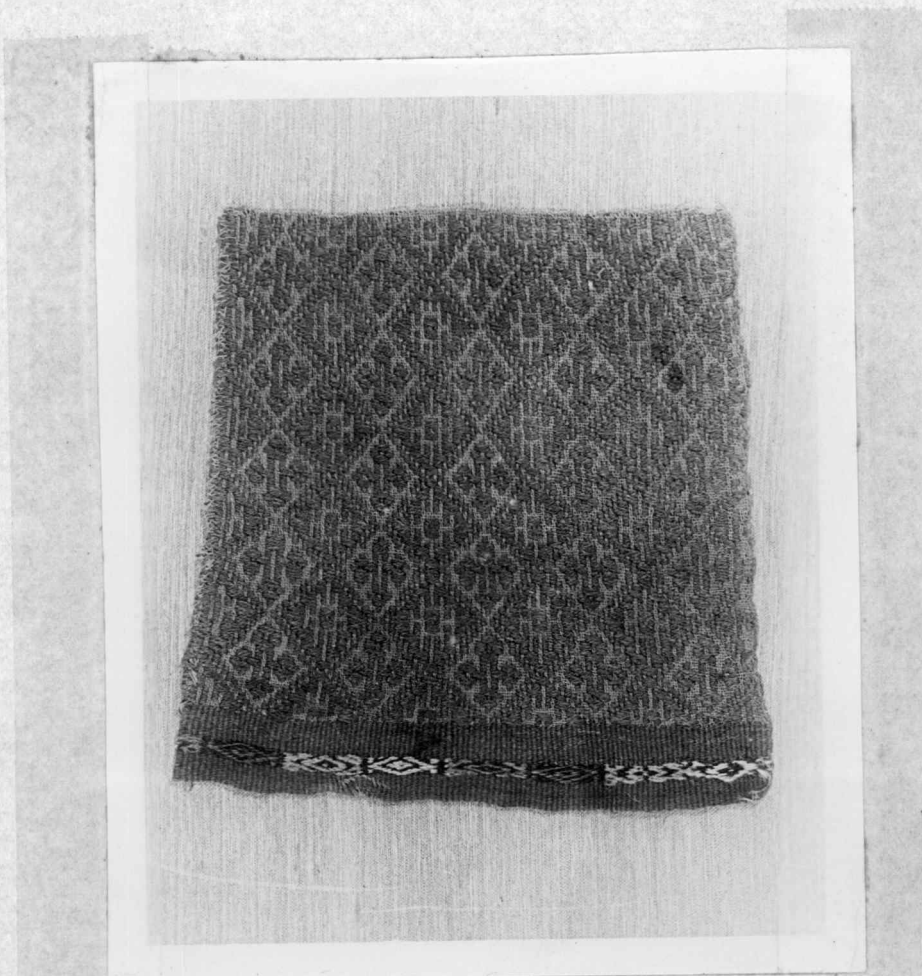


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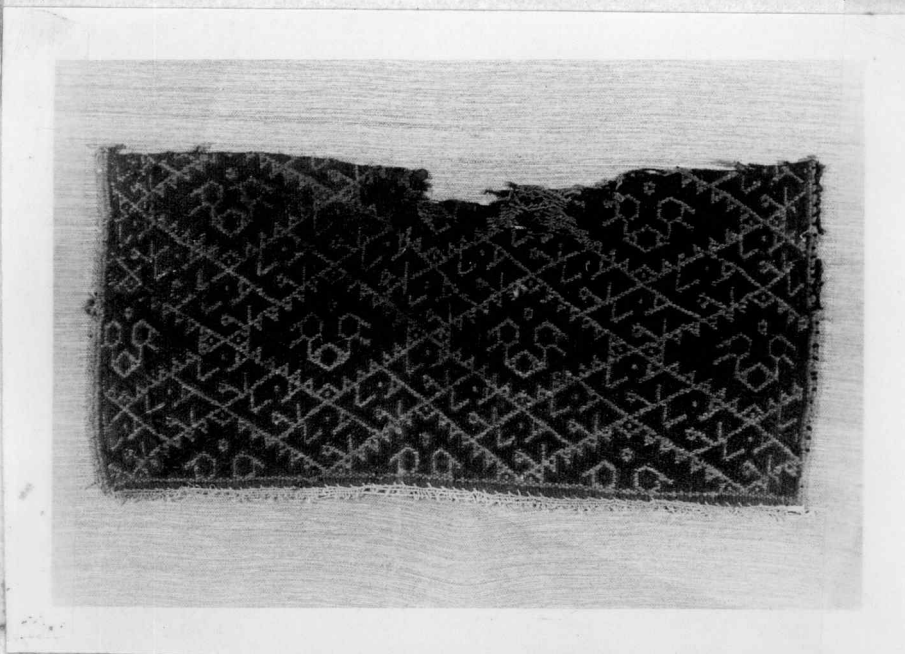


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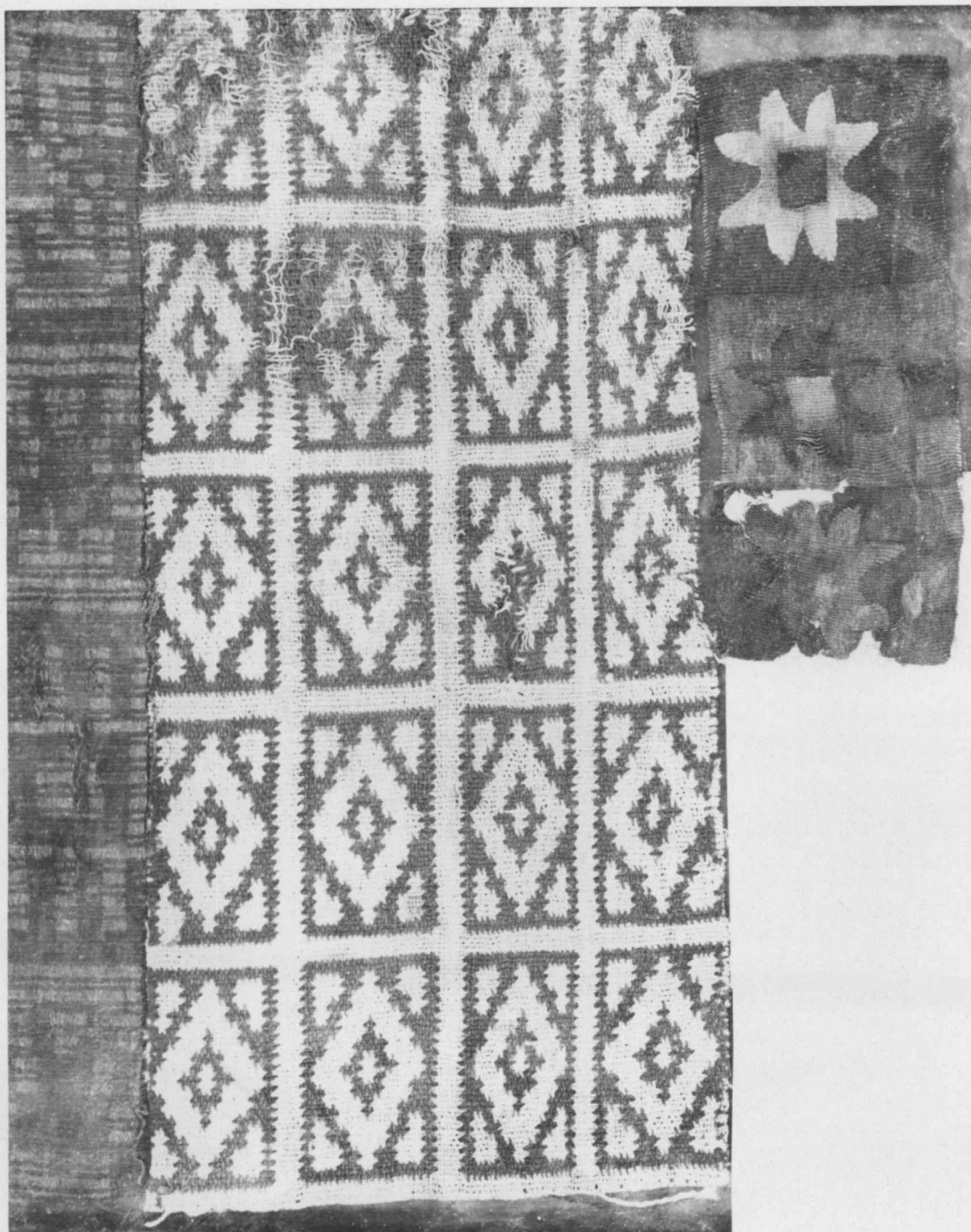


Figure 48.

Figure 49.

Figure 50.



Figure 51.

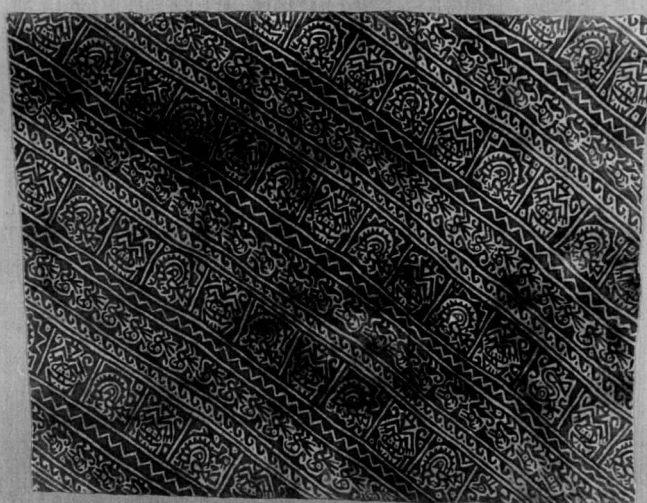


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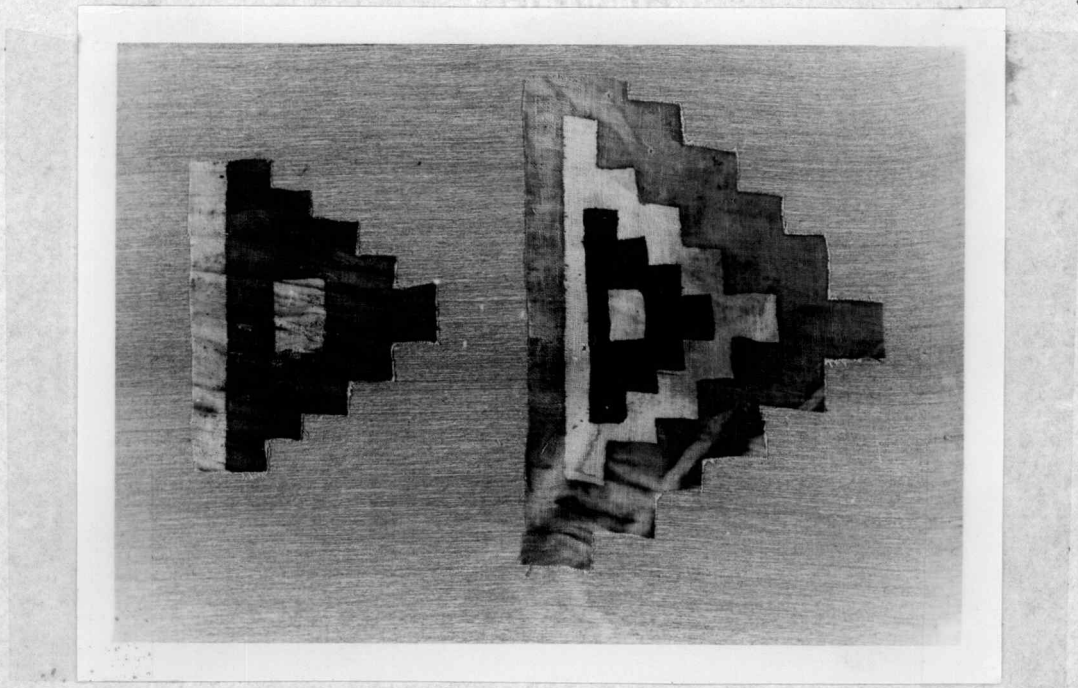


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Figure 54.

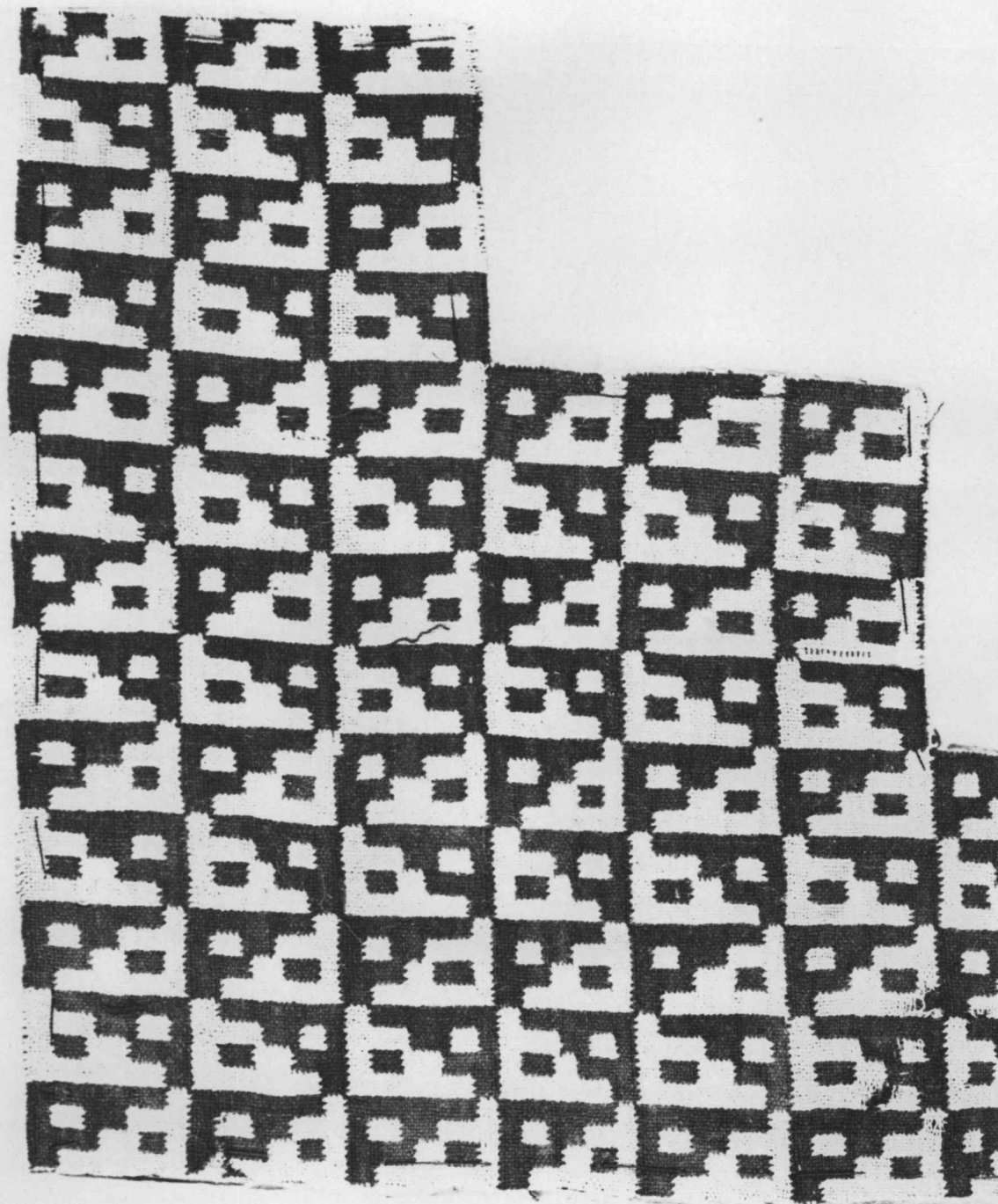


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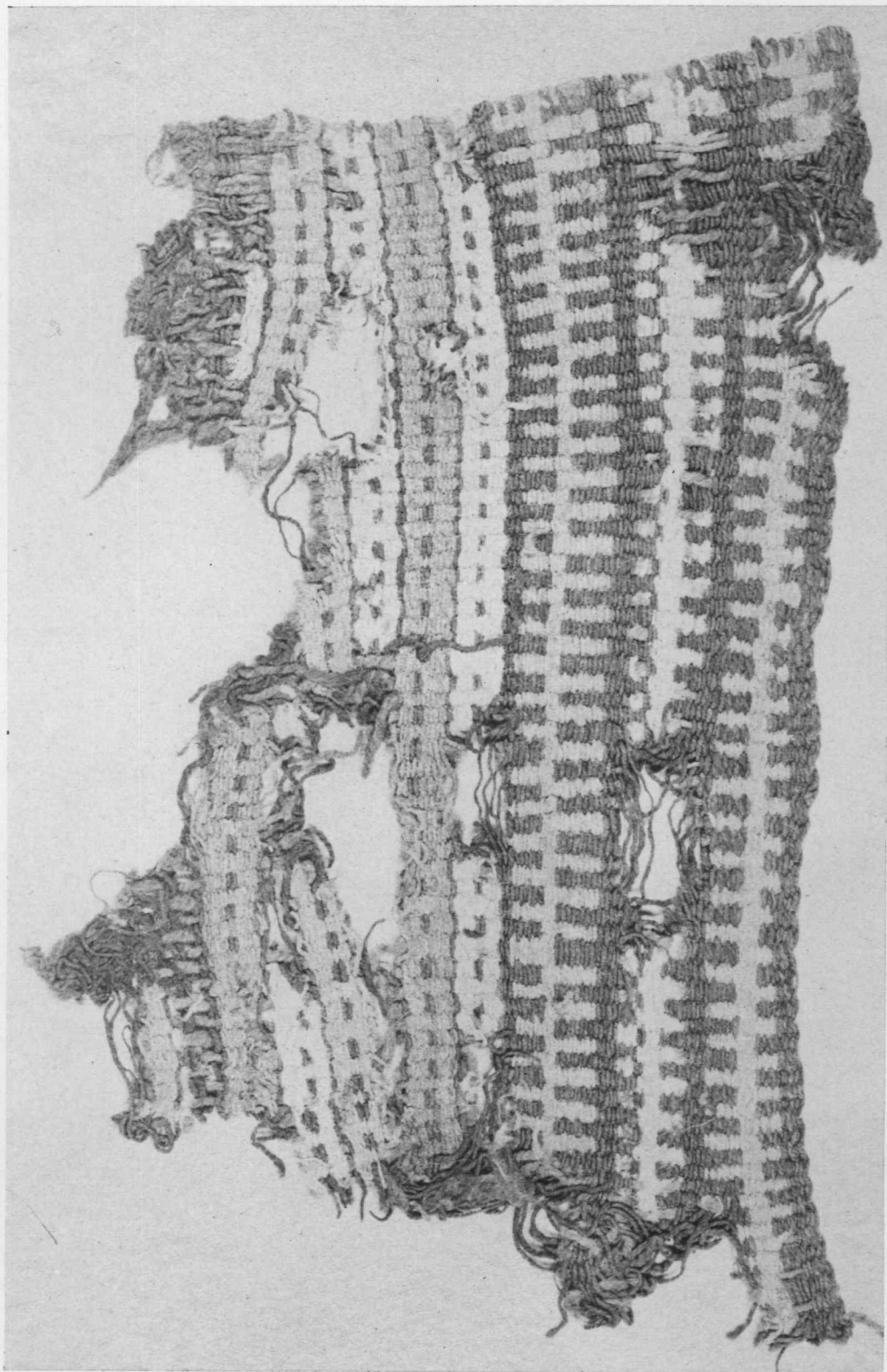


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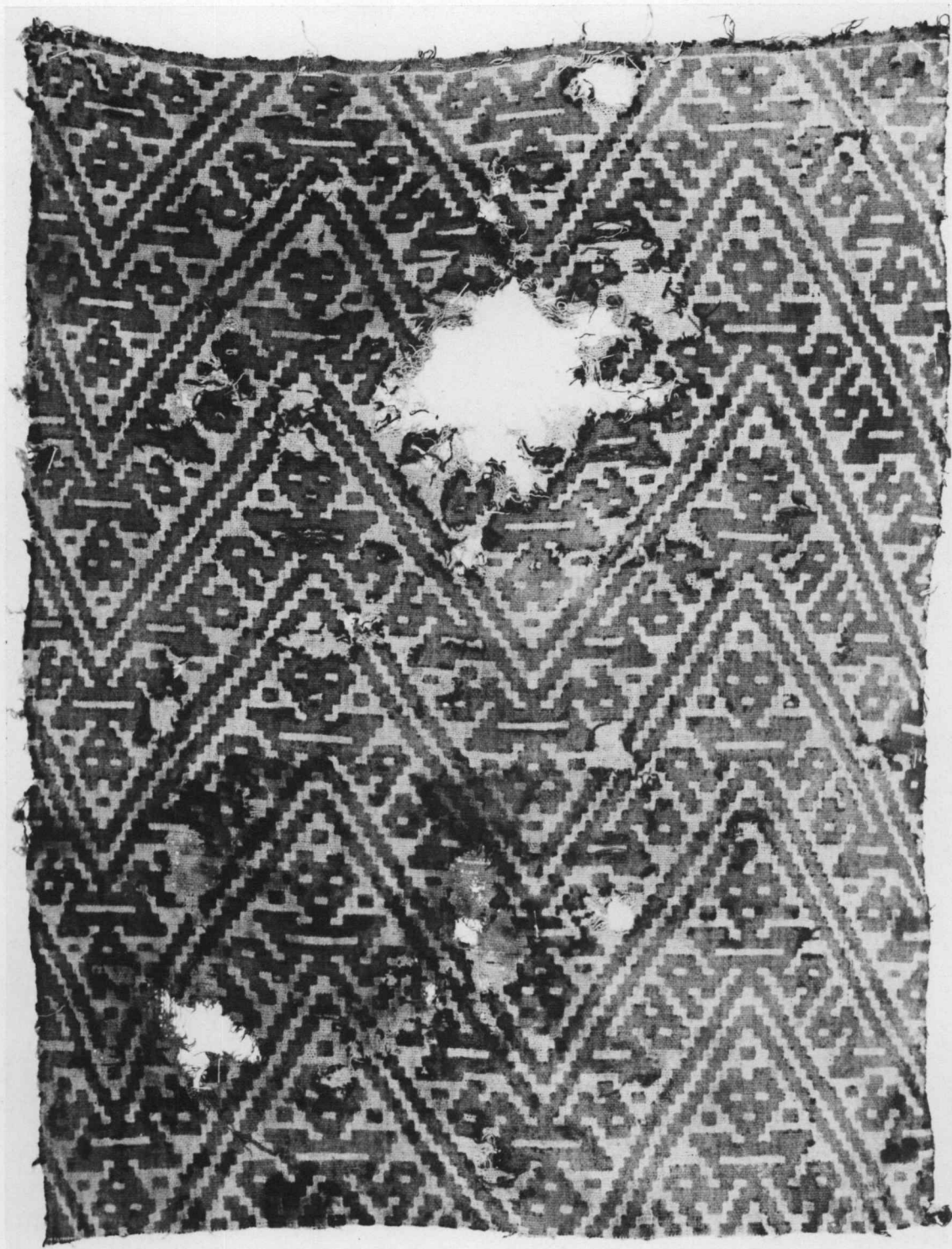


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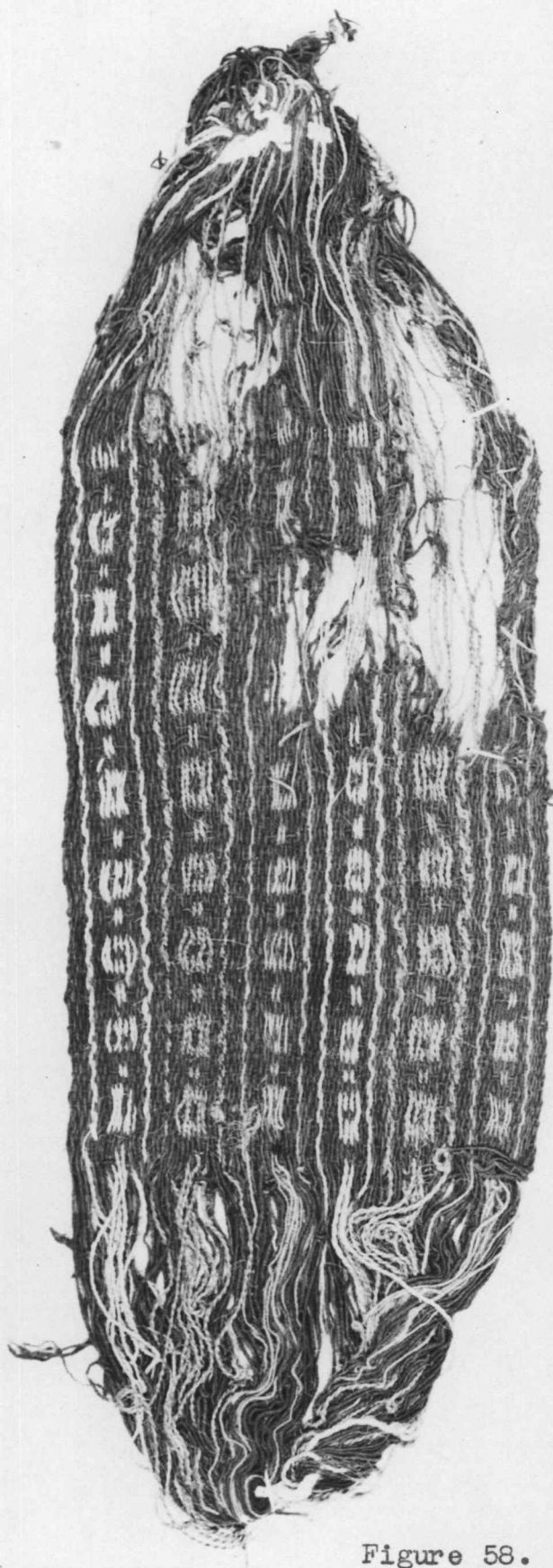


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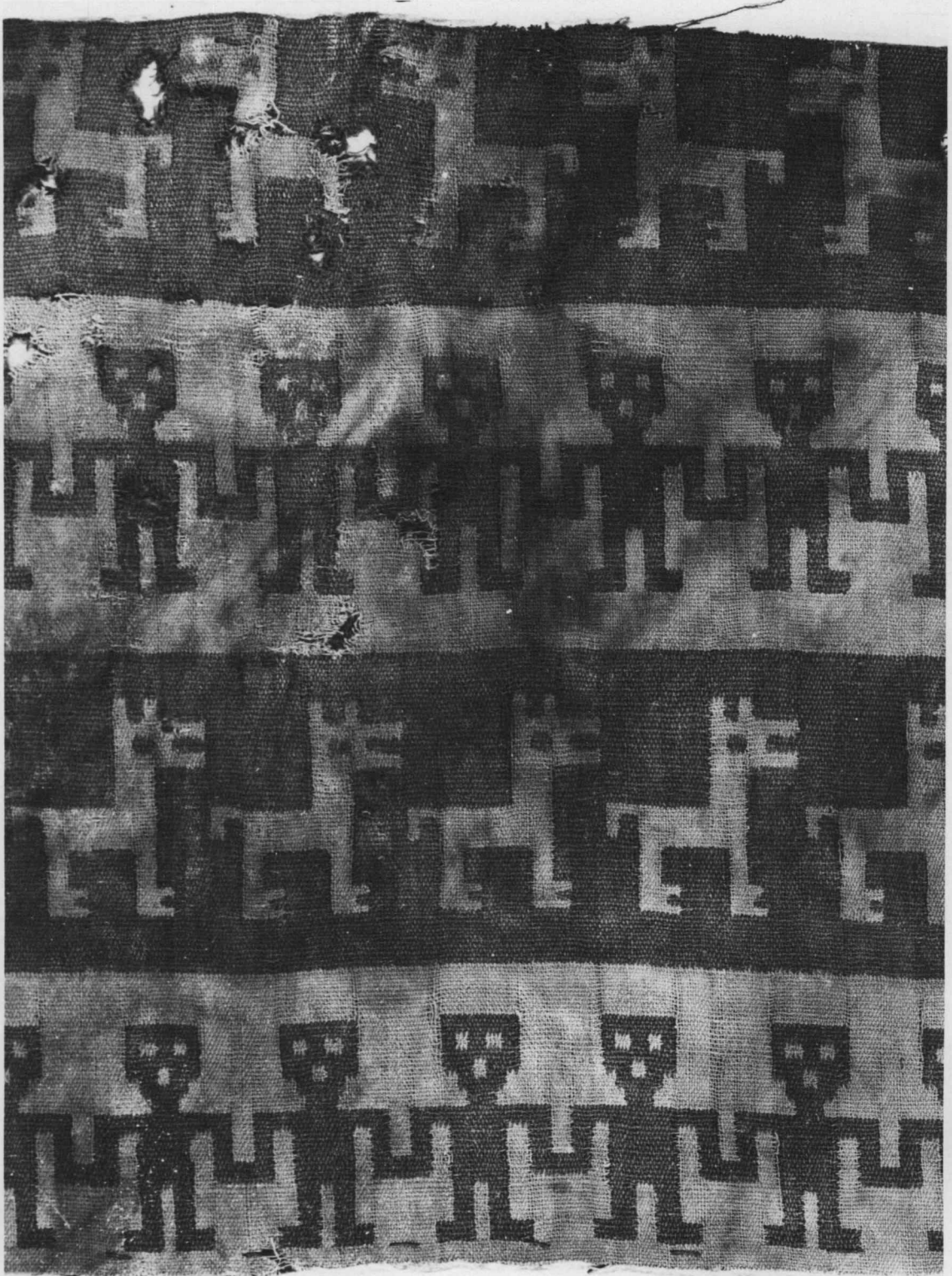


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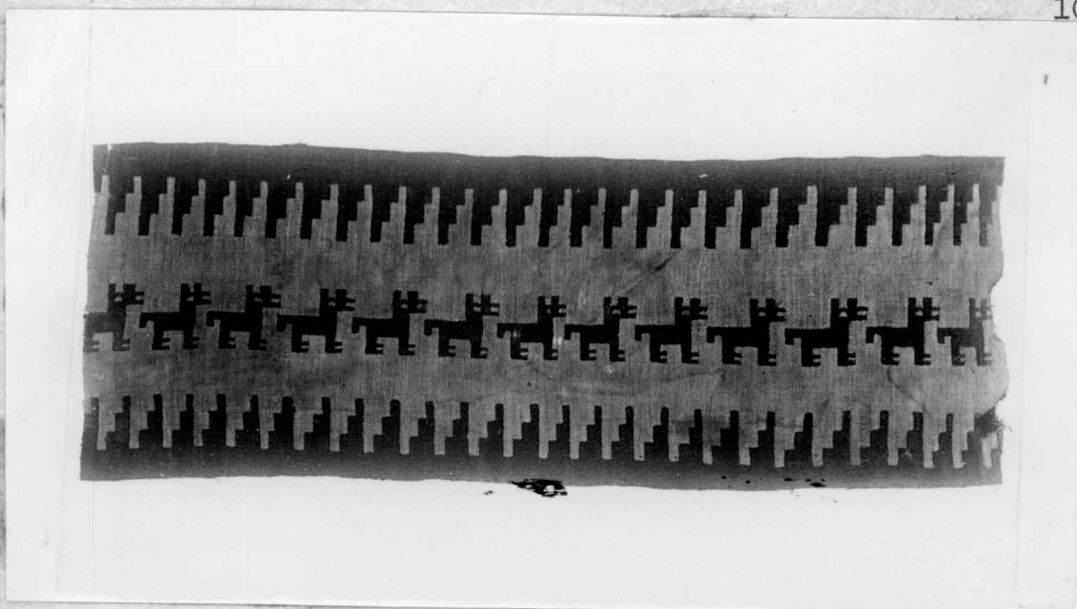


Figure 60.

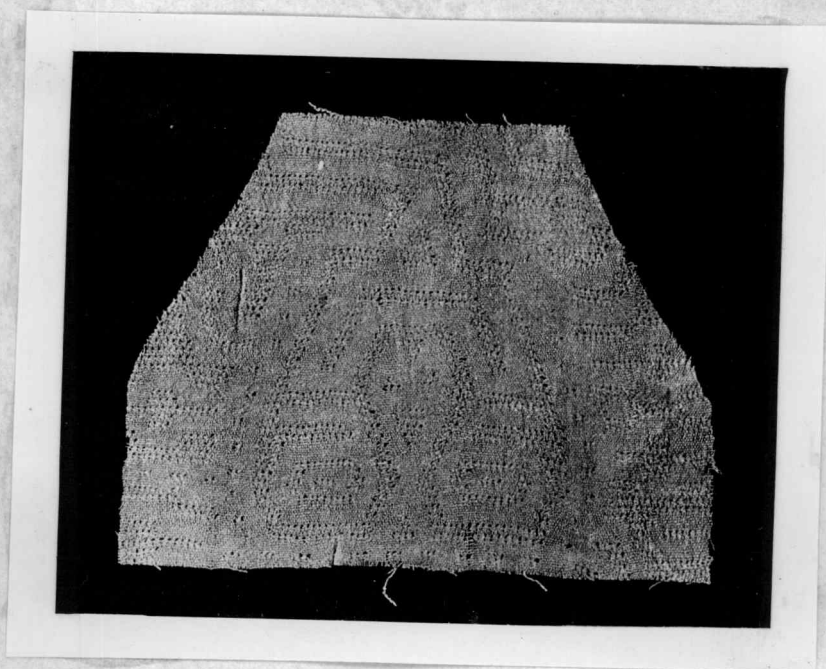


Figure 61.

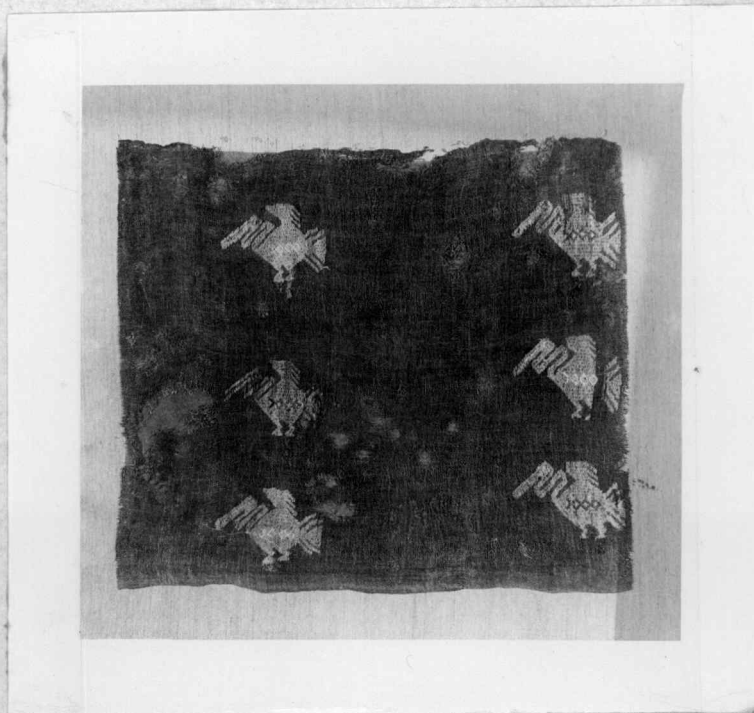


Figure 62.

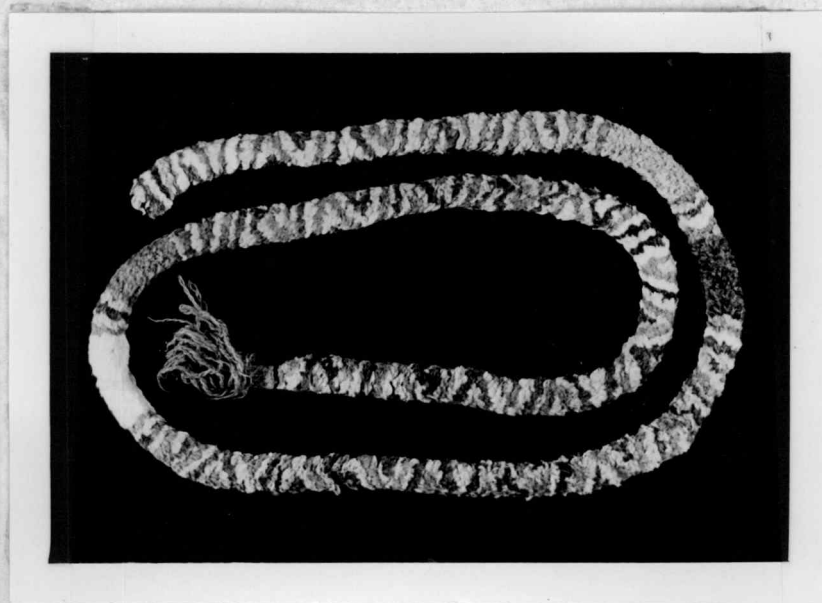


Figure 63.

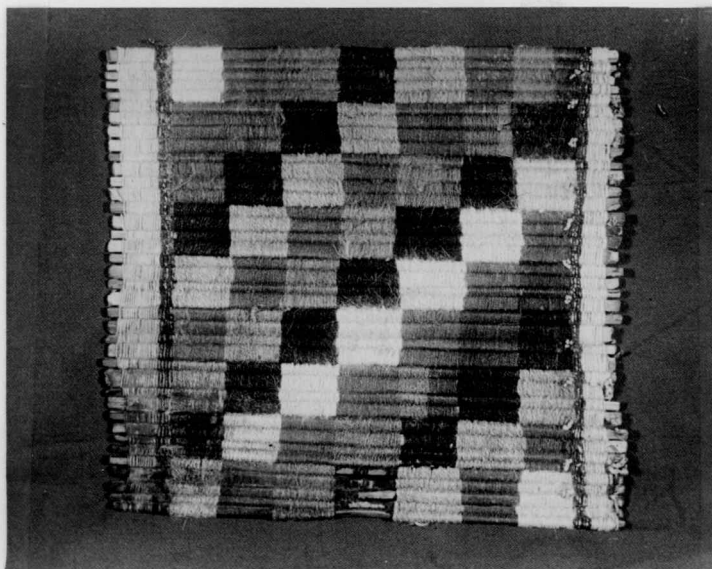


Figure 64.



Figure 65.

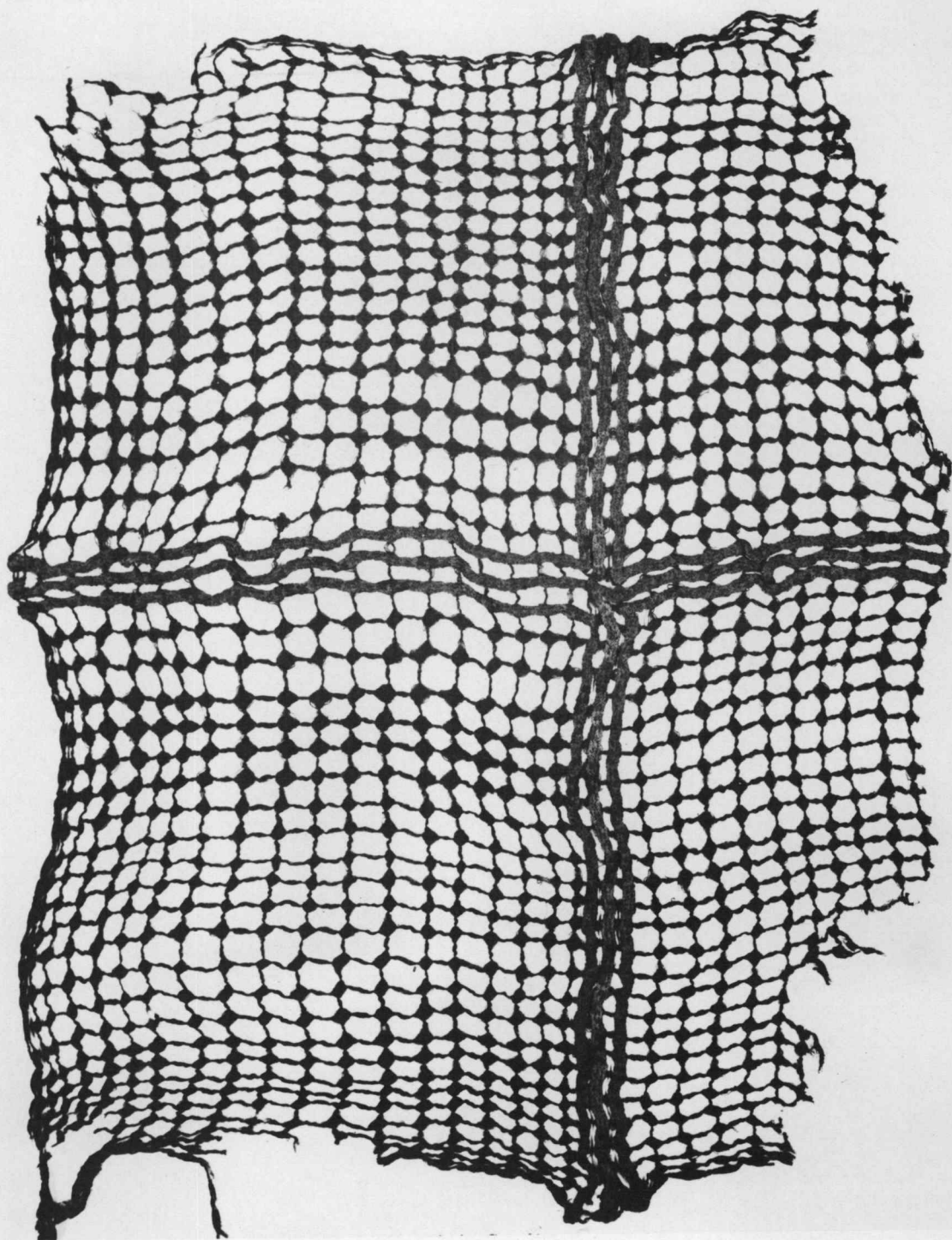


Figure 66.

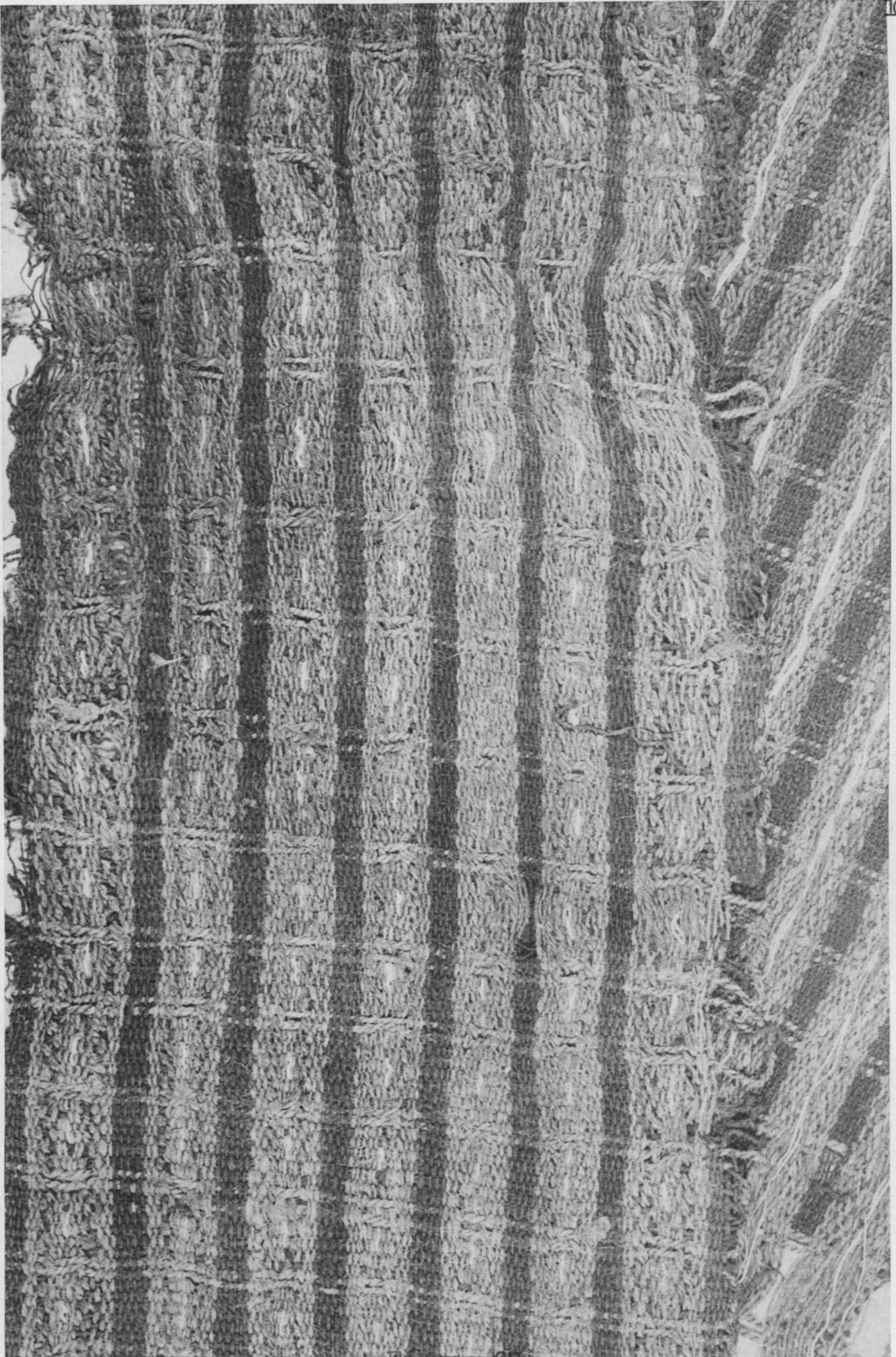


Figure 67.

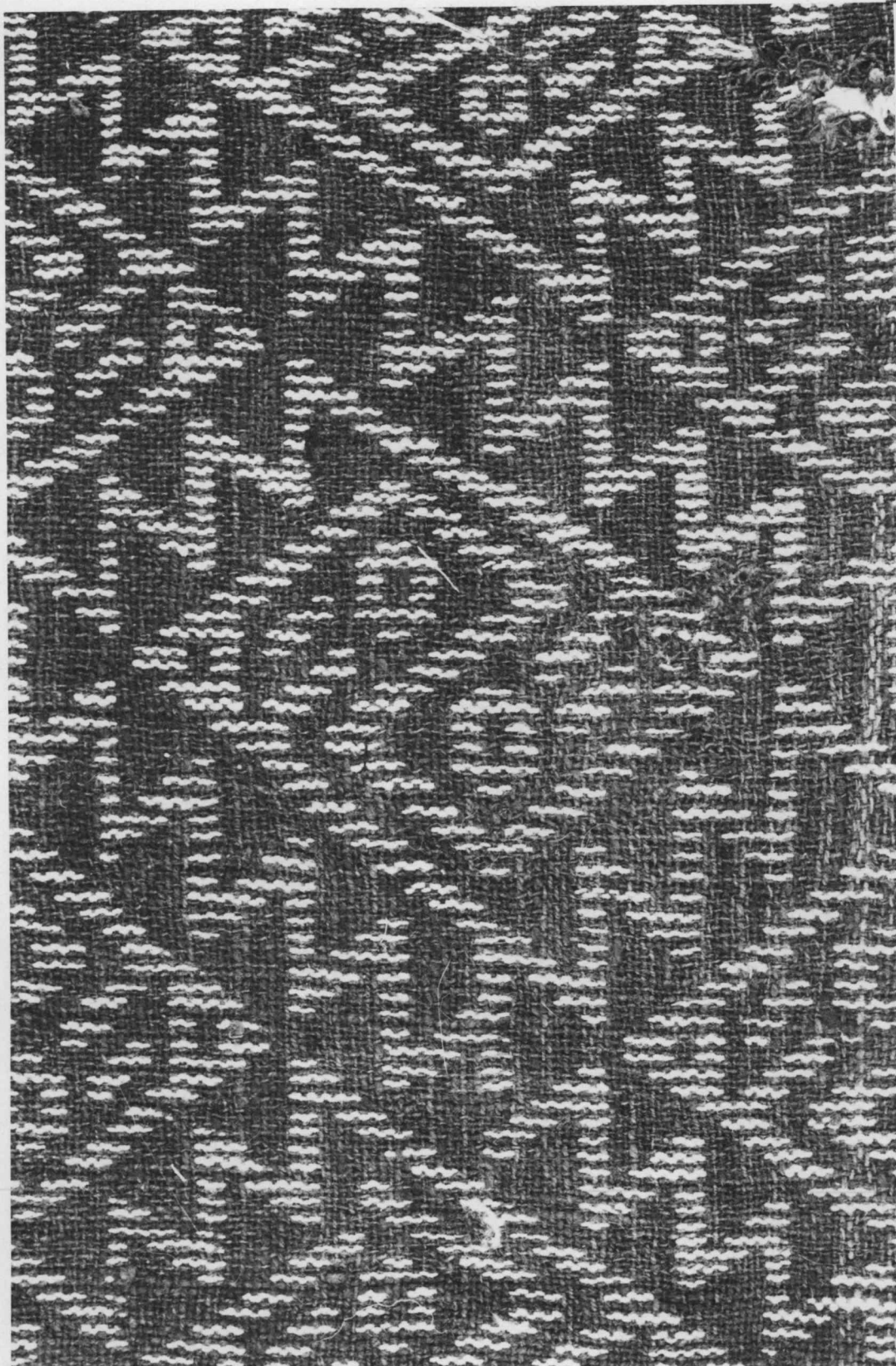
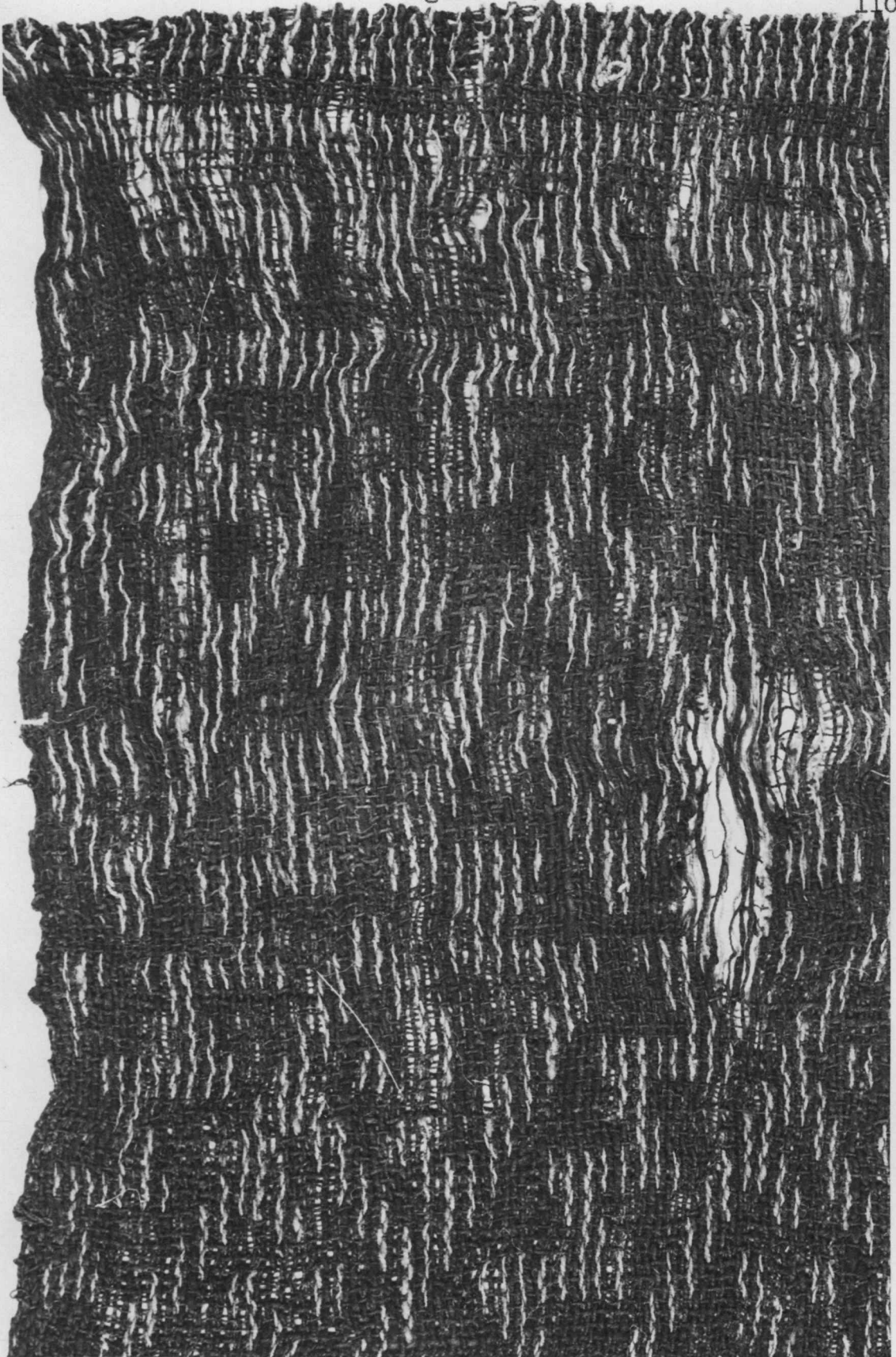


Figure 68.

Figure 69.



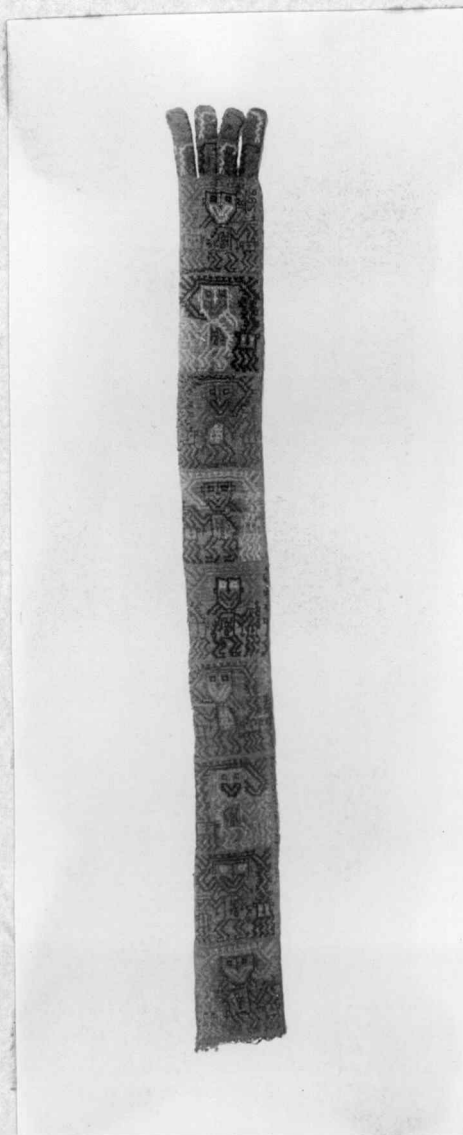


Figure 70.

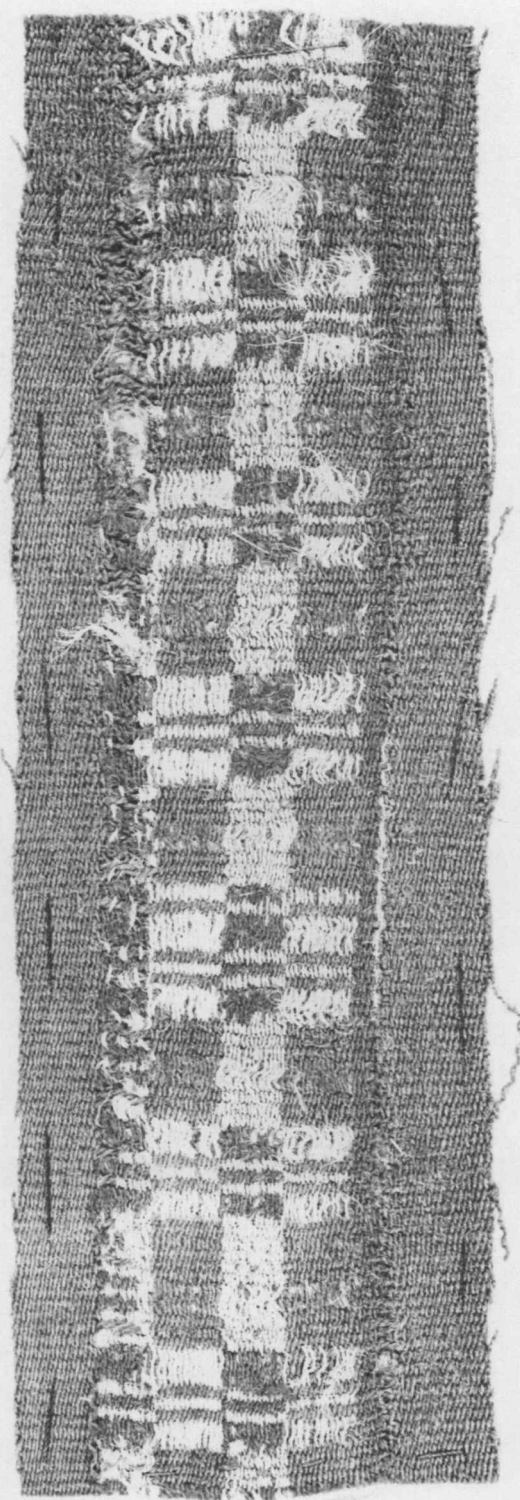


Figure 71.



Figure 72.

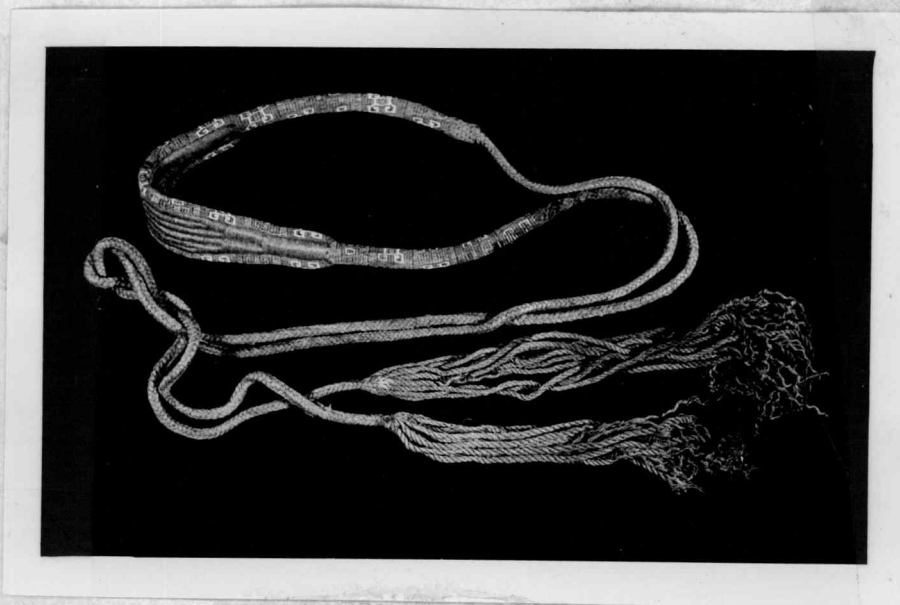


Figure 73.



Plate I.



Plate II.

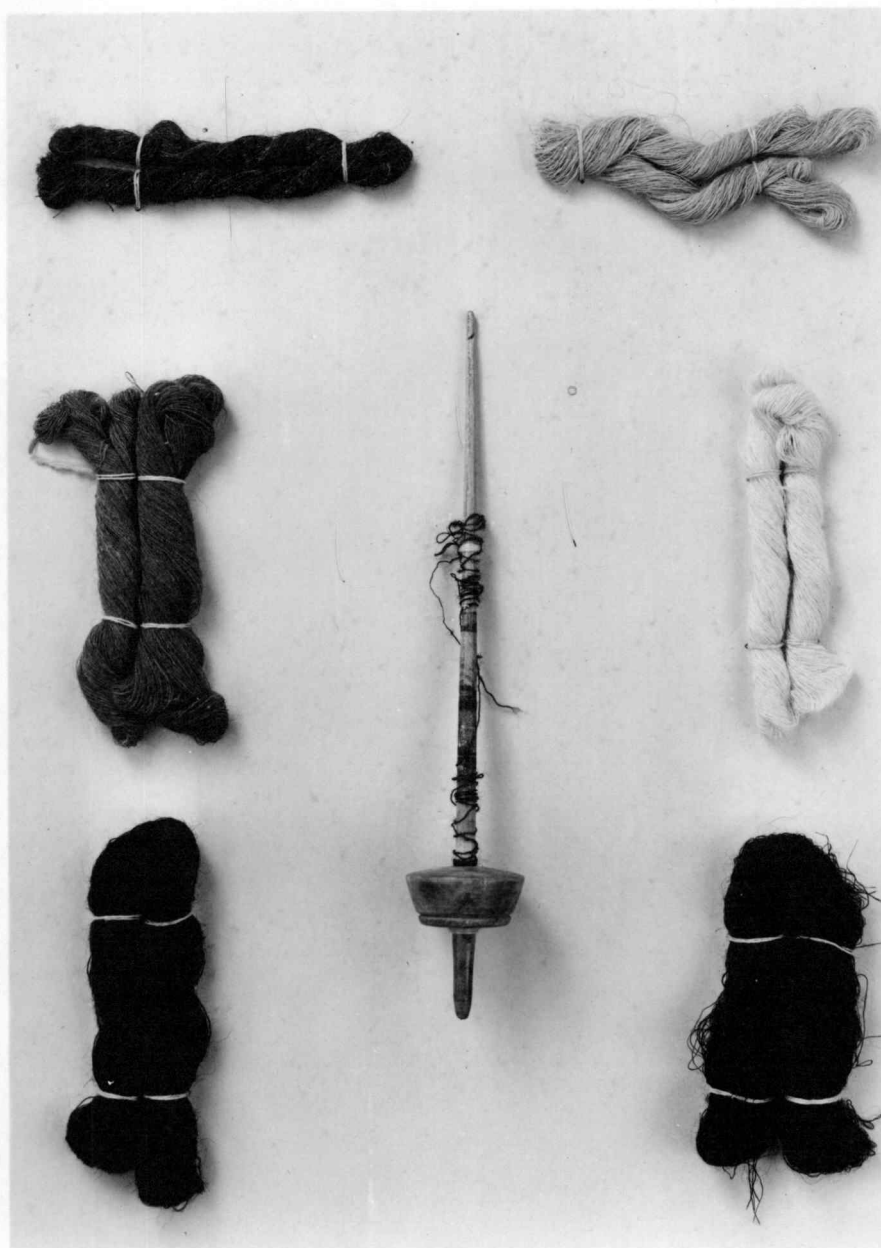


Plate III.

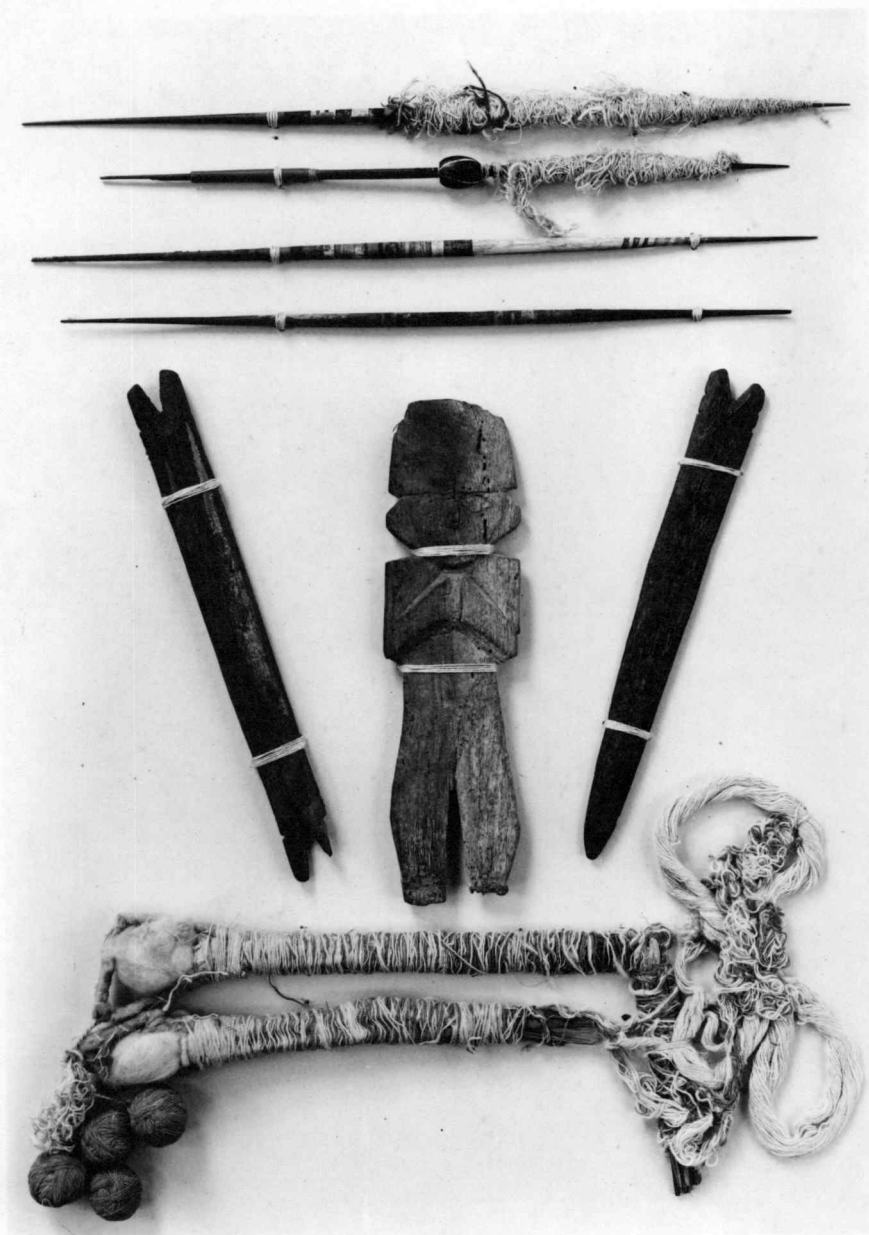


Plate IV.